

# NOUN Journal of Education (NOUNJE)

Volume 9, 2023

Published by the Faculty of Education, National Open University of Nigeria, University

## THE EDITORIAL BOARD

### *Editor-in-Chief*

Prof. Bamikole O. Ogunleye

### *Editors*

Prof. Ogunsola-Bandele Mercy

Prof. Ibrahim O. Salawu

Prof. Charity A. Okonkwo

Prof. U. S. A. Osuji

### *Managing & Associate Editor*

Dr Johnson A. Opatеye

### *Business Editors*

Prof. Ukwueze Augustine C.

Dr Marcellinus C. Anaekwe

Dr Temilola Apena

Dr Olaniyi Akeem

Dr Lukman Bello

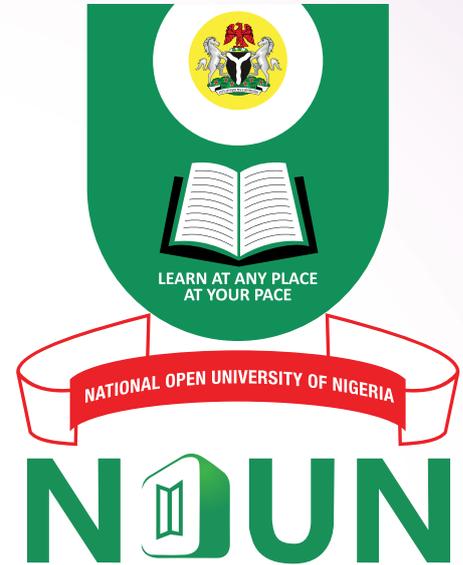
Dr Adetola Akanbienu

Felix Olakulehin

Dr Rotimi Akande

Dr Sherif Olatunji

Dr Oluwasogo R. Ogunleye



## CONSULTING EDITORS

Prof. Olugbemiо Jеgedе  
(NIGERIA)

Prof. Ojo Olugbenga  
(NOUN)

Prof. Helen N. Odogwu  
(University of Lagos)

Prof. (Mrs) Nnaka Chibogwu  
(NOUN)

Prof. Abubakar K. Abdulrahman  
(Modibo, AUT, Yola)

Prof. Julius K. Adeyemi  
(University of Lagos)

Prof. Tanglang Nebath  
(NOUN)

Prof. Nnadi Christopher  
(NOUN)

Prof. Okopi Fidel  
(NOUN)

Prof. Caro Okpara  
(University of Lagos)

Prof. Rumble Greville  
(UK)

Prof. James Timothy  
(NOUN)

Prof. Amos A. Shaibu  
(Ahmadu Bello Univ., Nigeria)

Prof. Eleanor Johannes  
(University of S. Africa)

Prof. Ogidan Joshua  
(NOUN)

Prof. Onyia Alexander U.  
(NOUN)

Prof. Hendrikz John  
(Univ. of Pretoria., S. Africa)

Prof. Irene Osisioma  
(California State Univ., CA-USA)

Dr. Ukoha Igwe  
(NOUN)

Prof. J. B. Babalola  
(Univ. of Ibadan, Nigeria)

Prof. Uche Nzewi  
(Univ. of Pretoria., South Africa)

Prof. Alex J. Romiszowski  
(USA)

Prof. I. E Ekpenyang  
(Univ. of Benin, Nigeria)



# **NOUN JOURNAL OF EDUCATION (NOUNJE)**

**VOLUME 9, 2023**

**PUBLICATION OF THE FACULTY OF EDUCATION,  
NATIONAL OPEN UNIVERSITY OF NIGERIA**

## THE EDITORIAL BOARD

### *Editor-in-Chief*

Prof. Bamikole O. Ogunleye

### *Editors*

Prof. Mercy Ogunsola-Bandele

Prof. Ibrahim O. Salawu

Prof. Charity A. Okonkwo

Prof. U. S. A. Osuji

### *Managing & Associate Editor*

Dr. Johnson A. Opataye

### *Business Editors*

Prof. Augustine C. Ukwueze, Dr. Marcellinus C. Anaekwe, Dr. Temilola Apena, Dr. Olaniyi Akeem, Dr. Lukman Bello, Dr. Adetola Akanbienu, Felix Olakulehin, Dr. Rotimi Akande, Dr. Sheriff Olatunji, Dr. Oluwasogo R. Ogunleye

### *Consulting Editors*

Prof. Olugbemiro Jegede  
(Nigeria)

Prof. Olugbenga Ojo  
(NOUN)

Prof. Helen N. Odogwu  
(University of Lagos)

Prof. (Mrs) Nnaka Chibogwu  
(NOUN)

Prof. Abubakar K. Abdulrahman  
(Modibo, AUT, Yola)

Prof. Julius K. Adeyemi  
(University of Lagos)

Prof. Nebath Tanglang  
(NOUN)

Prof. Nnadi Christopher  
(NOUN)

Prof. Fidel Okopi  
(NOUN)

Prof. Caro Okpara  
(University of Lagos)

Prof. Rumble Greville  
(UK)

Prof. James Timothy  
(NOUN)

Prof. Amos A. Shaibu  
(Ahmadu Bello University Nigeria)

Prof. Eleanor Johannes  
(University of South Africa)

Prof. Joshua Ogidan  
(NOUN)

Prof. Alexander U. Onyia  
(NOUN)

Prof. Hendrikz John  
(Univ. of Pretoria., S. Africa)

Prof. Irene Osisioma  
(California State Univ., CA-USA)

Dr. Ukoha Igwe  
(NOUN)

Prof. J. B. Babalola  
(University of Ibadan, Nigeria)

Prof. Uche Nzewi  
(University of Pretoria., South Africa)

Prof. Alex J. Romiszowski  
(USA)

Prof. I. E Ekpenyang  
(University of Benin, Nigeria)

**© Faculty of Education**

**Published 2023**

**National Open University of Nigeria**

**All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronics, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.**

**ISSN: 2504-8945**

**Volume 9, 2023**

**Published by the Faculty of Education, National Open University of Nigeria, University Village, Plot 91, Nnamdi Azikiwe Expressway, Jabi, FCT Abuja, Nigeria**

## NOUN JOURNAL OF EDUCATION (NOUNJE)

### **Aim and Scope**

Its aim is to publish scholarly research outputs. The scope of the journal covers the broad areas in the field of education. It will also publish research monographs, feature articles, brief notes, comments on published articles and book reviews.

### **Guides to Authors**

The journal shall publish original research output in any of the areas of education and Information and Communication Technology (ICT). It will disseminate the results of original research in these fields. Review papers and short communications on topical issues of contemporary importance are also accepted.

### **Manuscripts**

All manuscripts shall follow strictly the most current APA format. Authors are advised to follow this format. Manuscripts that do not follow this format will not be published. The maximum length of manuscripts should be five thousand (5000) words of about 15 pages including references and illustrations. Only five tables and illustrations will be included in the body of the manuscript. Also, Times New Roman, 12 points and 1.5 line spacing should be used. However, these additional materials or resources must be referenced in the body of the manuscript. The submission of empirical or theoretical/opinion research should be arranged in the following sequence.

### **Empirical Research**

#### ***Title Page***

This should contain the following information:

- i. A concise title of the paper, not exceeding 20 words
- ii. Author(s) surname first followed by other names
- iii. Full postal address/institutional address, e-mail and phone number of the author or the corresponding author in case of multiple authors.

#### ***Abstract***

The abstract should be written in English and must be between 150 to 200 words. It should indicate the objectives, scope, major findings and conclusion of the study. The keywords must be indicated underneath.

- Introduction
- Theoretical Framework/Literature review
- Methodology
- Results
- Discussion of Findings: This may be combined with results

- Conclusion
- Recommendation(s) – if necessary
- References

## **Opinion/Theoretical Paper**

### ***Title Page***

This should contain the following information:

- i. A concise title of the paper, not exceeding 20 words
- ii. Author(s) surname first followed by other names
- iii. Full postal address/institutional address, e-mail and phone number of the author or the corresponding author in case of multiple authors.

## **Others for both Empirical and Theoretical/Opinion Research**

- ***Illustrations if necessary***

Each table, figure, plate and so on must be on a separate page and numbered in Arabic numbers. All illustrations and tables should not exceed five in one article and must be properly referred to in the main text.

- **Acknowledgement(s)**

The contribution of person(s) or organisations to the research should be clearly stated.

- ***Referencing***

Authors are advised to adhere to the current APA format at the time of submission. However, example of the 7<sup>th</sup> Edition is given for the purpose of guidance. Citations in text should be by author's names and year e.g., Jegede (2020) where it forms part of a sentence or (Ogunleye, 2023) where it appears at the end of a sentence; for two authors, (Anaekwe and Okpala, 2021); and plus, et al for citing more than three authors, (e.g., Salawu et al, 2021). Where reference is made to multiple authors, a semicolon should separate them (e.g., Ukwueze, 2020; Opatye, 2019, and Osuji & Bello, 2022). Online citation must be followed by the date retrieved. All references cited in the text must be listed alphabetically by author's surname followed by initials under "Reference". Works not cited should not appear in the reference section of your work. Please, no end notes and foot notes. Articles which did not follow this format will be returned to the author.

**Review of Manuscript:** Review of manuscripts shall be rigorous double blind peer review. These reviewers would review manuscripts and their feedbacks would be sent to authors in a timely manner by the Editor through e-mail. Final selection of papers for publication in the journal will be based on paper originality, technical quality, use of language and overall contribution to knowledge. The Editorial Board reserves the right to accept, reject, or suggest modifications to the manuscripts submitted for publication, and to make suitable stylistic adjustments at publication stage. High quality, academic integrity, ethics and morals are expected from the authors and discussants. Articles are accepted throughout the year. Manuscripts with evidence of plagiarism will not be published.

In addition, corresponding author must give the declaration as to the authenticity of the work submitted. This declaration should state that the article or work submitted for publication in the journal is an original work; acknowledgement of the words cited or used in writing articles properly done, and that the work has not been submitted or accepted for publication in another journal. Remember that by maintaining academic integrity we not only do the right thing but also help the growth, development and recognition of scholarship.

**Page charges and Colour illustration:** Articles with coloured illustration will attract additional cost that will be communicated to those that are affected. After publication the author gets one copy. Any additional copy attracts extra cost.

**Submission of Manuscripts:** Papers/manuscripts prepared as detailed above should be sent to the editor through: [nounje@noun.edu.ng](mailto:nounje@noun.edu.ng)

**Publication Fees:** Each article attracts payment of thirty thousand naira only (ten thousand naira for assessment and twenty thousand naira for publication). Accompanied with a scanned copy of the bank teller used in paying the sum of ten thousand naira as the assessment fee.

**Deadline for Submission:** All articles for publication should reach the Editorial Board on or before 31<sup>st</sup> December 2023. For further enquires contact: Editor-in-Chief, Prof. Bamikole O. Ogunleye. +234-8034072263, [bogunleye@noun.edu.ng](mailto:bogunleye@noun.edu.ng) or Managing Editor: Dr. Johnson A. Opatye, +234-8065810979, [jopateye@noun.edu.ng](mailto:jopateye@noun.edu.ng)

The online version of all published articles would be accessed at [www.nou.edu.ng](http://www.nou.edu.ng)

## LIST OF CONTRIBUTORS

1. **Akanbiemu, Adetola Adebisi** - Department of Library and Information Science, National Open University of Nigeria, Abuja
2. **Oteniya Mojeed Gbenga** - Department of Science and Vocational Education, Al-Qalam University Katsina
3. **Mustapha Sada** - Department of Arts and Social Education, Al-Qalam University Katsina
4. **Kursum Isah Abdullahi** - Department of Arts and Social Education, Al-Qalam University Katsina
5. **Popoola Oluwasegun Oladipupo** - Obafemi Awolowo University, Ile-Ife
6. **Abaa, Angela Ebere** - Faculty of Education, National Open University of Nigeria, Abuja.
7. **Onobumeh Margaret** - Department of Health, Safety and Environmental Education, Faculty of Education, University of Benin, Benin, Nigeria
8. **Jamiu AbdulQudus Tosin** – Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin. Ilorin, Nigeria
9. **Acquah, Queen Elizabeth** - Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin. Ilorin, Nigeria
10. **Oparaduru, John Onyemauche** - Faculty of Education, Department of Educational Foundations, National Open University of Nigeria, Abuja
11. **Oluwasogo Ruth Ogunleye** - Department of Human Kinetics and Health Education. National Open University of Nigeria, Abuja
12. **Ogungbo, Moruf Olawale** - Department of Educational Management, Lagos State University, Ojo, Lagos State
13. **Abdulraheem, Ismail Kunmi** - Department of Business Education, Al-Hikmah University, Ilorin
14. **Abbas, Jamiu Abiodun** - Department of Business Education, Al-Hikmah University, Ilorin
15. **Isiaq, Jamiu Owonwami** - Department of Business Education, Al-Hikmah University, Ilorin
16. **Kareem Azeez Olawale** - Department of Curriculum & Instruction, Sikiru Adetona College of Education Science & Technology, Omu-Ajose (SACOETEC)
17. **Janet O. Adetayo** - Department of Science and Technology Education, Faculty of Education, Olabisi Onabanjo University, Ago-Iwoye
18. **Ajeniyi, Adekemi Esther, Ayoade, Peter Abiola, Olayiwola, Aanuoluwa Oladiran & Kalu, Aloysius Eze** - Department of Business Education, Federal College of Education (Special), Oyo
19. **Cornelius Ekene Odoh & Roseline Egbunu** - Department of Science Education, Faculty of Education, National Open University of Nigeria, Abuja.
20. **Wada, B. Zira** - Department of Arts and Social Sciences Education, National Open University of Nigeria, Abuja
21. **Oludare, Bosede Abiola** - Department of Curriculum and Instruction, Adeyemi Federal University of Education, Ondo

22. **Olakunde, Mopelola Susan** - Department of General Studies, Adeyemi Federal University of Education, Ondo
23. **Olasunkanmi, Israel Abayomi & Ayoola, Oyindamola, Temitope** - Educational Technology Unit, Department of Science and Technology Education, University of Ibadan, Nigeria
24. **Okwoli, Mercy Enefu & Okpala, Angela Ebele** – The University Library, National Open University of Nigeria, Jabi, Abuja
25. **Adeagbo, Joseph Olusegun, Gbadebo Salako & Oludele. A. Ojediran** - Emmanuel Alayande University of Education Oyo, Oyo State Nigeria
26. **Murtala Mohammed Jangebe** - School of Health Technology, Tsafe, Zamfara State
27. **Mubarak Umar** - Department of Human Kinetics and Health Education Ahmadu Bello University, Zaria
28. **Fatima Zubairu & Bashir Abdullahi** - Zamfara State College of Art and Science
29. **Benson C. Ezeanyi, Zephrinus C. Njoku & Marcellinus C. Anaekwe** - Department of Science Education, National Open University of Nigeria, Abuja
30. **Arogundade, Oladele, Olatunde Funmilayo, Sule Fatai O.** Emmanuel Alayande University of Education, Oyo
31. **Aribamikan Collins G.** - Bamidele Olumilua University of Education, Science and Technology, Ikere Ekiti
32. **Soluade, Zabur Olayiwola & Bashiru Muniru Adebayo** - Department of Sociological Studies, College of Social and Management Sciences, Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria
33. **Akapo, Tijani Abayomi** – Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria
34. **Shekoni Lateef Kehinde** - Department of Language Arts and Social Science Education, Lagos State University, Ojo, Lagos State
35. **Sulaimon Olawale, Nosiru & Oluyemo Alade Abdullateef** - Science Education Department, Faculty of Education, National Open University of Nigeria, Abuja
36. **Oluyemo Alade Abdullateef** - Educational Foundations Department, Faculty of Education, National Open University of Nigeria, Abuja
37. **Oluwayemisi. A. Makinde** - Department of Human Kinetics & Health Education, Faculty of Education, National Open University of Nigeria, Abuja
38. **Toinpere Mercy Frederick-Jonah, John Billy Moses & Ebiemi Omietimi Charles** - Department of Science Education, Niger Delta University, Wilberforce Island, Bayelsa State
39. **Sheriff Olamide Olatunji** - Department of Arts and Social Sciences Education National Open University of Nigeria, Abuja Ayegboyin, Salimat Adebola - Department of Arts and Social Sciences Education, University of Ibadan, Ibadan
40. **Abiola Babatunde Popoola** - Department of Curriculum and Instruction, Alvan Ikoku Federal College of Education, Owerri.
41. **Tiamiyu M. Oladimeji** - Directorate of Advancement and Linkages, National Open University of Nigeria, Abuja
42. **Abidoeye, Florence Omosholape, Aladesuyi David Adeyemi & Ahmed Aduke Rihanat** - Department of Science Education, Faculty of Education, University of Ilorin

## TABLE OF CONTENTS

	<b>Page</b>
Exploring Innovativeness among Open, Distance, and E-Learning Librarians in National Open University of Nigeria: Addressing Constraints and Proposing Solutions <b>Akanbiemu, Adetola Adebisi</b>	<b>1</b>
Relationship between Openness to Experience Personality Trait and Achievement in Mathematics among Senior Secondary School Students in North-West Geo-Political Zone of Nigeria <b>Oteniya Mojeed Gbenga, Mustapha Sada &amp; Kursum Isah Abdullahi</b>	<b>18</b>
Personality Types as Determinant of Self-Employment Among Undergraduate Students in Obafemi Awolowo University, Ile-Ife: Catalyst for Enhancing the Coherent Curriculum in Nigeria <b>Popoola Oluwasegun Oladipupo</b>	<b>25</b>
Social Media and Dating Behaviour among Adolescents in Obio/Akpo Local Government Area, Rivers State <b>Abaa, Angela Ebere</b>	<b>36</b>
Influence of Sex Education in Curbing Social Vices among Female Adolescents in Ilorin West LGA, Kwara State <b>Onobumeh Margaret, Jamiu AbdulQudus Tosin &amp; Acquah, Queen Elizabeth</b>	<b>43</b>
Effect of Marital Counselling on Marital Stability among Married Couples in Imo State, Nigeria <b>Oparaduru, John Onyemauche</b>	<b>53</b>
Entrepreneurship Education as Correlate of Employment Opportunities among Graduating Students in Lagos State University, Nigeria <b>Ogungbo, Moruf Olawale, Abdulraheem, Ismail Kunmi, Abbas, Jamiu Abiodun &amp; Isiaq, Jamiu Owonwami</b>	<b>65</b>
Determinant of the Predictive Strength of UTME Scores in Public Universities: A Meta Analysis <b>Kareem Azeez Olawale &amp; Janet O. Adetayo</b>	<b>71</b>
Funding Business Education in a Depressed Economy: Issues, Challenges and The Way-Forward <b>Ajeniyi, Adekemi Esther, Ayoade, Peter Abiola, Olayiwola, Aanuoluwa Oladiran &amp; Kalu, Aloysius Eze</b>	<b>78</b>
Strategies for Utilizing ICT to Improve the Teaching of Vocational Subjects in	

Secondary Schools in Enugu State <b>Cornelius Ekene Odoh &amp; Roseline Egbunu</b>	<b>86</b>
Vocational Education as a Means of Serving Individual and Societal Needs <b>Wada, B. Zira</b>	<b>99</b>
Correlation Among Study Habit, Self-Efficacy and Students' Attitude to Prose Literature in Ondo West Local Government Area, Ondo State <b>Oludare, Bosede Abiola &amp; Olakunde, Mopelola Susan</b>	<b>108</b>
Effect of Google Classroom on Students' Achievement in Computer Studies in Junior Secondary Schools in Ibadan South-West of Oyo State <b>Olasunkanmi, Israel Abayomi &amp; Ayoola, Oyindamola, Temitope</b>	<b>117</b>
The Use of Cloud Computing Services in the National Open University of Nigeria Library for Information Archiving and Retrieval <b>Okwoli, Mercy Enefu &amp; Okpala, Angela Ebele</b>	<b>126</b>
Education, Poverty and Economic Growth in Nigeria (1990-2022) <b>Adeagbo, Joseph Olusegun, Gbadebo Salako &amp; Oludele. A. Ojediran</b>	<b>136</b>
Attitude of Pregnant Mothers Toward Antenatal Care Services in North-West Zone, Nigeria <b>Murtala Mohammed Jangebe, Mubarak Umar, Fatima Zubairu &amp; Bashir Abdullahi</b>	<b>145</b>
Gender and School Location as Moderators of Entrepreneurial Aspirations and Mathematics Achievement of Senior Secondary School Students in Anambra State, Nigeria <b>Benson C. Ezeanyi, Zephrianus C. Njoku &amp; Marcellinus C. Anaekwe</b>	<b>153</b>
Sexual Factors and School Drop-Out Among Secondary School Girls in Oyo Central Senatorial District of Oyo State, Nigeria <b>Arogundade, Oladele, Olatunde Funmilayo, Sule Fatai O. &amp; Aribamikan Collins G.</b>	<b>164</b>
Knowledge and Awareness of Primary School Pupils on Environmental Citizenship in Abeokuta South Local Government Area of Ogun State <b>Soluade, Zabur Olayiwola, Bashiru Muniru Adebayo, Akapo, Tijani Abayomi &amp; Shekoni Lateef Kehinde</b>	<b>172</b>
An Assessment of Awareness of the Library Automation Circulation System among Staff and Students of Tai Solarin University of Education <b>Sulaimon Olawale, Nosiru &amp; Oluyemo Alade Abdullateef</b>	<b>181</b>
Synergies of Technological Advances in Telemedicine, Sports and Tourism <b>Oluwasogo Ruth Ogunleye</b>	<b>190</b>

---

Lifestyle Characteristics Associated with Fibroid Tumor <b>Oluwayemisi. A. Makinde</b>	<b>198</b>
Effects of Mobile Learning Apps Instructional Strategy on Students' Achievement in Chemistry and Numerical Ability Among Secondary Schools in Yenagoa Metropolis <b>Toinpere Mercy Frederick-Jonah, John Billy Moses &amp; Ebiemi Omietimi Charles</b>	<b>210</b>
Classroom Environment and Instructional Materials as Predictors of Senior Secondary Students' Achievement in Poetry in Ibadan Southwest Local Government Area of Oyo State <b>Sheriff Olamide Olatunji &amp; Ayegboyin, Salimat Adebola</b>	<b>220</b>
Effectiveness of Teaching Practice Exercise: The Roles of Supervisors and Cooperating Teachers <b>Abiola Babatunde Popoola, Sheriff Olamide Olatunji &amp; Tiamiyu M. Oladimeji</b>	<b>229</b>
Influence of Gender and Workload Concerns on Formative Assessment Conception of Biology Teachers in Secondary Schools in Ilorin Metropolis <b>Abidoye, Florence Omosholape, Aladesuyi David Adeyemi &amp; Ahmed Aduke Rihanat</b>	<b>240</b>

## EXPLORING INNOVATIVENESS AMONG OPEN, DISTANCE, AND E-LEARNING LIBRARIANS IN NATIONAL OPEN UNIVERSITY OF NIGERIA: ADDRESSING CONSTRAINTS AND PROPOSING SOLUTIONS

Akanbiemu, Adetola Adebisi

Department of Library and Information Science  
National Open University of Nigeria, Abuja  
aaadewojo@noun.edu.ng, +2348066632727

### Abstract

*This study investigates the challenges faced by open distance and eLearning librarians at the National Open University of Nigeria (NOUN). Specifically, it examines the extent to which collaboration with other departments and institutions acts as a constraint. Additionally, the research explores the barriers to creating interactive digital resources, fostering a culture of exploration and critical thinking, and securing adequate funds for training. Using a quantitative approach, the study employs surveys to collect data on various constraints, including limited resources, technological challenges, the digital divide, lack of training and professional development, copyright and licensing issues, institutional support, and student engagement and support. The findings indicate significant constraints in collaboration, resource creation, and fostering an exploratory culture, along with substantial difficulties in obtaining necessary funding for professional development. However, digital divide—uneven access to technology and digital resources—is the most significant constraint on innovativeness among NOUN librarians, with a high mean score of 1.95 out of 2. Other notable constraints include resource scarcity, limited access to information resources, insufficient funding, outdated technological infrastructure, lack of training and professional development opportunities, resistance to change, and institutional culture. These insights contribute to the understanding of the unique challenges faced by NOUN librarians and provide recommendations for enhancing their capabilities and improving library services in an open and distance learning environment.*

**Keywords:** Innovativeness, Innovative behaviour, Librarians, ODeL Librarians, NOUN

### Introduction

In the vibrant Nigeria's education sector, eLearning institutions have emerged as powerful catalysts for expanding access to quality education. These institutions, characterized by their flexibility and adaptability, are instrumental in accommodating a diverse range of learners. At the forefront of this digital revolution are librarians who play an indispensable role in shaping the educational experience, curating digital resources, and fostering innovation in the realm of information services (Diseiye et. al, 2024). However, as eLearning continues to gain prominence, it is essential to acknowledge and address the constraints that hinder the innovativeness of librarians in these institutions. This article examines these constraints, with a particular focus on the National Open University of Nigeria (NOUN).

In the realm of elearning libraries, several constraints can impede their innovativeness and hinder the effective integration of technology for educational purposes. One of the primary challenges identified in the literature is the inadequacy of IT infrastructure (Shahzad & Khan, 2023). Insufficient technological support can significantly hamper the implementation of elearning technologies, limiting the potential for professional development among library staff and the delivery of smart library services. This barrier underscores the critical need for robust IT

systems to support the innovative use of digital tools in educational settings. Moreover, the impact of the COVID19 pandemic has been profound, particularly in influencing the dissemination of innovative e-learning tools in higher education (Stecula & Wolniak, 2022). The crisis has accelerated the adoption of digital solutions, including e-learning platforms, to ensure continuity in education. However, challenges such as technical difficulties, reduced student engagement due to the lack of face-to-face interaction, and disparities in internet access have surfaced, highlighting the complexities involved in transitioning to fully digital learning environments (-, 2024).

Technological advancements, the emergence of web 2.0 tools, and the convergence of information and communication media have propelled library professionals to engage in e-learning programs to enhance their skills and adapt to evolving technologies (Shahzad et al., 2023). This necessitates a proactive approach to integrating e-learning initiatives within library settings to foster continuous learning and growth among staff members. Furthermore, the provision of smart services in academic libraries has been identified as a key enabler of enhanced learning experiences, particularly in the context of online and distance education (Hamad et al., 2022). Smart technologies offer opportunities to augment traditional library services, catering to the evolving needs of students and faculty engaged in remote learning. By leveraging innovative digital solutions, academic libraries can better support the educational journey of their users, thereby enhancing the overall e-learning environment.

In the pursuit of innovative education practices, the management of university libraries plays a pivotal role in driving sustainable development goals (Ofor-Douglas, 2023). However, challenges such as the lack of ICT infrastructure and internet facilities can impede the effective implementation of e-learning practices and hinder independent research initiatives. Overcoming these obstacles requires strategic investments in digital resources and infrastructure to create a conducive environment for innovative educational endeavours. The utilization of electronic resources in research and learning activities within faculty libraries underscores the critical role of libraries in facilitating knowledge dissemination and acquisition (Ankamah et al., 2022). By providing access to a diverse range of electronic resources, libraries empower students and researchers to engage in scholarly pursuits effectively, underscoring the importance of robust digital repositories in supporting e-learning initiatives.

In the context of capacity-building for librarians, enhancing learning capacity emerges as a crucial factor in improving service delivery within university libraries (Igbokwe, 2023). Institutions can enhance their ability to meet the evolving needs of users and adapt to technological advancements, by investing in continuous learning and development opportunities for library staff. This emphasis on capacity-building underscores the importance of nurturing a culture of learning and innovation within library settings. Furthermore, the adoption of technology-centered maker spaces in academic libraries reflects a broader trend towards creating collaborative and interactive learning environments (Masenya, 2023). These spaces serve as hubs for creativity, collaboration, and innovation, allowing users to engage with emerging technologies and explore new educational pathways. By embracing maker spaces and similar initiatives, libraries can foster a culture of innovation and hands-on learning among their patrons.

The innovativeness of librarians is a requirement for service delivery that meets the needs and expectations of the 21st-century information user (Obuezie & Alex-Nmecha, 2023). Information technology has revolutionised the way individuals and organisations, including university libraries, work (Dube & Jacob, 2023). There can be more astounding transformation with the rise of the internet of things, big data and artificial intelligence. Organisations like

university libraries need to be innovative because they are essentially needed to address the information challenges by meeting the research needs of students and staff. The need for change, creativity and new ideas has pushed libraries and librarians to innovate. Old norms and traditions are being put away by providing opportunities for society to engage in the sharing of great and new ideas to allow more work that is productive. Other factors in the 21<sup>st</sup> century that have pushed librarians to innovate include the sharing of ideas that would promote a culture of learning and collaboration, making them more sociable and working effectively together. Shahzad, Khan, Latif, and Iqbal (2023) listed old curricula, leadership problems, economic issues and lack of personal interest as constraints to the development of modern skills in librarians for implementing value-added services in the networked world.

Innovativeness in librarians could give librarians a sense of empowerment because when all ideas are welcomed and shared, employees can feel valuable, which provides every librarian with a sense of worthiness and leads to recognition. Innovativeness in librarians could boost the library's image and the university as a whole with an innovative culture in place. This will create a modern way of approaching information service delivery and achieving the overall mission and objective of the university library and its parent institution. The university library is an integral part of every University system, which often evolves with their parent institution by providing books, journals, and space for its services and operations to serve students and researchers. University libraries also help the teaching and research needs of users by supporting students and researchers' curriculum and research (Sivankalai, 2021). For university libraries to be significant, relevant, and achieve their goals and objectives, there is a need for innovativeness in their service delivery, requiring skilled and innovative employees. University libraries need to employ librarians who can try new things, new methods, and new processes to make them relevant in delivering their services. eLearning libraries play a crucial role in supporting teaching, learning, and research activities in higher education institutions. (Alenezi, 2023). To fulfil this role effectively, librarians must be innovative and adaptive to changing technological advancements.

### **Statement of the Problem**

There is a lack of understanding regarding the specific constraints that impede the innovativeness of librarians at NOUN. Open, distances, and e-learning librarians in Nigeria, specifically at the National Open University of Nigeria (NOUN), face various constraints that hinder their innovativeness. The shift towards online education and the increasing demand for digital resources necessitates the ability of librarians to adapt and provide effective library services in the context of open, distance, and e-learning. Therefore, this study aims to address the key constraints that hinder the innovativeness of open, distance, and e-learning librarians at the National Open University of Nigeria. By identifying and analysing these constraints, this study seeks to provide a comprehensive understanding of the challenges faced by librarians in the context of open, distance, and e-learning at NOUN. The findings will contribute to the existing body of knowledge and provide insights for developing strategies and interventions to enhance the innovativeness of librarians, thereby improving the quality of library services in the open, distance, and e-learning environment at NOUN.

### **Purpose of the Study**

The main purpose of the study is to investigate the constraints faced by open distance and eLearning librarians in NOUN.

## Research Questions

1. To what extent do the open distance and eLearning librarians in NOUN have difficulty getting adequate funds to support training?
2. What are the constraints faced by open distance and eLearning librarians in NOUN in creating interactive digital resources?
3. To what extent do the open distance and eLearning librarians in NOUN collaborate with other departments and institutions as a constraint?
4. What are the constraints faced by open distance and eLearning librarians in NOUN in fostering a culture of exploration and critical thinking?

## Literature review

Innovation is an output and is distinguished from innovativeness, which is a constant, latent process that creates a new product, service, or method that will be later commercialized to have an economic or social impact (Juliana, Hui, Clement, Solomon & Elvis, 2021). Innovativeness enables organisations to meet the changing needs of their customers and adapt to changing market conditions. This is generally recognized as a key part of productivity and involves people, processes, and products (Adam, Abeer & Wael, 2017). Innovativeness is a "socially complex and imperfectly imitable resource that drives competitive advantage and improved performance". Innovativeness is essential to business success, whether a large organisation or a small and medium enterprise (SME).

In large firms, the ability to develop new innovative products and services as well as educate and train their employees on innovativeness is of great importance for strategic competence (Mkalama et al., 2018). Likewise, innovation is a vital element in the competitiveness of small and medium-sized enterprises (SME) in the existing market, especially for start-up businesses (Pustovrh et al., 2020). No matter what the business environment is, both large companies and small businesses are committing to creating new quality products or processes (Herzog, 2011) and it's vital to keep a close eye on innovation in organisational processes. Hence, continuous serial innovation is important for a company's success in making changes over time. Strategic innovations (transformational changes) are necessary to achieve a competitive advantage, which is a sustained competitive advantage for the organization (Ganzer et al., 2021).

Roger (2003) defined innovativeness as "the degree to which an individual or unit of adoption is relatively earlier in adopting new ideas than other members of a system" (p.21). He defined innovativeness as "whether an individual or other unit of adoption adopts new ideas relatively earlier than others in the same field" any other member of the system". The first organisations to adopt a new product or process are considered the most innovative. Innovativeness depends on the number of innovations a firm adopts, but how innovative is depends on the number of innovations that it adopts (Jun, Thaemin & Cheol, 2020). This could mean that innovativeness is an enduring organisational quality and truly innovative organizations are those that exhibit innovative behaviour consistently over time. Furthermore, innovative firms have a consistently high level of innovation not just for a short period but also for the number of innovations they display over time, the time it takes to adopt innovations, and the consistency of time it takes to adopt innovations.

Nigeria's National Open University stands as a beacon of innovative education in Africa. Its mission to provide accessible and quality education aligns seamlessly with the digital age, where information flows freely across borders and learning knows no geographical boundaries.

Librarians within eLearning institutions like NOUN have the unique opportunity to guide students and faculty through this digital landscape, offering a wealth of information resources and innovative services. Innovation is the lifeblood of any thriving institution, and libraries are no exception. Librarians are no longer confined to the traditional role of gatekeepers to physical collections; they are curators of vast digital repositories, architects of online learning environments, and enablers of knowledge discovery. Innovative librarians can enhance the educational experience by integrating emerging technologies, creating interactive digital resources, and fostering a culture of exploration and critical thinking. In the rapidly evolving landscape of open, distance, and e-learning (ODEL) in Nigeria, librarians play a pivotal role in facilitating access to information resources and fostering innovative teaching and learning practices. However, their capacity for innovativeness within this dynamic educational context is beset by a multitude of constraints, presenting a significant challenge to the advancement of ODEL initiatives in the country.

Constraints responsible for low innovativeness include limited funding. Open, distance, and eLearning libraries at NOUN often face financial constraints, which limit their ability to invest in innovative technologies and resources. The lack of funding hampers librarians' efforts to introduce new services, upgrade existing infrastructure, and provide access to cutting-edge research materials. Themer (2022); Enakrire, Takaingehamo, Chiparausha, and Endouware (2022) noted that constrained resources and a focus on assessment areas like cost, quality, public impact and support of library strategic plan are constraints of innovativeness among librarians. Hibner and Kelly (2013) agreed that when libraries work within constraints of available resources such as space and funding, their innovation can be limited. Mushi, Mwantimwa and Wema (2022) also noted that in the absence of adequate funds, to support diverse external and in-house training, the development of a harmonised curriculum and the use of social media for effective embedded librarianship would be impossible.

One of the significant constraints is the challenge of sustaining quality and inclusiveness in formal education delivered at a distance (Stracke et al., 2022). This constraint underscores the difficulty of maintaining educational quality and ensuring equitable access to educational resources and opportunities in the context of open and distance eLearning. Librarians are tasked with addressing these challenges by providing access to high-quality educational materials and resources while promoting inclusivity and equitable access for all learners.

Limited access to information resources could constrain librarians. Librarians may struggle to access up-to-date and relevant information resources, hampering their ability to innovate. Way (2022) expressed that resources limitations in academic libraries force leaders to make difficult choices and implement a nuanced approach limiting innovativeness. Digital Divide seems to pose another challenge to low level of innovativeness. An uneven distribution of technology and digital access across Nigeria poses equity challenges in delivering innovative services.

Outdated technological infrastructure is another significant constraint faced by open, distance, and eLearning librarians at NOUN. Limited availability of skilled IT personnel and human resources can constrain the implementation and maintenance of innovative technologies. The university may lack modern IT infrastructure, including high-speed internet connectivity and advanced library management systems. The absence of these essential tools hinders librarians' ability to adopt innovative practices. Hasanah, Indah, & Syam (2022) noted that implementing automation systems can make it easier for librarians to complete tasks, but they face problems like unstable internet networks and inadequate computers leading to manual systems. Librarians require continuous training and professional development opportunities to stay updated with

emerging trends and technologies. Sanches, Antunes, and Lopes (2022) expressed that librarians need continuous training and professional development opportunities to stay updated with emerging trends and technologies, thereby supporting innovation and best practice achievement. Arua (2022) supported that librarians need continuous training and professional development opportunities to adapt to emerging trends and technologies, such as e-learning and global networking. However, limited access to training programs and workshops restricts librarians' ability to enhance their skills and knowledge. This constraint prevents them from implementing innovative practices effectively. A scarcity of training opportunities and the fast-paced nature of technological advancements leave librarians with skill gaps that hinder their innovative potential. Inadequate Collaboration: Collaboration with other departments and institutions is essential for innovation, but it is often hindered by institutional Constraints.

Resistance to change is a common challenge faced by open, distance, and eLearning librarians at NOUN. Some librarians may be resistant to adopting new technologies or changing traditional workflows due to various reasons, including fear of job redundancy or lack of awareness about the benefits of innovation (Hamad, Al-Fadel & Fakhouri). This resistance hampers the overall innovativeness of libraries. The prevailing institutional culture within NOUN can also act as a constraint on innovativeness among open, distance, and eLearning librarians. Hierarchical structures, bureaucratic processes, and resistance from university administration can impede librarians' efforts to introduce innovative practices. A supportive institutional culture that encourages experimentation and risk-taking is essential for fostering innovativeness among open, distance, and eLearning librarians.

It is crucial to consider the challenges faced by supervisors in distance learning, as highlighted by (Zaheer & Munir, 2020). Student-supervisor interaction, diversity, perceptions, virtual communities, and academic collaboration are identified as significant challenges for supervisors in distance learning. Addressing these challenges can contribute to the development of effective support systems for both learners and educators in the open and distance eLearning environment.

Furthermore, the literature emphasizes the pedagogical challenges associated with open and distance eLearning, including the probability of loneliness, segregation, and high rates of attrition among learners (Sevnanarayan, 2022). These challenges pose significant constraints for librarians in their efforts to support and engage distance learners effectively. Librarians must develop strategies to foster a sense of community, combat isolation, and enhance learner engagement through the provision of tailored library services and resources.

In addition, constraints related to student perceptions toward distance learning, virtual communities, student diversity, time constraints, irregular contact, technological issues, legal issues, and official restrictions are identified as significant challenges in distance learning contexts (Silva & Devendra, 2021). These constraints directly impact the role of librarians in facilitating access to resources, addressing technological barriers, and navigating legal and official restrictions to ensure seamless access to educational materials for open and distance learners. Moreover, the challenges associated with student-supervisor interaction, diversity, perceptions, virtual communities, and academic collaboration in distance learning further compound the constraints faced by open distance and eLearning librarians (Zaheer & Munir, 2020). These constraints underscore the intricate dynamics involved in supporting the academic and research needs of distance learners, necessitating librarians to navigate complex interpersonal and collaborative challenges to facilitate effective learning and research support.

Furthermore, the constraints related to the lack of metrics and evidence to demonstrate the value of free content pose challenges for librarians in facilitating access and use of open access resources for users in open and distance learning contexts (Ukwoma & Onyebinama, 2021). Librarians must grapple with the need to demonstrate the value and impact of open access resources while addressing the constraints associated with the absence of robust metrics and evidence. Additionally, the challenges in the field of plagiarism in education, including eLearning, present ethical constraints for librarians in ensuring academic integrity and ethical conduct in the open and distance eLearning environment (Ogrutan & Aciu, 2020). Librarians are tasked with implementing measures to address plagiarism and uphold ethical standards while navigating the unique landscape of eLearning. The constraints faced by open distance and eLearning librarians encompass a spectrum of challenges, including sustaining educational quality, addressing pedagogical challenges, fostering community and engagement, navigating technological and legal constraints, demonstrating the value of open access resources, and upholding academic integrity. Librarians operating in this domain must navigate these constraints adeptly, leveraging innovative strategies and tailored approaches to support the diverse and evolving needs of open and distance learners.

### **Methodology**

The population for this study comprises all 72 professional and Para-professional librarians working at the National Open University of Nigeria (NOUN). These librarians are engaged in providing library services in an open, distance, and eLearning context, which makes them ideal participants for exploring the specific constraints they face. Total enumeration was used for this study, meaning that all librarians at NOUN were included in the survey. This approach ensures that the sample size encompasses the entire population of interest, providing comprehensive insights into the constraints faced by these librarians. The primary instrument for data collection was an online survey questionnaire. The questionnaire was specifically designed to capture quantitative data related to the constraints experienced by NOUN librarians concerning their innovativeness. The questions focused on various areas such as collaboration with other departments, creation of interactive digital resources, fostering a culture of exploration and critical thinking, and securing adequate funds for training. To ensure the validity and reliability of the survey instrument, the questionnaire was reviewed by experts in the field of library and information science to ensure that it adequately covered all relevant aspects of the constraints faced by librarians. This review process helped to confirm the content validity of the instrument. A pilot test was conducted with a small group of librarians who were not part of the main study. The responses were analysed to assess the consistency of the instrument. Based on the feedback and results of the pilot test, necessary adjustments were made to improve the reliability of the questionnaire. The collected survey data was analysed using descriptive statistics and the software used was the SPSS version 25. This method was chosen because it provides a clear summary of the characteristics of the sample and an overview of the constraints faced by the librarians. Descriptive statistics such as mean, frequency, and percentages were used to summarize and present the data in an understandable manner.

Ethical considerations were rigorously observed throughout the research process. Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose and their role in it. The anonymity and confidentiality of participants were strictly maintained, with measures in place to protect their identities and personal information.

Additionally, participants were given the right to withdraw from the study at any time without any consequences, ensuring their voluntary participation.

## Results

**Table 1: Demographic information of respondents.**

Demographic		F	%
Gender	Male	26	37.7%
	Female	43	62.3%
	<b>Total</b>	<b>69</b>	<b>100.0%</b>
Educational background	ND	1	1.4%
	HND	4	5.8%
	BSc/BLS	11	15.9%
	MSc/MLS	33	47.8%
	PhD	20	29.0%
	<b>Total</b>	<b>69</b>	<b>100.0%</b>
Cadre	Library Assistant	1	1.4%
	Library Officer	4	5.8%
	Assistant Librarian	10	14.5%
	Librarian II	7	10.1%
	Librarian I	30	43.5%
	Senior Librarian	7	10.1%
	Principal Librarian	10	14.5%
	<b>Total</b>	<b>69</b>	<b>100.0%</b>
	Work experience	below 5 years	28
6-10 years		16	23.2%
11-15 years		15	21.7%
16-20 years		5	7.2%
21-25 years		3	4.3%
26 years and above		2	2.9%
<b>Total</b>		<b>69</b>	<b>100.0%</b>

**Source:** *Field Survey (2023).*

The demographic distribution of the respondents is shown in the table above, which reveals the distribution of genders, educational backgrounds, cadre in the profession, and levels of work experience. Majority of the respondents are female with 43(62.3%), 33 (47.8%) have an MSc/MLS (Master of Science/Master of Library Science) degree, 30 (43.5%) are Librarian I, while 28 (40.6%) have less than 5 years of work experience.

**Table 2: Constraints to innovativeness among librarians in national Open University of Nigeria**

Constraints to innovativeness	Yes (%)	No (%)	Mean	Remark
Digital divide- an uneven distribution of technology and digital access	64 (92.8)	17 (24.6)	1.92	Barrier
Resource scarcity	58 (84.1)	11 (15.9)	1.84	Barrier
Limited funding	56 (81.2)	13 (18.8)	1.81	Barrier
Inadequate collaboration with other departments and institutions	54 (78.3)	15 (21.7)	1.78	Barrier
Limited access to information resources	54 (78.3)	15 (21.7)	1.78	Barrier
Institutional culture	53 (76.8)	16 (23.2)	1.76	Barrier
Lack of training and professional development opportunities	52 (75.5)	17 (24.6)	1.75	Barrier
Out-dated technological infrastructure	51 (73.9)	18 (26.1)	1.73	Barrier
Persistence to change	48 (69.6)	21 (30.4)	1.69	Barrier
Limited student engagement and support	35 (50.7)	34 (49.3)	1.50	Barrier
<b>Average mean</b>			<b>1.75</b>	

Source: *Field Survey (2023)*

**Decision Rule:** If  $\bar{x}$  is greater than 1.49 = a barrier; If  $\bar{x}$  is less than 1.50 = Not a barrier. The results presented in the table 2 will address the following research questions:

**Research question 1: To what extent do the open distance and eLearning librarians in NOUN collaborate with other departments and institutions as a constraint?**

Based on the provided data in Table 2, the data indicates that inadequate collaboration with other departments and institutions is a significant constraint for open distance and eLearning librarians at NOUN. Specifically, 54 respondents (78.3%) perceive inadequate collaboration as a barrier, while 15 respondents (21.7%) do not see it as a barrier. The mean score of 1.78 further categorizes this factor as a barrier. Therefore, the majority of librarians at NOUN view inadequate collaboration with other departments and institutions as a substantial constraint impacting their work in an open, distance, and eLearning environment. The high percentage of respondents acknowledging this issue and the mean score close to 2 (indicating a barrier) highlight the significant extent of this challenge.

**Research question 2: What are the constraints faced by open distance and eLearning librarians in NOUN in creating interactive digital resources?**

According to the data in Table 2, 58 respondents (84.1%) perceive resource scarcity as a significant barrier to creating interactive digital resources, while 11 respondents (15.9%) do not see it as a barrier. The mean score of 1.84 categorizes this factor as a barrier. Similarly, 54 respondents (78.3%) identify limited access to information resources as a constraint, while 15

respondents (21.7%) do not. The mean score of 1.78 indicates that this factor is also perceived as a barrier. For out-dated technological infrastructure, 51 respondents (73.9%) view this as a barrier, while 18 respondents (26.1%) do not. The mean score of 1.73 confirms that this is considered a constraint. Therefore, the constraints faced by open distance and eLearning librarians at NOUN in creating interactive digital resources include resource scarcity, limited access to information resources, and out-dated technological infrastructure. These factors are perceived as significant barriers, as indicated by the high percentages of respondents identifying them as constraints and the mean scores categorizing them as such.

### **Research question 3: What are the constraints faced by open distance and eLearning librarians in NOUN in fostering a culture of exploration and critical thinking?**

Based on the provided data, 53 respondents (76.8%) perceive institutional culture as a barrier to fostering a culture of exploration and critical thinking, while 16 respondents (23.2%) do not. The mean score of 1.76 categorizes this factor as a barrier. For lack of training and professional development opportunities, 52 respondents (75.5%) identify this as a constraint, while 17 respondents (24.6%) do not. The mean score of 1.75 indicates that this factor is considered a barrier. The data shows that 64 respondents (92.8%) view the digital divide as a significant barrier to fostering a culture of exploration and critical thinking, while 5 respondents (7.2%) do not. The mean score of 1.92 confirms that this factor is perceived as a substantial constraint. Therefore, the constraints faced by open distance and eLearning librarians at NOUN in fostering a culture of exploration and critical thinking include institutional culture, lack of training and professional development opportunities, and the digital divide. These factors are perceived as barriers, as indicated by the high percentages of respondents identifying them as constraints and the mean scores categorizing them as such.

### **Research question 4: To what extent do the open distance and eLearning librarians in NOUN have difficulty getting adequate funds to support training?**

Based on the data provided in Table 2, 58 respondents (84.1%) perceive resource scarcity as a barrier to obtaining adequate funds for training, while 11 respondents (15.9%) do not. The mean score of 1.84 categorizes this factor as a barrier. For limited funding, 56 respondents (81.2%) identify this as a constraint in obtaining adequate funds for training, while 13 respondents (18.8%) do not. The mean score of 1.81 indicates that this factor is considered a barrier. Therefore, it is evident that the open distance and eLearning librarians at NOUN face significant challenges in securing adequate funds to support training. Both resource scarcity and limited funding are perceived as barriers, with a majority of respondents indicating these factors hinder their ability to obtain sufficient financial support for training initiatives.

Based on the overall data in table 2, it is evident that librarians at NOUN face constraints impacting their innovativeness, with an average mean score ( $\bar{x}$ ) of 1.75. The highest constraints identified include the digital divide ( $\bar{x} = 1.92$ ) and resource scarcity ( $\bar{x} = 1.84$ ). These challenges likely stem from NOUN's diverse student body, encompassing varying socio-economic backgrounds and geographical locations. The digital divide, exacerbated by uneven access to technology among students, particularly affects those in remote areas. NOUN's decentralized learning model exacerbates these disparities, where urban students typically benefit from better technological infrastructure compared to rural counterparts. Conversely, limited student engagement and support pose the least constraints ( $\bar{x} = 1.81$ ), reflecting the inherent challenges of open and distance learning. Reduced face-to-face interactions may contribute to lower

engagement levels with library services. Overall, addressing the digital divide and enhancing resource availability are critical for supporting innovation among NOUN librarians, thereby improving educational outcomes for all students across diverse contexts.

### Discussion of Findings

The finding that inadequate collaboration with other departments and institutions is perceived as a significant constraint by open distance and eLearning librarians at NOUN underscores several critical implications. According to the data presented in Table 2, a substantial majority of respondents, 78.3%, identified inadequate collaboration as a barrier to their work. This consensus among librarians suggests a prevalent issue within NOUN's library organizational structure and operational framework. Collaboration across departments and institutions is crucial in educational settings, particularly in contexts like open and distance learning where physical proximity and face-to-face interactions are limited (Van Der Wouden & Youn, 2023). Effective collaboration enhances access to resources, promotes interdisciplinary initiatives, and enriches the learning experience for students. However, the perceived inadequacy in collaboration can hinder these benefits, potentially limiting the breadth and depth of services and resources available to both librarians and students. The mean score of 1.78 further substantiates the significance of this constraint, placing it clearly within the category of a barrier. This numeric representation aligns with the quantitative responses, indicating a robust consensus among librarians regarding the challenges they face in fostering collaborative efforts across the institution.

The findings from Table 2 highlight several significant constraints faced by open distance and eLearning librarians at NOUN in their efforts to create interactive digital resources. Firstly, resource scarcity emerges as a substantial barrier, with 84.1% of respondents identifying it as a constraint. This high percentage underscores the widespread perception among librarians that inadequate resources hamper their ability to develop and deploy interactive digital materials effectively. The mean score of 1.84 further solidifies resource scarcity as a critical barrier, reflecting a strong consensus among respondents. Similarly, limited access to information resources is recognized by 78.3% of respondents as a significant constraint. This indicates a widespread acknowledgment that insufficient access to diverse and up-to-date information sources impedes the creation of engaging and informative digital resources. This is in agreement with Way (2022). The mean score of 1.78 reaffirms this perception, underscoring the importance of addressing access challenges to enhance the quality and breadth of digital resources available to learners.

Additionally, the outdated technological infrastructure poses a considerable hurdle, with 73.9% of respondents viewing it as a barrier. This finding suggests that obsolete technology limits the librarians' capacity to implement modern digital tools and platforms effectively which aligns with the findings of Hasanah et. al. (2022). The mean score of 1.73 further substantiates this constraint, emphasizing the need for investments in upgrading technological infrastructure to support innovative teaching and learning practices in an open and distance education context. Overall, these findings indicate that resource scarcity, limited access to information resources, and outdated technological infrastructure are critical barriers hindering the creation of interactive digital resources at NOUN. Addressing these constraints requires strategic investments in resources, infrastructure upgrades, and policies that prioritize access to diverse information sources. By overcoming these challenges, NOUN can enhance its capacity to deliver high-quality digital learning experiences tailored to the needs of its diverse student population.

Based on the data provided, several constraints faced by open distance and eLearning librarians at NOUN in fostering a culture of exploration and critical thinking are evident. Institutional culture emerges as a significant barrier, with 76.8% of respondents identifying it as such. This finding aligns with existing literature which emphasizes the influence of institutional culture on innovation and critical thinking in educational settings. According to research by Diseiye et. al, (2024), institutional culture can either facilitate or impede organizational change and innovation. In the context of libraries and educational institutions, a conservative or risk-averse culture may stifle initiatives aimed at fostering exploration and critical thinking among librarians and learners alike. Moreover, the lack of training and professional development opportunities is perceived as a constraint by 75.5% of respondents. This resonates with findings from studies on professional development in libraries, where inadequate training is cited as a barrier to adopting new technologies and innovative practices (Masenya, 2024). Effective professional development programs not only enhance librarians' skills but also empower them to explore new ideas and methods, contributing to a culture of continuous learning and critical inquiry (Sanches et. al, 2022; Arua, 2022)

Furthermore, the digital divide is overwhelmingly viewed as a substantial barrier by 92.8% of respondents. This is supported by literature highlighting disparities in access to technology and digital resources, which can hinder efforts to promote exploration and critical thinking among diverse student populations (Way, 2022). Addressing the digital divide requires proactive measures to ensure equitable access to technology and digital literacy skills across all learners, thereby fostering a more inclusive learning environment. The findings underscore the multifaceted nature of constraints faced by open distance and eLearning librarians at NOUN in nurturing a culture of exploration and critical thinking. Addressing these barriers necessitates strategic interventions such as promoting a supportive institutional culture, enhancing professional development opportunities, and bridging the digital divide.

The results of a survey conducted among librarians at the NOUN provide a clear picture of the obstacles to innovativeness in the library system at the university. The largest obstacle noted is a limited funding, which is acknowledged by an overwhelming 81.2% of respondents. A mean score of 1.81 supports this financial restriction, highlighting the serious obstacle it presents to the librarians' capacity for innovation this is in agreement with Themer (2022); Enakrire, Takaingenhamo, Chiparausha, and Endouware (2022); Hibner and Kelly (2013) Mushi, Mwantimwa and Wema (2022).

The intricate network of difficulties faced by library professionals is further highlighted by problems like limited access to information resources, digital divide- an uneven distribution of technology and digital access, and an outdated technological infrastructure. The average mean of 1.75 highlights a shared belief that these challenges impede innovativeness. Hasanah et. al. (2022) agreed that these challenges include resources scarcity, lack of training and professional development opportunities, inadequate collaboration with other departments and institutions, a resistance to change, institutional culture, and limited student engagement and support. Interestingly, the mean for limited student engagement and support is on the threshold at 1.50, indicating that respondents may view this as a potential barrier.

### **Implications for Open, distance and eLearning Library Users**

The implications of the study highlight several key strategies to address the identified constraints faced by open, distance, and eLearning librarians at NOUN. One significant strategy is the development and implementation of comprehensive orientation programs for new students.

These programs should aim to familiarize students with library services, resources, and support systems. Utilizing online modules, webinars, or interactive guides can effectively deliver this orientation, ensuring that students are equipped to navigate and utilize library resources independently. Özkanal et al. (2021) highlights effective communication channels as essential channels for enhancing support and engagement in the digital learning environment. Librarians can establish proactive communication channels such as discussion forums, chat services, and virtual reference desks. These platforms enable librarians to address student queries promptly, provide guidance on research methodologies, and foster a sense of community among learners (Durodolu et al., 2022; Lembani et al., 2022; Stracke et al., 2022).

Digital literacy training emerges as another critical strategy. By offering digital literacy training, librarians can empower students to navigate online resources effectively, access databases, and utilize digital tools for academic research (Özkanal et al., 2021). This initiative not only enhances students' information literacy skills but also maximizes their utilization of available library services (Harlow, 2020). Personalized support services represent a tailored approach to addressing individual research and information needs (Dhawan, 2020). Librarians can offer one-on-one virtual consultations to provide personalized guidance and support. These consultations can be conducted through virtual meetings or email correspondence, ensuring that students receive customized assistance that aligns with their specific academic requirements. Open, distance, and eLearning librarians at NOUN can mitigate the identified constraints and enhance the overall learning experience for students by implementing these strategies. These initiatives support the institution's commitment to promoting accessibility, inclusivity, and academic success in the digital learning environment.

## Conclusion

This study comprehensively explored the constraints faced by open, distance, and e-learning (ODL) librarians at the National Open University of Nigeria (NOUN). It focused on key areas such as collaboration with other departments and institutions, creation of interactive digital resources, fostering a culture of exploration and critical thinking, and securing adequate funds for training. The findings from this study offer valuable insights into the unique challenges these librarians encounter. The study found that limited collaboration with other departments and institutions is a significant constraint. This lack of collaboration hampers the sharing of resources, knowledge, and best practices, which are essential for fostering innovation and enhancing the quality of library services. Strengthening interdepartmental and institutional collaboration could lead to more efficient and effective library services.

The creation of interactive digital resources is hindered by several constraints, including outdated technological infrastructure, limited access to modern software and tools, and insufficient training in digital content creation. These limitations prevent librarians from developing engaging and interactive resources that are essential for enhancing the learning experience of students. Fostering a culture of exploration and critical thinking is challenged by a lack of institutional support, resistance to change, and insufficient professional development opportunities. These factors create an environment where librarians struggle to promote innovative thinking and exploratory learning among students. Addressing these issues through targeted initiatives and support mechanisms could significantly improve the educational outcomes. The study highlighted that securing adequate funds for training is a major constraint. Limited funding restricts librarians' access to professional development opportunities, which are crucial for staying updated with the latest trends and technologies in library science and e-

learning. Increasing funding for training programs is essential for equipping librarians with the necessary skills and knowledge to perform effectively in an ODL environment. This study underscores the need for addressing these constraints to enhance the innovativeness and effectiveness of ODL librarians at NOUN. By implementing these strategies, NOUN can significantly improve the quality of its library services, thereby better supporting its students and academic community.

### Recommendations

Based on the findings, the following recommendations were made. The NOUN library should:

1. Establish formal communication channels and regular collaborative meetings between librarians and other academic departments. This will facilitate better coordination and resource sharing.
2. Initiate joint projects with other departments and external institutions to leverage shared expertise and resources. This could include joint research initiatives, shared digital content creation, and cross-departmental training sessions.
3. Form partnerships with other universities and libraries, both locally and internationally, to share best practices, resources, and innovative solutions.
4. Invest in state-of-the-art technology and software that supports the creation of interactive digital resources. Ensure that librarians have access to the necessary tools and platforms.
5. Offer regular training and professional development opportunities focused on digital content creation and the use of new technologies. This could include workshops, online courses, and certifications.
6. Develop institutional policies that encourage and reward innovative practices. Recognize and incentivize librarians who contribute to fostering a culture of exploration and critical thinking.
7. Provide training programs that focus on pedagogical strategies to promote critical thinking and exploratory learning among students. Librarians should be equipped to design and implement activities that encourage these skills.
8. Advocate for increased funding from the institution to support the professional development and training needs of librarians. Highlight the importance of continuous learning for maintaining high service standards.
9. Encourage librarians to apply for external grants and funding opportunities. Provide training in grant writing and fundraising to enhance their ability to secure additional resources.
10. Develop comprehensive professional development programs that are tailored to the specific needs of ODL librarians. This includes opportunities for attending conferences, workshops, and other relevant training events.

### References

- Adam, S., Mahrous, A. A., & Kortam, W. (2017). The relationship between entrepreneurial orientation, marketing innovation and competitive marketing advantage of female entrepreneurs in Egypt. *International Journal of Technology Management & Sustainable Development*, 16(2), 157-174.
- Alenezi, M. (2023). Digital learning and digital institution in higher education. *Education Sciences*, 13(1), 88.

- Ankamah, S., Gyesei, K., & Amponsah, V. (2022). Use of electronic resources in research and learning in a health sciences library in Ghana: an analysis of awareness and perception of users. *Information Development*, 40(2), 202-219. <https://doi.org/10.1177/02666669221107378>
- Arua, G. (2022). Godwin. Dream-Child. <https://doi.org/10.4324/9781315037783-10>.
- Dhawan, S. (2020). Online learning: a panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5-22. <https://doi.org/10.1177/0047239520934018>
- Diseiye, O., Ukubeyinje, S. E., Oladokun, B. D., & Kakwagh, V. V. (2024). Emerging Technologies: Leveraging Digital Literacy for Self-Sufficiency Among Library Professionals. *Metaverse Basic and Applied Research*, 3, 59-59.
- Dube, T. V., & Jacobs, L. (2023). Academic library services extension during the COVID-19 pandemic: considerations in higher education institutions in the Gauteng Province, South Africa. *Library Management*, 44(1/2), 17-39.
- Durodolu, O., Enakrire, R., & Chisita, C. (2022). Coronavirus pandemic open distance e-learning (odel) as an alternative strategy for higher educational institutions. *International Journal of E-Collaboration*, 19(1), 1-10. <https://doi.org/10.4018/ijec.315785>
- Enakrire, R., Takaingenhomo, C., Chiparausha, B., & Endouware, C. (2022). Capacity-building and Mentorship Programmes among Librarians: Views from Selected Academic Libraries in Nigeria and Zimbabwe. Mousaion: South African Journal of Information Studies. <https://doi.org/10.25159/2663-659x/9679>.
- Hamad, F., Al-Fadel, M., & Fakhouri, H. (2022). The provision of smart service at academic libraries and associated challenges. *Journal of Librarianship and Information Science*. <https://doi.org/10.1177/09610006221114173>.
- Hamad, F., Al-Fadel, M., & Fakhouri, H. (2022). The provision of smart service at academic libraries and associated challenges. *Journal of Librarianship and Information Science*, 55(4), 960-971. <https://doi.org/10.1177/09610006221114173>
- Harlow, S. (2020). Assessing library online patrons use of resources to improve outreach and marketing. *The Serials Librarian*, 79(1-2), 200-227. <https://doi.org/10.1080/0361526x.2019.1703873>
- Hasanah, N., Indah, R., & Syam, R. (2022). Peningkatan Kompetensi Pustakawan Melalui Penerapan Otomasi Perpustakaan di Perpustakaan SMKN 3 Bandung. *Ilmu Informasi Perpustakaan dan Kearsipan*. <https://doi.org/10.24036/116154-0934>.
- Hibner, H., & Kelly, M. (2013). 8 – Collection budgets. <https://doi.org/10.1016/B978-1-84334-760-6.50008-4>.
- Igbokwe, P. (2023). Capacity-building practices for librarians' effective service delivery in federal university libraries in Nigeria. *Library Management*, 44(8/9), 469-483. <https://doi.org/10.1108/lm-04-2022-0026>
- Juliana, N. O., Hui, H. J., Clement, M., Solomon, E. N., & Elvis, O. K. (2021). The impact of activity and innovation on entrepreneurship development: evidence from Nigeria. *Open Journal of Business and Management*, 9(4), 1743-1770.
- Lembani, R., Mulenga, K., Mwewa, P., Mhango, L., & Chaamwe, N. (2022). Are we leaving students behind? self-directed learning in an ICT challenged country. *Education and Information Technologies*, 28(3), 3475-3492. <https://doi.org/10.1007/s10639-022-11318-8>

- Masenya, T. (2023). The creation and adoption of technology-centred makerpaces in south african academic libraries. *International Journal of Library and Information Services*, 12(1), 1-17. <https://doi.org/10.4018/ijlis.320224>
- Mkalama, B. W., Ndemo, B. E., & Maalu, J. K. (2018). The antecedents of innovativeness in small and medium manufacturing enterprises in Kenya: A critical review of literature.
- Mushi, C., Mwantimwa, K., & Wema, E. (2022). Librarians' competencies for implementing embedded librarianship in university libraries. *Journal of Librarianship and Information Science*. <https://doi.org/10.1177/09610006221104809>.
- Obuezie, A. C., & Alex-Nmecha, J. C. (2023). Application of Agile Method in Building Innovative Library Services in University Libraries in Nigeria.
- Ofor-Douglas, S. (2023). Managing innovative university education for the attainment of sustainable development goals in nigeria. *East African Journal of Arts and Social Sciences*, 6(1), 156-166. <https://doi.org/10.37284/eajass.6.1.1173>
- Ogrutan, P., & Aciu, L. (2020). Aspects of academic performance and ethics in the transition to elearning caused by the actual pandemic - a case study. *Tem Journal*, 656-661. <https://doi.org/10.18421/tem92-31>
- Özkanal, B., Gülen, S., & Güneş, E. (2021). Online information searching strategies of open and distance learners: anadolu university sample. *Turkish Online Journal of Distance Education*, 163-176. <https://doi.org/10.17718/tojde.961831>
- Pustovrh, A., Rangus, K., & Drnovšek, M. (2020). The role of open innovation in developing an entrepreneurial support ecosystem. *Technological forecasting and social change*, 152, 119892.
- Ramamoorthy, S., Ramamoorthy, P., & Samayan, K. (2024). Exploring challenges and satisfaction from e- learning in higher secondary grade school students in rural tamil nadu. *International Journal for Multidisciplinary Research*, 6(2). <https://doi.org/10.36948/ijfmr.2024.v06i02.19256>
- Sanches, T., Antunes, M., & Lopes, C. (2022). International standards for information literacy. *LIBER Quarterly: The Journal of the Association of European Research Libraries*. <https://doi.org/10.53377/lq.11131>.
- Sevnarayan, K. (2022). Reimaging elearning technologies to support students: on reducing transactional distance at an open and distance elearning institution. *E-Learning and Digital Media*, 19(4), 421-439. <https://doi.org/10.1177/20427530221096535>
- Shahzad, K. and Khan, S. (2023). Effects of e-learning technologies on university librarians and libraries: a systematic literature review. *The Electronic Library*, 41(4), 528-554. <https://doi.org/10.1108/el-04-2023-0076>
- Shahzad, K., Khan, S., Javed, Y., & Iqbal, A. (2023). E-Learning for Continuing Professional Development of University Librarians: A Systematic Review. *Sustainability*. <https://doi.org/10.3390/su15010849>.
- Shahzad, K., Khan, S., Latif, M., & Iqbal, A. (2023). Relationship between Personal Traits and Sustainable Competence Development among Librarians in Relation to Value-Added Library Services in a Networked World: A Systematic Literature Review from 2002 to 2022 Sustainability. <https://doi.org/10.3390/su15032359>.
- Silva, R., & Devendra, D. (2021). Undergraduate researcher stories: insights for mentoring in an open and distance learning context. *Journal of Education*, 203(3), 587-595. <https://doi.org/10.1177/00220574211032579>

- Sivankalai, S. (2021). Academic libraries support e-learning and lifelong learning: A case study. *Library Philosophy and Practice (e-journal)*, 8(18), 1-18.
- Stecula, K., & Wolniak, R. (2022). Influence of covid-19 pandemic on dissemination of innovative e-learning tools in higher education in poland. *Journal of Open Innovation Technology Market and Complexity*, 8(2), 89. <https://doi.org/10.3390/joitmc8020089>
- Stracke, C., Sharma, R., Bozkurt, A., Burgos, D., Cassafieres, C., Santos, A., & Cox, G. (2022). Impact of covid-19 on formal education: an international review of practices and potentials of open education at a distance. *The International Review of Research in Open and Distributed Learning*, 23(4), 1-18. <https://doi.org/10.19173/irrodl.v23i4.6120>
- Theimer, S. (2022). Reframing Project Assessments: Including People as a Priority. *Technical Services Quarterly*, 39, 93 - 111. <https://doi.org/10.1080/07317131.2022.2045429>.
- Ukwoma, S. and Onyebinama, C. (2021). Challenges and opportunities of facilitating access and use of open access resources to users by librarians in federal and state universities in nigeria. *Library Management*, 42(8/9), 481-497. <https://doi.org/10.1108/lm-03-2020-0039>
- Van der Wouden, F., & Youn, H. (2023). The impact of geographical distance on learning through collaboration. *Research Policy*, 52(2), 104698.
- Way, D. (2022). Abandoning Yesterday to Transform Tomorrow. *Journal of Library Administration*, 62, 1070 - 1076. <https://doi.org/10.1080/01930826.2022.2127589>.
- Zaheer, M. & Munir, S. (2020). Research supervision in distance learning: issues and challenges. *Asian Association of Open Universities Journal*, 15(1), 131-143. <https://doi.org/10.1108/aaouj-01-2020-0003>

## RELATIONSHIP BETWEEN OPENNESS TO EXPERIENCE PERSONALITY TRAIT AND ACHIEVEMENT IN MATHEMATICS AMONG SENIOR SECONDARY SCHOOL STUDENTS IN NORTH-WEST GEO-POLITICAL ZONE OF NIGERIA

<sup>1</sup>Oteniya Mojeed Gbenga, <sup>2</sup>Mustapha Sada & <sup>3</sup>Kursum Isah Abdullahi

<sup>1</sup>Department of Science and Vocational Education, Al-Qalam University Katsina  
belloabdulmajid526@gmail.com, 08038748969

<sup>2</sup>Department of Arts and Social Education, Al-Qalam University Katsina  
sadamustapha409@gmail.com, 08030818451

<sup>3</sup>Department of Educational Psychology and Counselling, Federal university Dutsinma,  
kursumisah@gmail.com, 08038066250

### Abstract

*This study investigated the relationship between openness to experience personality trait and achievement in mathematics among senior secondary school students in North-West, Nigeria. One objective was formulated to guide the conduct of the study. Using objective, corresponding research question and hypothesis were formulated and tested at 0.05 level of significance. The research design used was Correlational Study. The total population of the study was 487,769 senior secondary school students. A sample size of 384 was selected based on the Research Advisor Table of Population and Sample Size (2006). Researchers administered Openness to Experience Personality Trait Scale to the students and it was found that only 81 students were found to display openness to experience personality trait. Multi-stage sampling techniques comprising of cluster, stratified, simple random and systematic sampling techniques were used for the selection of the participants. The Openness to Experience Personality Trait Scale was used as data collection instrument. Face and convergent validity were used by the lecturers in Bayero University, Kano to validate the instrument. The convergent validity of the openness to experience personality trait was 0.776. Students' 1<sup>st</sup> and 2<sup>nd</sup> terms examination scores which were standardized using T-score were used as students' achievement in mathematics. Pilot study was done using a characteristically similar but out of the sample size of the main study and the scores obtained were analyzed using Cronbach alpha reliability to find out internal consistencies of the items. Reliability index of openness to experience personality trait was 0.819. The data collected were analysed using Pearson Product Moment Correlation. The result of the analysis showed that there was positive significant relationship between openness to experience personality trait ( $r=0.420$ ) and achievement in mathematics among senior secondary school students in North-West, Nigeria. Based on the findings of the study, it was recommended that counsellors should help guide parents and teachers on how to train children so that they can grow up with openness to experience personality trait because it is responsible for good achievement in mathematics.*

**Keywords:** Openness to Experience, Personality, Trait, Achievement.

### Introduction

The knowledge of mathematics at both primary and secondary levels cannot be neglected because is a compulsory subject which every student, irrespective of field of study must offer. Cattigan (2019) opined that, knowledge of mathematics will enable the students to conduct research and be able to analyze the data collected and it will also help in the interpretation of results without any difficulties. Government at all levels made it compulsory for all candidates to

offer mathematics at the same time pass it at credit level, as it is made one of the prerequisites for admission into any higher institution of learning. Lenoard (2018) affirmed that Northwest indigenes have some brighter minds, who even under stressful conditions of learning (e.g. unstable electricity, lack of potable water in some schools or on college campuses, absence of high-speed internet, e.t.c) manage to demonstrate skills that are in high demand in mathematics education. The roles openness to experience personality trait of students play towards achievement in mathematics cannot be over-emphasized. At the same time, openness to experience personality trait of an individual student cannot be ignored because this trait is one of the factors affecting students' achievement in mathematics (Daminabo, 2018). There are different traits of personality and these traits contribute to the achievement of every student in mathematics in one way or the other. Predictors of achievement in mathematics lay on students' openness to experience personality trait. Educators have always asked whether students' openness to experience personality trait can help them attain higher academic performance. The continuity of the effect of childhood personality traits on achievement, is worthy of much attention because students' academic achievement is believed to have cumulative effects in the cause of time (Daminabo, 2018).

Openness to experience reflects an individual broad-mindedness, depth of attitude and penetrates awareness; it is a need for generalizing and testing out experiences. Many personality theories, trait models such as big five personality traits theories, sixteen personality traits theories e.t.c. emphasizing individual differences in thoughts, feelings, and behaviours assume that personality consists of several dispositions. Since personality traits tend to form a stable pattern of reactions in any given situation, they can explain the mechanisms of an individual's information behaviour with little variability (Holly & Andrew, 2005). Academic achievement of students in mathematics is an important indicator of academic success at senior secondary school level. Senior secondary school students differ in how they process, encode, recall, organize and apply information they learn (Digman, 2021). Psychologists have put forward a lot of reasons why these disparities in achievement exist. Opinions vary as to why some students excel academically while others appear to be under achievers. Many psychologists have consistently attempted to identify the major predictors of individual academic performance. Factors such as attitude, gender, study habit, peer group influence, socio economic background amongst others, just to mention a few, have been extensively explored as being responsible for academic achievement. One major factor that is believed to be responsible for academic performance in students are their personality traits (Digman, 2021). According to the theories of Goldberg (1993) in Mojeed (2024), openness to experience personality trait students are curious about both inner and outer worlds and their lives are experimentally richer and they are willing to entertain novel ideas and unconventional values. They experience both positive and negative emotions more keenly than to closed individuals. Openness involves personality features such as scientific and artistic creativity, divergent thinking, imagination, originality, sophistication and a high sense of wonder. Among the Big- five personality traits, openness to experience personality students involves in the highest cognitive aspect and Individuals with a high level of openness to development are good in mathematics (Mojeed, 2024).

Adewale and Taiwo (2007) in Dahiru (2014) defined academic achievement as individuals' inherent potentials in terms of intelligence combined with other sociological factors. Also, Saka, Sam and Yusuf (2016) submitted that academic achievement is what is measured regarding skill or knowledge developed through specific instruction or training with emphasis on how well instructional objectives have been attained. This means that, individual's achievement

in mathematics reflects how good he is in the subject (Dahiru, 2014). Academic achievement which stands as students' examination scores is a dependent variable depending on openness to experience personality trait and gender. Academic achievement can be understood as a display of knowledge attained or skills developed in schools' subjects designed by test and examination scores or marks assigned by the subjects' teachers. A number of researches have been conducted in relation to openness to personality trait, Ibrahim (2016) conducted a research to find out relationship between personality traits and academic achievement in biology among senior secondary school students in Katsina State, it was found that there was that there were positive relationships among students' academic achievement in biology and agreeableness, conscientiousness, openness to experience but found a negative relationship between students' academic achievement in biology and neuroticism. This study is similar with the present study because it uses openness to experience personality trait as an independent variable but different with the present study because he used biology as his academic performance scores. In another study, conducted by Hakimi, Hejazi, and Lavasani (2011) on the Relationship between Personality Traits and Students' Academic Achievement. The Result showed that openness to experience personality trait predict academic achievement. This study is similar with the present study because it uses the openness to experience personality trait as an independent variable but different with the present study because correlation research design and MANOVA were used in the study.

### **Statement of the Problem**

The statistics of the results of West African Examinations Council (WAEC) 2021 and 2022; National Examination Council (NECO) 2021 and 2022 according to the Registrars of the two Examination Bodies, Olu (2022) and Abubakar (2022) showed that 59.70% of students across the federation passed mathematics at credit level while North-West States Directorate of Planning, Research and Statistics of the Ministries of Education revealed that 34.25% passed at credit level. Researchers are of the opinion that if this failure persists for another subsequent two years, the Northwest states educational system will be at the verge of collapse because nobody cares to take into consideration psychological constructs of the students which may be the main reasons behind this failure.

Researchers such as Asante (2012) and Frank (2018) who have worked on ways to improve students' achievement in mathematics in North-West states, have failed for not taking into considerations psychological constructs which may be factors militating against students' good achievement in mathematics for so many years. Governments have been investing a lot on the recruitments of qualified and competent mathematics teachers in senior secondary schools but all effort proved abortive, instead the achievement is in decline. In 2022, the governments through their various ministries of education employed a number of teachers; of which almost half of the teachers employed were mathematics teachers. This is to improve the students' achievement regarding mathematics but this yielded no positive result as the students' achievement keeps declining. The governments also created extra mural classes after school hours for senior secondary school students to be taught mathematics but yet the condition remains the same.

Parents who have been investing in their children's education felt unhappy whenever their children fail mathematics. Some of the parents have been spending on hiring mathematics teachers to teach their children mathematics so that they can improve but yet the result is alarming. On the purchase of textbooks, a lot have been spent by the governments and parents

whom everyone believes will improve students' achievement in mathematics but this has not yielded good results (Mata, Monteiro & Peixoto, 2012).

The fact that all the endeavours made by aforementioned stakeholders to improve students' achievement in mathematics did not include the study of students' openness to experience personality trait and gender difference, an avenue to suspect openness to experience personality trait and gender difference towards mathematics as culprits behind this mathematics failure among senior secondary school students. The investigation of influence of this psychological variable (openness to experience personality trait) on students' achievement in mathematics will unravel the reasons behind this failure and this will enable all the stakeholders in North-West States senior secondary school education to provide lasting solutions to this massive failure. It is in view of this that the researcher embarked on this research with the aim of bringing solutions to these problems.

### **Objectives of the Study**

To find out if there is relationship between openness to experience personality trait scores and achievement in mathematics scores among senior secondary school students in North-West Nigeria.

### **Research Objectives**

Is there a relationship between openness to experience personality trait scores and achievement in mathematics scores among senior secondary school students in North-West Nigeria?

### **Hypotheses 1**

There is no significant relationship between openness to experience personality trait scores and achievement in mathematics scores among senior secondary school students in North-West Nigeria.

### **Methodology**

The research design was Correlational Study. The researchers used this research design because they were interested in finding out whether relationship exists between openness to experience personality trait and achievement in mathematics. The population for this study is public senior secondary school two (SS II) 2022 students with a total number of four hundred and forty-eight thousand, seven hundred and sixty-nine (487,769) in North-West Nigeria. North-West is made up of seven States. Senior secondary school II students were used because they were the middle class with knowledge of mathematics and they were much available up to the end of the research. Some of the schools were male students only, some were female students only and a number of them were mixed (Mojeed, 2024). The researchers conducted his study in three States which were Katsina, Kaduna and Zamfara States. The sample size of the study was 384 out of the population of 487,769 which was in line with the table of Research Advisor Table of Population and Sample Size (2006). Openness to Experience Personality Trait Scale were administered to 384 students that consisted the sample size of the study, only 81 students possessed openness to experience personality trait. The researchers used multi-stage sampling techniques which comprises of cluster, stratified and simple random sampling techniques to select the samples of the study. This means the selections of the subjects from the population involved more than one sampling technique. These techniques are cluster, simple random, stratified and systematic sampling techniques. The instrument used was Openness to Experience

Personality Trait Scale (OEPTS) which is one of the Sub-Scales of the Big Five Personality Traits developed by Goldberg (1999). Face and convergent validity were used by the lecturers in Bayero University, Kano to validate the instrument. Convergent validity was used to find out whether the instrument measures the construct it's actually claims its measures on like concurrent validity that establishes the extent to which new instrument correlates with existing and already validated instrument. The two instruments (Openness to Experience Personality Trait by Goldberg, 1993 and Openness to Experience Personality Trait by John and Srivastava, 1999) were common because they have five items that measure Openness to Experience personality trait. The convergent validity of the two instruments was 0.819, meaning that the instrument is valid to be used for the research work. Also, researchers used Cronbach Alpha formula to establish the reliability of internal consistency of the Openness to Experience Personality Trait Scale by administering the instrument to 100 students of GSSS Bagwai, Kano. This is because the researchers were interested in finding out how compatible the items on the instruments are. The reliability index of Openness to Experience was  $\alpha = 0.819$  which showed that the instrument is reliable because the value is more than the minimum Cronbach Alpha value required (0.700). The 1<sup>st</sup> and 2<sup>nd</sup> terms average mathematics examination scores were used as students' academic achievement. These mean scores obtained were standardized for the sake of objectivity using T-Score formula. To convert any raw score into T-score, the scores were first converted into Z-score using the formula,  $Z = (\text{observed score} - \text{mean}) / \text{standard deviation}$ . Both mean and standard deviation were constant; the mean score of the distribution was 56 while the value of standard deviation was calculated to be 8.76. These values were substituted in the Z-Score formula to obtain the value of Z-score for each raw score. Finally, the Z-score values were substituted into the T-score formula to obtain standardized scores. This is because T-scores were expressed on 100-point scale or on a scale of 100 point.  $T\text{-score} = 10Z + 50$ , where 10 was multiply constant and 50 was additive constant.

### Data Analysis

The most appropriate statistics is Pearson Product Moment Correlation because the hypothesis sought to look for significant relationship between two variables.

The data collected was analyzed as follows:

**Hypothesis 1:** There is no significant relationship between openness to experience personality trait scores and achievement in mathematics scores among senior secondary school students in North-West Nigeria. Pearson r correlation was used to test this hypothesis at 0.05 level of significance and the result of the analysis is presented in below.

**Table 1: Pearson r correlation between openness to experience personality traits scores and achievement in mathematics scores.**

N	Data	X —	Std. Deviation	Correlation, r	p
81	Openness to Experience	67.321	5.760	0.412	0.00
81	Achievement in Mathematics	56.657	6.097		

The result from table 1 shows the correlation between openness to experience personality traits scores and achievement in mathematics scores. The result of the analysis indicated positive correlation between openness to experience personality traits scores and achievement in mathematics scores  $r = .412$ ,  $p = .000$ ,  $p < .05$ . By implication, any student who possesses this type of traits will do well in mathematics and an increase in these traits scores cause increase in

achievement in mathematics scores. Hence the null hypothesis was rejected, meaning that openness to experience personality trait positively related and contributes to achievement in mathematics.

### Discussions

The test of hypothesis one revealed that there is significant relationship between Openness to Experience personality trait scores and achievement in mathematics scores among senior secondary school students in North-West Nigeria. The study was in congruent with the study of Ibrahim (2016) who conducted a research to find out relationship between openness to experience personality trait and academic achievement in biology among senior secondary school students in Katsina State He found that there was positive relationship among students' biology academic achievement and openness to experience. Also, the study was in line with the study of Hakimi, Hejazi, and Lavasani (2011) who conducted a research on Relationship between Personality Traits and Students' Academic Achievement and found that openness to experience personality trait predict academic achievement.

This finding contradicted that of Raveeswaran and Ananthasayanan (2019) who found that extroversion, conscientiousness and agreeableness were positively associated with mathematics related courses of students while neuroticism and openness were negatively associated with academic achievement. The difference in the findings of Raveeswaran and Ananthasayanan (2019) and the current findings could be as a result of the difference in their population of the study. The current study population was senior secondary school students in Nigeria while their study was conducted using undergraduate students in Jaffna. In accordance with the finding of this study, openness to experience personality trait is a type of trait that if students possess will help them to excel in mathematics. In connection with the big five personality traits theories, students with openness to experience personality trait will display traits like positive values, ideas and feelings. Therefore, those students who possess facet of openness to experience have good ideas, feelings and values for mathematics which positively contributed to good achievement in mathematics.

### Conclusions

Relationship exists between Openness to Experience Personality trait and achievement in mathematics. According to the Big Five Personality Theories, students with this type of personality traits possess good ideas, feelings and values, meaning the more these characteristics, the better the achievement in mathematics.

### Recommendations from the Study

1. Openness to experience personality trait contributes to good achievement in mathematics; therefore, counselors should counsel parents on how train their children in such a way that will make them grow up with this type of trait.
2. Educational psychologists should train teachers on how to teach their students in a way that will make them grow up with openness to experience personality trait.

### References

- Abubakar, G. (2022). Breakdown of june/july 2022 SSCE result. <https://www.myschoolgist.com/ng/neco-results-statistics/>, retrieved on January, 2022.
- Asante, K. (2012). Secondary students' attitudes towards mathematics. *International*

- Journal of Educational Psychology*, 1 (20), 121–133.
- Cattigan, P.M. (2019). The big five personality characteristics as predictors of school performance. *Personality Psychology*, 53 (1), 67-88.
- Dahiru, B.W. (2014). *Effects of Mathematics Improvement Project (M.I.P.) on Students' Performance and Perception in Senior Secondary School Mathematics in Katsina State*. Unpublished Thesis in Ahmadu Bello University, Zaria.
- Daminabo, W.H. (2018). *The relationship between personality traits and academic achievement of Secondary School Students in Rivers State*. Unpublished M.Ed. dissertation, University of Port-Harcourt.
- Digman, J.M. (2021). Personality Structure. Emergence of the five factors model. *Annual review of psychology*, 4 (1), 417-440.
- Frank, H. B. (2018). Investigating gender differences in mathematics performance and in self-regulated learning: An empirical study from Malta Equality, Diversity and Inclusion. *Journal of Educational Psychology*, 3 (2):2040-7149.
- Goldberg, L. R. (1993). The development of makers for the Big-Five factors structure. *Journal of Psychological Assessment*, 4 (1), 26-42.
- Hakimi, S. Hezaji, E. & Lavasani, G. (2011). The relationship between personality traits and students academic achievement. *International Conference on Education and Educational Psychology*.
- Holly, M. A. & Andrew, J. E. (2005). The shame of failure: Examining the link between fear of failure and shame. *Personality and Social Psychology Bulletin*, 31, 218-231.
- Ibrahim, B. (2016). *Relationship between personality traits and academic achievement in biology among senior secondary school students in Katsina State*. Unpublished thesis, Umaru Musa Yara'adua University, Katsina.
- John, O. P. & Srivastava, S. (1999). The big five trait taxonomy: History, measurement and theoretical perspectives. In L.A. research (2<sup>nd</sup> ed). New York: Guilford, p. 35-89.
- Koleoso, A. (1999). *Research methods and statistics*. Ibadan: Ben Quality Prints. Pp. 77 – 94.
- Leonard, K. S., (2018). The State of Education in Nigeria. Part 1. [www.nationalaccordnewspapper.com/state-education-nigeria-part-1-leonard-karshima-shilgba/](http://www.nationalaccordnewspapper.com/state-education-nigeria-part-1-leonard-karshima-shilgba/), retrieved on 8<sup>th</sup> January, 2023.
- Mata, M. L., Monteiro, V. & Peixoto F. (2012). Attitudes towards Mathematics: effect of individual, motivational and social support factors. *Journal of Educational Research*, 3 (2), 78-90.
- Mojeed, O. G. (2024). *Influence of personality traits, attitude and gender on achievement in mathematics among senior secondary school students in North-West Geo-Political Zone, Nigeria*. Unpublished PhD Thesis, Bayero University, Kano.
- Olu, A. (2022). West African examination council may/june results statistics for 2022/2023.
- Ravendran, T., Raveeswaran, M. & Ananthasayanan, S. (2019). Impact of personality traits on academic success of university undergraduates: A case study of university of Jaffna using big five personality traits theory. *Journal of Educational Psychology*, 4 (2): 105-118.
- Research Advisors (2006).References.Retrieved on the 5<sup>th</sup> April, 2021 from <http://research-advisors.com/tool/SampleSize.htm>.
- Saka A. O., Sam, E.O. & Yusuf, K. (2012). *Educational Psychology: Introduction*, Zaria Tamaza publishing company Ltd. Pp. 56 – 77.
- Yusuf P. (2011). Gender Differences in students' academic performance. *Journal of Frontiers in Psychology*, 2 (1) 78-93.

## PERSONALITY TYPES AS DETERMINANT OF SELF-EMPLOYMENT AMONG UNDERGRADUATE STUDENTS IN OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE: CATALYST FOR ENHANCING THE COHERENT CURRICULUM IN NIGERIA

**Popoola Oluwasegun Oladipupo**

Obafemi Awolowo University, Ile-Ife

oluwasegunpopoola@yahoo.com; segpopson@gmail.com; 08133898443

### Abstract

*The study investigated personality types on future and self-employment among undergraduate students, with a view to improving students' self-employment orientation across all disciplines in the study area for the fulfillment of coherent curriculum. The study adopted descriptive survey research design. The population of the study comprised all undergraduate students of Obafemi Awolowo University, Ile-Ife, Nigeria. The sample for this study consisted of thirteen (13) faculties in Obafemi Awolowo University, Ile-Ife, Nigeria using total enumeration sampling technique. Simple random sampling technique was used to select sixteen (16) departments for the study. Five (5) students were randomly selected from each department making a total of eighty (80) students. One research instrument titled "Students' Personality Types on Future and Self-Employment Questionnaire (SPT-FSEQ) was used for the study. A reliability Coefficient of 0.82 was obtained which was adjudged good for the study. The research question raised was answered using frequency counts and percentage, while regression analysis was used to answer the stated research hypothesis at 0.05 significant level. The results of the study indicated that, Personality types of students in OAU are low based on proactiveness (58.1%). The result of the study as well indicated that personality types independently and positively influence future and self-employment ( $F = 4.645$  with  $p < 0.05$ ). The study concluded that, students in the study area are mostly not determined to be self-employed by the end of their undergraduate studies despite the positive influence of personality types on future and self-employment. However, personality types of students in the study area are low based on proactiveness. Therefore, it was recommended that; Teachers should be trained on curriculum relevance and implementation across disciplines. The government should mandate self-employment in schools to help low proactive students. Additionally, Intervention programmes should focus on developing positive personality types and attributes among students.*

**Key words:** Education, Coherent curriculum, Personality Types, Self-Employment

### Introduction

Education is seen as the very first step in any human operation, since it plays a major role in human resource growth as well as in the development of individual wellbeing and living opportunities. Proper, relevant and meaningful education is important for anybody that intends to contribute significantly to the development of the country. So, importance of education in life cannot be over emphasized. It is one of the vital ways of achieving universal national development. Parents, teachers/lecturers and youths are complaining of unemployment rate among young folks in Nigeria after the years of academic training with rigorous experience, which made many to lose interest on the significance of education in Nigeria. However, Covid 19 pandemic had worsened the situation of unemployment rate in the country. This is because most companies/firms reduced their workers, while government reduced their workers' salary by certain percent in response to the situation Covid 19 pandemic brought to the economy. No

doubt, education still remains a pivot by which nations can be developed economically and technologically. Education is an instrument for national development because it is the implement used in developing the citizens who in turn contribute to the development of the nation (Bello, 2017 as cited by Salami, Oladipupo, Oloyede and Adefioye (2019). Many youths are of the opinion that education in Nigeria is a scam, because they see it as the way by which government and private establishments make money and are less concern about the future of youths, so nothing more. Some prefer to engage in a vocational Job or the other instead of going to school; while some prefer to use the money, they could have used as school fees for business without a prior proof of the completion of higher institution.

Recently, it has been observed that some students in higher institutions invest their school fees on cryptocurrency. This is because they are not sure of what future holds in Nigeria, especially life after school where there is no Job except private school teachings where they pay peanut at the end of the month. Thus, there is the need to find a sustainable way of solving this problem and make education better in the country in order to achieve the goals and objectives of the overall development of nation. In view of this, researchers have discovered self-employment to be the most accurate solution to the calamity of unemployment facing youths in Nigeria. Also, it has been discovered that those who are educated are better self-employed. Concomitantly, self-employment/entrepreneurship skill is a product of teaching and learning. Learning outcomes encapsulate students' achievement, academic performance, interest, self-efficacy, skill acquisition (i.e. self-employment/entrepreneurship), attitudes, and so on. Meanwhile, the attainment of positive and effective learning outcomes centers around curriculum and implementation.

According to Salami and Ojediran (2017), curriculum is like the genetic makeup upon which learners must be built. If curriculum in Nigeria is adequately implemented, all disciplines in higher institutions have their application to real life scenario which is capable of making graduates self-dependent after school even to the level of contributing to the needs of the society. The main goal of curriculum is to cater for cognitive, affective and psychomotor needs of learners, and 21<sup>st</sup> century curricula consider the societal needs.

Increase in unemployment rate in Nigeria can therefore be traced to either lack of coherent curriculum or inability to carryout good implementation on the existing curriculum. A coherent curriculum is the ability for a curriculum to possess all necessary element and still fulfill the needs the of society (Adeleke, 2021). Self-employment comprises a fundamental engine for economic, social, useful and all-round development of any nation. Self-employment has been distinguished by many both universally and nationally as a tool for a sustainable, virile, and stable economy. This is the reason progressive governments in Nigeria endeavored to strengthen applicable agencies in request to accomplish this position. The legislature of today may look more genuine than any time in recent memory in sustaining a couple of the agencies, for example, National Poverty Eradication Program (NAPEP), National Directorate of Employment (NDE) and National Economic Empowerment and Development Strategy (NEEDS). Buttressing this reality, Akpomi (2009) opined that no nation can as an issue of truth, push ahead technologically, industrially and economically without developing solid private partner initiative (self-employed individuals) in the making of wealth, poverty eradication and employment generation with required skills. These skills include administrative, relative, correspondence, specialized, human and extraordinary skills to adapt to the difficulties of things to come. Despite the way self-employment has been viewed as rampart for employment generation and sustainable development in Nigeria, the sector nevertheless has had its a

considerable amount of disregard with associative terrible effects on the economy. Against this scenery, self-employment when and if bravely modified/encouraged in Nigeria will assume its pride of position in quelling unemployment and in this manner generating employment among Nigerian youths particularly the graduates and by and by, place the economy on a legitimate footing for sustainable development. The disposition of youths to future in terms of self-employment could be traced to school or right from adolescent. Many graduates made mistakes of going through series of educational training, even after masters' degree before the reality of unemployment shows itself to them. If there is a high proactive personality to be self-employed, preparation would be made right from school as to how to apply the knowledge acquired in school rightly to be self-employed. Personality types have been found as good attributes of disposition to self-employment. Students who are always determined no matter the influence around mostly end up with good grade in school. The same goes with those who are projecting into future with full focus, and not losing concentration. Such could be said to possess proactive personality types because the driving force is from within. However, those who are easily influenced, who have no concrete decision, they live a lifestyle today and take up another tomorrow, those who possess inability to hold on to their conviction may be referred to those who possess low proactive personality types.

Many students panic for fear of failure during examination period, whereas many are confused when they remember the situation in the country as regards those graduates who are yet to be employed for years. It has also been observed that most universities even Polytechnics do not have adequate resources for teaching and learning of practical activities, as well as entrepreneurship training in the classroom which is capable of developing adequate skills that is capable of helping students to be self-employed in appreciation to what was done in class. The question on why an individual becomes self-employed was answered in research from two different views which are: a personality-driven explanation and a behavioral explanation. The personality-type explanation stresses that individuals with certain traits have a higher probability of becoming self-employed (Rauch & Frese 2007; Zhao & Seibert, 2006). While, the behavioural explanation highlights the fact that individuals tend to learn from others who are role models for them (Bandura, 1986). Many researchers have composed broadly on entrepreneurship and its intensity to create employment, subsequently, underscoring the quintessence, importance and significance of this sub-sector in the development of some random economy. The encounters of created economies corresponding to the jobs played by entrepreneurship braces the way significance of self-employment cannot be overemphasized particularly among the developing countries. In request to feature its importance corresponding to the growth and development of a given economy, self-employment has been differently alluded to as a "wellspring of employment generation". This is on the grounds that innovative exercises have been seen as fit for making constructive effects on the economy of a country and the personal satisfaction of the people (Adejumo, 2001). Studies have set up its positive relationship with incitement of economic growth; employment generation; and empowerment of the hindered fragment of the population, which include women and the poor (Oluremi & Gbenga, 2011).

Researches have revealed that personality types are significantly related to the education performance of the students (Chlosta, Patzelt, Klein & Dormann, 2012), but there is a dearth in such literature as regards personality types as determinant of future and self-employment among undergraduate students to see the extent at which curriculum implementation in Nigeria has satisfied the societal need. In cases where such studies are found, it is either in other countries or on other subject matters. If students possess the proactive personality types, it will tend towards

self-employment, and they will certainly be aiming at the right application to the school curriculum irrespective of what they study (i.e. being self-employed in the future). Consequently, this will solve the problem of unemployment with reasonable percent. It is therefore important to assess the personality types as determinant of future and self-employment among undergraduate students in Obafemi Awolowo University; Hence, the study.

### **Objectives of the Study**

The specific objectives of the study are to:

- assess the personality types on self-employment among undergraduate students despite the implementation of curricula across all disciplines in Obafemi Awolowo University, Ile-Ife, Nigeria; and
- examine the influence of personality types on self-employment among undergraduate students despite the implementation of curricula across all disciplines in Obafemi Awolowo University, Ile-Ife, Nigeria;

**Research Question:** The following research question was raised to guide the study.

- What are the personality types of undergraduate students of Obafemi Awolowo University, Ile-Ife, Nigeria as far as application of what is being taught in school curricula is concern?

**Research Hypothesis:** A research hypothesis was formulated for the study

- There is no significant influence of personality types on future and self-employment among undergraduate students in Obafemi Awolowo University, Ile-Ife, Nigeria as far as application of what is being taught in school curricula is concern.

### **Methodology**

The study adopts a descriptive survey research design. The population of the study comprised all undergraduate students of Obafemi Awolowo University, Ile-Ife, Nigeria. The study sample consisted of thirteen (13) faculties in Obafemi Awolowo University, Ile-Ife, Nigeria using total enumeration sampling technique. Simple random sampling technique was used to select sixteen (16) departments for the study. Five (5) students were randomly selected from each department making a total of eighty (80) students. One research instrument titled Students' Personality Types on Future and Self-Employment Questionnaire (SPT-FSEQ) was used to gather data on the personality types on future and self-employment among undergraduate students in the study area. SPT-FSEQ was developed by the researcher to assess the personality types, then the influence they will have on on future and self-employment among undergraduate students. The SPT-FSEQ consisted of three sections, A, B, and C. Section A contained items seeking information about the personal data of the respondents, section B sought for information on the personality types, while the section C contained information on future and self-employment of undergraduate students in the study area. The instruments contained 28 initial items on respondents' personality types and was based on a 4-point Likert Scale of Strong Agree (SA), Agree (A), Strongly Disagree (SD), Disagree (D). The face and content validity of the instrument was done using two experts from the field of curriculum Studies, Department of Science and Technology Education, and two experts from the Department of Educational Foundations and Counselling (One from Psychology Education, and One from Test and Measurement) in Obafemi Awolowo University, Ile-Ife. Also, to test the reliability of the research instrument, pilot study was conducted in another University outside

the study population. The reliability of the questionnaire was then determined using Cronbach alpha. The choice of Cronbach's Alpha method is based on the fact that the responses to the items in the instrument were not dichotomously scored. In other words, the responses do not entail right or wrong, pass or fail answers but the level of agreement or disagreement with each statement of the given items in the instrument. Initially, 28 items were designed, but 20 items were retained after the reliability test, while 8 items were dropped. A reliability Coefficient of 0.82 was finally established. The value obtained was adjudged as good enough for the instrument. The direct delivery and retrieval method was employed in the administration of the instrument. A total of 80 copies of the questionnaire was administered by the researcher. The direct administration and retrieval by personal contact was used to ensure a speedy and high return rate of one hundred percent of the questionnaires within the range of two months. The research question raised was answered using frequency counts and percentage, while regression analysis was used to answer research hypothesis at 0.05 significant level.

## Result

**Research Question One:** What are the personality types of undergraduate students of Obafemi Awolowo University, Ile-Ife, Nigeria as far as application of what is being taught in school curriculum is concern?

**Table 1: Personality types of Students in the study area**

	Personality types	SA	A	D	SD	$\bar{X}$
1.	I enjoy facing and overcoming obstacles to my ideas	40(54.1)	21(28.4)	8(10.8)	5(6.8)	1.70
2.	Nothing is more exciting than seeing my ideas turn into reality	32(43.2)	29(39.2)	7(9.5)	6(8.1)	1.76
3.	I excel at identifying opportunities	27(36.5)	30(40.5)	7(9.5)	10(13.5)	1.97
4.	I love to challenge the status quo	33(44.6)	34(45.9)	3(4.1)	4(5.4)	1.70
5.	I engage in business in school and still perform excellently in my courses	31(41.9)	36(48.6)	5(6.8)	2(2.7)	1.68
6.	If my lecturer did not explain better, I will still perform better in my course of study	10(13.5)	41(55.4)	8(10.8)	13(17.6)	2.26
7.	I have the skills and capabilities required to succeed as an entrepreneur	12(16.2)	24(32.4)	29(39.2)	9(12.2)	2.43
8.	I can spot a good opportunity long before others can	6(8.1)	17(23.0)	42(56.8)	9(12.2)	2.73
9.	Academics/white collar job is not for students like me	13(17.6)	12(16.2)	40(54.1)	9(12.2)	2.61
10.	If I try enough, I can excel greatly in my course of study	21(28.4)	41(55.4)	7(9.5)	5(6.8)	1.89
11.	I love to multitask	29(39.2)	20(27.0)	7(9.5)	18(24.3)	2.19
12.	I find it so difficult to lead people so I don't think I can be a better entrepreneur	32(43.2)	35(47.3)	2(2.7)	5(6.8)	1.73
13.	I can take risks with my money, such as investing in buying shares/stocks.	32(43.2)	39(52.7)	2(2.7)	3(4.1)	1.62
14.	Using social media (Facebook, WhatsApp, Instagram, Imo) does not affect my performance in school.	32(43.2)	19(25.7)	10(13.5)	8(10.8)	1.91
15.	I perform excellently when I have enough time to study and practice but I think accurately about business within few minutes	20(27.0)	39(52.7)	11(14.9)	4(5.4)	1.99
16.	When I travel, I tend to take new routes	34(45.9)	38(51.4)	2(2.7)	0(0.0)	1.53
17.	I like to try new foods, new places, and totally new experiences	36(48.6)	30(40.5)	2(2.7)	8(10.2)	1.50
18.	I will take a serious risk within the next one year	18(24.3)	34(45.9)	2(2.7)	20(27.0)	2.32
19.	I would rather find a new company than be the manager of an existing one	26(35.1)	20(27.0)	13(17.6)	15(20.3)	2.23
20.	I am too busy with classes to consider starting my own business	31(41.9)	29(39.2)	2(2.7)	12(16.2)	1.93

Source: *Field Survey, 2020*

Table 3 showed the personality types of students in the study area. From table 1, 82.5% assented that they enjoy facing and overcoming obstacles to their ideas with a mean score of 1.70, while 82.4% with a mean score of 1.76 agreed that nothing is more exciting than seeing their ideas turn into reality. Table 1 also revealed 77.0% students who agreed that they excel at identifying opportunities with a mean score of 1.97. Also, 90.5% students agreed that they love to challenge the status quo with a mean score of 1.70, while 90.5% assented that they engage in business at school and still perform excellently in their courses with a mean score of 1.68. From the table, 68.9% students assented that if lecturers did not explain better in classes, they will still perform better in their course of study with a mean score of 2.26, meanwhile 51.4% disagreed that they have the skills and capabilities required to succeed as an entrepreneur with a mean score of 2.43.

Also from table 1, 69.0% disagreed that they can spot a good opportunity long before others can with a mean score of 2.73, and 66.3% disagreed that academics/white collar jobs are not for students like them with a mean score of 2.61. From the table, 83.8% with a mean score of 1.89 agreed that if they try enough, they will excel greatly in their course of study, whereas 66.2% assented that they love to multitask with a mean score of 2.19. In addition, 90.5% with a mean score of 1.73 said they find it so difficult to lead people so they don't think they can be a better entrepreneur, but 95.9% students agreed that they can take risks with their money, such as investing in buying shares/stocks with a mean score of 1.62. No doubt, 68.9% with a mean score of 1.91 agreed that using social media (Facebook, WhatsApp, Instagram, Imo) does not affect their performance in school, while 79.7% with a mean score of 1.99 said they perform excellently when they have enough time to study and practice but think accurately about business within few minutes. Table 4.6 further showed 97.3% students with a mean score of 1.53 assented that they tend to take new routes when they travel, while 89.1% students declared that they like to try new foods, new places, and totally new experiences with a mean score of 1.50.

However, 70.2% students with a mean score of 2.32 agreed that they will take a serious risk within the next one year, while 62.1% agreed they would rather find a new company than being the manager of an existing one with a mean score of 2.23, meanwhile 81.1% with a mean score of 1.93 concurred that they are too busy with classes to consider starting their own business.

**Table 2: Summary of Personality types based on Proactiveness**

Criteria	Frequency	Percentage
Low Proactive personality	43	58.1
High Proactive personality	31	41.9
Total	74	100.0

Source: *Field Survey, 2020*

Table 2 shows the Summary of Personality types based on Proactiveness. To achieve this, the items of the section B of SPT-FSEQ that sought information on the personality types were computed. Thus, the descriptive analysis was carried out on the computed data to show the overall mean value for the personality types of the participants. The mean value for the personality types of participants in the study area was 38.327. As a result, the total number of personality types based on proactiveness in the study area were counted and the percentage was determined. Therefore, the personality types were divided into two based on how proactive they were, those above the mean are said to have high proactive personality and those below the stated mean are low proactive personality individuals. Those below the stated mean are tagged

low proactive personality and those above the mean were tagged high proactive personality. It was revealed based on the rating that 58.1% had low proactive personality types, and 41.9% had high proactive personality types.

From table 2, it could be deduced that Personality types in the study area are low based on proactiveness. Proactive personalities are those who are able to take action to influence environmental change.

**Research Hypothesis:** There is no significant influence of personality types on self-employment among undergraduate students in Obafemi Awolowo University (OAU), Ile-Ife, Nigeria

To test this hypothesis, the responses of students to personality types and the result of their responses to disposition to future and self-employment in SPT-FSEQ were subjected to Linear Regression analysis, using personality types as the independent variables, while the result of students' responses to disposition to future and self-employment were used as the dependent variable. The result is presented in the tables below

**Table 3: Regression table of the influence of Students' personality types only on future and self-employment among undergraduate students in OAU**

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	F	Sig.
1	0.319 <sup>a</sup>	0.102	0.080	0.47455	4.645	0.037

a. Predictor: (Constant), Personality types

Above table 3 presents the influence of Students' personality types on future and self-employment among undergraduate students in OAU. From the table, the R Square value is 0.102 and Adjusted R Square is 0.080. This can be interpreted to mean that personality types can account for a maximum 0.1% and a minimum of 0.0% of the variance observed. The table shows further that there is a significant influence of personality types on future and self-employment among undergraduate students in OAU as the significant level is 0.037 which is less than 0.05 threshold. Therefore, it can be concluded that personality types influence future and self-employment among undergraduate students in OAU.

In addition, Table 4 shows the strength and direction of the influence.

**Table 4: Strength and Direction of the influence of Students' personality types on future and self-employment among undergraduate students in OAU**

Model		Unstandardized Coefficients	Standardized Coefficients	T	Sig.	
		B	Std. Error	Beta		
1	(Constant)	0.950	0.219		4.342	0.000
	Personality types	0.319	0.148	0.319	2.155	0.037

a. Dependent Variable: self-employment

Table 4 shows the influence of Students' personality types on self-employment among undergraduate students in OAU. From the table, personality types positively and significantly influence self-employment among undergraduate students. The implication of this is that a unit increase in personality types leads to increase in self-employment among undergraduate students.

### Discussion of Findings

From the result of research question, the findings revealed that Personality types of students in Obafemi Awolowo University, Ile-Ife are low based on proactiveness. This implies that undergraduates in the study area are not prepared to be self-employed after their various programmes. This result may question the coherent nature of the curriculum at the

implementation level. This is because, a coherent curriculum is said to serve its society, and self-employment could be one of such. A coherent curriculum is also capable of making students develop a proactive personality type if adequately implemented. Looking at the work of Kickul and Gundry (2002), the result states that students who possess proactive personalities are “able to take action to influence environmental change.” Thus, these personalities are capable of scanning for opportunities, showing initiatives, taking actions, and attaining their potentials by bringing about changes. Meanwhile, the result of this study is not in congruence with that. Also, the study conducted by Hou, Wu, and Liu (2014) revealed a strong and predictable positive link between proactive personality and career adaptability among the graduates. These findings were in line with another research by Tolentino, Garcia, Lu, Restubog, Bordia and Plewa (2014). Their outcome highlights the significance of individuals taking initiative in dealing with a volatile career landscape. When confronted with a job shift, persons possessing a proactive personality do not simply accept the limitations imposed by their surroundings. Instead, they actively seek to enhance their current environment, actively search for prospects, and take decisive action. Proactive persons are more likely than others to prepare for and undertake work-related adjustments when faced with the requirement for career flexibility (Bateman & Crant, 1993). The study of Hou, Wu, and Liu (2014) also found that individuals with a proactive personality were more likely to adapt readily to the transition period when starting their careers. This means that graduates with proactive personalities were better able to adjust to the challenges of establishing a job (being self-employed).

In addition, results from the research hypothesis which showed the influence of personality types on self-employment among undergraduate students indicate that personality types positively influence self-employment among undergraduate students in the study area. The implication is that, personality types is a good predictor of self-employment among undergraduate students, but lack of curriculum implementation in a coherent manner, may render the curriculum products (undergraduates) of the various disciplines to be dependent, even after school, rather than converting the applications of what was implemented in the curriculum in school to what the society will largely benefit from. In the study of Bergeron, Schroeder, and Martinez (2014), the proactive personality trait had a positive correlation with both task behaviour and organisational citizenship behaviour. The association between proactive personality and organisational citizenship behaviour was influenced by perceived role breadth, acting as a mediator. However, perceived role breadth did not function as a mediator in the relationship between proactive personality and task behaviour. Individuals with a proactive personality, while not having a broader perspective on their role, exhibited higher levels of engagement in both task behaviour and organisational citizenship behaviour. Additionally, they also dedicated more hours per week to their work. The implication of the existing literature on the result of the current study is that, despite that personality types positively influence self-employment among undergraduate students in Obafemi Awolowo University, the proactiveness of the personality still needs to be high. In fact, McCormick, Guay, Colbert, and Stewart (2019) suggested that organisations seeking proactive employee behaviour should consider three options: recruiting individuals with a proactive personality who consistently exhibit proactive behaviour regardless of circumstances; nurturing transformational leaders who can motivate, inspire, and support proactive employee behaviour; or fostering an innovative and flexible environment that encourages proactivity regardless of individual differences among employees.

In a twenty-year review conducted by Crant, Hu, and Jiang (2016), it was found that three meta-analyses (Fuller & Marler, 2009; Thomas, Whitman, & Viswesvaran, 2010; Spitzmuller,

Sin, Howe, & Fatimah, 2015) have also extensively examined the proactive personality. Additionally, it was a key aspect of another meta-analysis that specifically investigated various conceptualizations of proactivity (Tornau & Frese, 2013). Proactive personality was used as a predictor variable in seven additional meta-analyses that examined proactive behaviour and related concepts more broadly. These meta-analyses were conducted by Alarcon, Eschleman, and Bowling (2009), Allen et al. (2012), Christian, Garza, and Slaughter (2011), Ng, Eby, Sorensen, and Feldman (2005), Ng and Feldman (2012, 2014), and Rauch and Frese (2007). No doubt, the proactive personality construct has garnered significant interest in the field of management since its initial introduction in the literature. Therefore, curriculum is a blue print upon which students' all-round domains can be shaped, thus, proactive personality becomes a matter of interest in education and curriculum to successfully manage their future and self-employment which in turn will contribute greatly to the society.

### **Conclusion**

Based on the outcomes of this study, it was concluded that despite the positive influence of personality types on future and self-employment, undergraduates in the study area are mostly still not determined to be self-employed after school. This low proactiveness could be due to family or environmental influence on their personality. The issue still centers around relevance of curricula to the society during the implementation processes. A coherent curriculum should serve its society. Therefore, there is a need for stakeholders to encourage proactive personality types in students toward self-employment to achieve a coherent curriculum fulfilment.

### **Recommendations**

It is however recommended that:

- Teachers/Lecturers are to be trained on relevance of school curriculum to the society, and appropriate ways of curriculum Implementation across all disciplines.
- Government and ministry of education should make self-employment a compulsory task in schools which will help students with low proactive personalities, since right curriculum implementation towards self-employment cut across all disciplines.
- Since personality types emerged as the greatest cause of variation in the students, it is important to initiate intervention programmes aimed at developing positive (high proactive) personality types and other personality attributes amongst the students in schools.

### **Limitations of the Findings**

This research acknowledged the following limitations:

- The study's sample size was relatively small, consisting of 80 undergraduate students from a single university, which may limit the generalizability of the findings to the broader population of Undergraduate Students in Nigeria.
- The data collected relied on self-reported responses from participants, which may introduce bias due to social desirability or inaccurate self-perception of personality traits and self-employment intentions.
- The questionnaire used in the study may not have comprehensively captured all relevant aspects of personality types and their influence on self-employment. Other factors such as socio-economic background, cultural influences, and educational experiences could also play significant roles but were not fully explored.

### Strengths of the Study

This study has potential strengths, which include:

- The study employed a systematic method in research design, including sampling techniques, data collection procedures, and statistical analyses, which enhances the reliability and validity of the findings.
- The study shed light on the relevance of curricula as blueprint to self-employment across all disciplines. If curricula are implemented in a coherent manner, they are all capable of proffering pertinent solution to unemployment issues in Nigeria.
- The study addresses an important gap in the literature by investigating the relationship between personality types and self-employment among undergraduate students in Nigeria, contributing to the understanding of factors influencing career choices and coherent curriculum fulfilment.
- The findings offer valuable insights for educational policymakers, curriculum developers, and career counsellors to enhance curriculum relevance and design interventions aimed at promoting self-employment among students with diverse personality profiles.

### Recommendations

The following recommendations were made for future research:

- Future research could adopt longitudinal designs to track changes in personality types and self-employment intentions over time, providing a more comprehensive understanding of developmental trajectories and causal relationships.
- Incorporating a multidimensional assessment of personality, including traits such as resilience, risk-taking propensity, and creativity, can enrich the understanding of how different personality factors influence self-employment behaviour.
- Comparative studies across multiple universities or educational contexts within Nigeria could explore variations in personality types, curriculum effectiveness, and self-employment outcomes, facilitating more nuanced insights and policy recommendations.
- Qualitative research methods, such as interviews or focus groups, can complement quantitative findings by exploring in-depth narratives and contextual factors shaping students' perceptions of self-employment and their readiness for self-employment.
- Implementing and evaluating intervention programmes aimed at fostering skills for self-employment and proactive personality traits among undergraduate students could provide empirical evidence on effective strategies for curriculum enhancement and student support initiatives.
- Studies on the need for coherent implementation of curriculum to foster self-employment across all disciplines will help the stakeholders in all departments.

### References

- Adeleke, M. A. (2021). *Theory and practice in curriculum*. Postgraduate Students' classroom lecture note.
- Adejumo, G. (2001). Indigenous entrepreneurship development in Nigeria: characteristics, problems and prospects. *Advances in Management: Journal of Department of Business Administration*, University of Ilorin, Ilorin Nigeria, 2(1): 112-122.
- Ahman M. A. (2016). Self-concept, locus of control and school motivation in relation to academic achievement among secondary school students in Northern Nigeria.

- Unpublished Ph. D thesis*; University of Leicester
- Bandura, A. (1986). Social foundations of thought and action. Engelwood Cliffs, NJ: Prentice-Hall.
- Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, 14, 103-118. <http://doi.org/d9prhw>
- Bergeron, D. M., Schroeder, T. D., & Martinez, H. A. (2014). Proactive personality at work: Seeing more to do and doing more? *Journal of Business and Psychology*, 29, 71-86.
- Chlosta S., Patzelt H., Klein S. B. and Dormann C. (2012). *Parental role models and the decision to become self-employed: The moderating effect of personality*. *Small Business Economics*, 38; 121–138
- Crant, J. M., Hu, J., & Jiang, K. (2016). Proactive personality: A twenty-year review. *Proactivity at work*, 6(2); 211-243.
- Fakeye, D. O. (2011) Locus of control as a Correlate of Achievement in English as a Second Language in Ibadan. *Journal of Education and Social Research*. 4(17), 5-9.
- Hou, C., Wu, L., & Liu, Z. (2014). Effect of proactive personality and decision-making self-efficacy on career adaptability among Chinese graduates. *Social Behavior and Personality: an international journal*, 42(6), 903-912.
- Kickul, J., & Gundry L.K. (2002). Prospecting for strategic advantage: the proactive entrepreneurial personality and small firm innovation. *Journal of Small Business Management*, 40, (2), 85-97.
- McCormick, B. W., Guay, R. P., Colbert, A. E., & Stewart, G. L. (2019). Proactive personality and proactive behaviour: Perspectives on person–situation interactions. *Journal of occupational and organizational psychology*, 92(1), 30-51.
- Mei-Mei, C and Chiung-mei, H. (2014) Effects of locus of control and learner control on web-based language learning. *Computer Assisted Language Learning*, 22(3), 189-206.
- Oluremi, H.A. & Gbenga, M.A. (2011). Environmental factors and entrepreneurship development in Nigeria. *Journal of Sustainable Development in Africa*, 13(4).
- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality and business creation and success. *European Journal of Work and Organizational Psychology*, 16(4), 353–385.
- Salami, M. O., Oladipupo P. O., Oloyede M. A. & Adefioye A. E. (2019). Assessment of Biology Curriculum Implementation in Colleges of Education in Osun State, Nigeria. *International Journal of Innovation and Research in Educational Sciences*. 6(6), 2349–5219
- Spencer, S.J. and Myers, D.G. (2001). *Social psychology*. Canada: McGraw-Hill Ryerson Limited
- Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., & Plewa, C. (2014). Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism. *Journal of Vocational Behavior*, 84, 39-48. <http://doi.org/sj2>
- Zhao, H., & Seibert, S. E. (2006). The big five personality dimensions and entrepreneurial status: A meta-analytical review. *Journal of Applied Psychology*, 91(2), 259–27

## SOCIAL MEDIA AND DATING BEHAVIOUR AMONG ADOLESCENTS IN OBIO/AKPO LOCAL GOVERNMENT AREA, RIVERS STATE.

**Abaa, Angela Ebere**

Faculty of Education,

National Open University of Nigeria, Abuja

aabaa@noun.edu.ng, 07030393573

### **Abstract**

*The study sought to investigate social media and dating behaviour among adolescents. Specifically, it seeks to: (a) investigate social media and dating behavior among adolescents and (b) examine parental monitoring and dating behavior among adolescents. Descriptive survey design was used to find out the opinions of individuals on various trending issues. In this case, it was employed to ascertain social media and dating behavior among adolescents in Rivers State. The Population of the study was 9636 students in Senior Secondary, SS 1-2 Students in Obio/Akpor Local Government Area in Rivers State. The sample consisted of (330) students in Obio/Akpor Local Government Area in Rivers State. Simple sampling was used in selecting 11 schools out of the 15 Senior Secondary schools in the LGA. Furthermore, 30 students were selected using simple random without replacement. Item mean was used to answer the research question, while T-test statistic was used to evaluate the stated hypotheses. Findings from the study revealed that there is a significant difference between social media and dating behaviour among adolescents. It was recommended that, regular meetings between Parents-Teachers' Association, should be encouraged. This will make it possible for the school administration to update senior students' parents on the use of this social media phenomenon and to update the parents on the health and educational consequences accompanying the use of all these networking tools. Finally, school Counsellors should step up in individual and group counselling to direct the students.*

**Keywords:** Social media, Dating, Behaviour, Adolescents

### **Introduction**

Adolescence is transitional period from childhood to adulthood, which is often associated with heightened curiosity and risk-taking, including sexual risks. Cognitions related to dating relationships have been linked to the observed high rates of premarital sex and early sexual debut among adolescents. Unhealthy dating behaviour is one of the risky behaviour towards adolescent health. Sexual experience often occurs when adolescents are dating. Osita-Ejikeme (2018) stated that students' addictive use of social media platforms results in their creating personal profiles and sharing personal information rather than accessing information or materials related to what is being learnt in the classroom.

Scholars have clearly reported an increase in the occurrence of sex discussions and demonstrations of sexual acts through social media, and the relationship between ping-pong, charting, sexting, texting, and other sexual related activities such as sending nude pictures, sexual messages, videos and self-pictures among adolescents. Ifekandu (2015) noted that these virtual spaces are now preferred by them for lewd conversations which they are not comfortable to engage in physical spaces. Virtual communities are being formed every day on the social networking sites and most adolescents are part of these communities and as a result, new sexual behaviours are formed. There are changes in the way adolescents seek for sexual partners

because in chatting, *sexting* and pinging, they found new ways of communicating their sexual needs faster which brings about sexual and reproductive health misinformation. Sexually explicit movies in social media expose young people to adult issues at an impressionable age. Others opined that the use of pornographic materials as well as knowledge and use of contraceptives, especially the condom that has been excessively advertised, has contributed immensely to the involvement of youth in sexual practices.

The need for parents to develop an atmosphere of friendly behaviour at home in relating with children, which will in turn give them sense of belonging and help reduce risky behaviour cannot be over emphasized. Daminabo, Teibowei and Ajibua (2022) opined that students abuse of the right or freedom of using social media could be observed to relate to the level of intoxication that is bound to affect schooling performance as well as other areas of life and the society at large. In view of this, Osita-Ejikeme (2018) stated that social media addiction could impact on student's academic performance in secondary schools in an area like the study area. The combination of neurological need for stimulation and emotional immaturity lead to increased attention seeking and risk taking behaviour of the teenagers like smoking, unprotected sexual relationships, unwanted pregnancy, being infected with venereal disease (STDs), gangsterism, social media addiction bringing about a decline in their academic achievement, truancy, and eventual drop out of school. Depression, embarrassment, loneliness etc. are part of the experience which make the teenage years a period of turmoil, storm and stress indeed (Daminabo, Teibowei & Ajibua, (2022). Dating behaviour among secondary school students may take different dimensions which include unprotected intercourse, intercourse under the influence of substances, with injecting drug use, multiple sex partners, early age on initiation of sexual intercourse, and casual sex (Uzobo, Michael-Olomu & Enoch, (2020); Onasoga, Aluko, Adegbuyi & Filade, (2020). Substance-use disorders have often been associated with high risky dating behaviour (Landry, Turner, Vyas & Wood, (2017); Chaurla & Sarkar, 2019; Pew Research Centre, 2018). Ajagunna and Oladeji (2017) found that alcohol influenced risky dating behaviour among college women. Further, the study revealed that impulsivity, alcohol use, condom use and self-efficacy were significant predictors of risky dating behaviour.

Adegboyega, (2019) reported that social media leads students to the act of sending erotic messages, watching pornographic films and movies, and also increases unhealthy dating behaviour such as masturbation. Social networking sites enhance their chances of meeting multiple casual partners depending on their sexual preference and practices and in most cases; engage in an unprotected sexual intercourse. Moreover, pornographic images shared and accessed via the social media increases their sexual desire and, in their quest, to quench their sexual desire, increases their HIV vulnerability (Ifekandu,2015).

Social media refers to a set of related software of the internet developed in line with web principles and scientific innovations which permits the input and exchange of contents of the individual using it. In online dating, users can create a profile that typically include their user's photos, basic demographic information, behaviour and interests (e.g., smoking, drinking, and hobbies), self-description, and desired characteristics of an ideal partner and sometimes a personality questionnaire. After creating a profile, they search for partners based on a variety of user attributes and exchange messages with them. Much as online dating can be a convenient service for people who may have trouble meeting potential partners, the caveat is that people may lie, or exaggerate about themselves to attract others who might not otherwise be interested in them. Social media are those internet-based social websites or social network sites which permits the translation of communication into conversation among individuals, corporate bodies

and communities. Others are Snapchat, Weibo, Viber, Flicker, Google+, 2go, Instagram, YouTube, Tumblr, LinkedIn, Gab, and We Chat. These social linkages generally create opportunity for individuals using it to interact with well-wishers, share pictures, opinions, audio-visuals, meet themselves and remain together.

Hinduja, (2020), found out that 75% of teenagers owned cell phones, and 25% used them for social media; 54% used them for texting, and 24% used them for instant messaging. As a result of limited capacity in terms of self-regulation and easy vulnerability to peer pressure, children and adolescents are susceptible to some risks as they navigate and use social media. Ofole (2015) noted that it is not surprising that majority of youths patronize online dating sites given that sexual experimentation is a normal and healthy part of late adolescent development. Emerging adults experience "sexual unfolding" which is the normal expression of sexual feelings and experiences. Abaa, (2023), also upheld the same view in a research carried out recently in schools in Rivers state on Influence of parenting practices on adolescents risky behaviours of secondary school students. There is a widespread acknowledgement that being born in the digital age does not automatically give children digital skill. Evidence-based research is limited in Nigeria as it relates to parenting in the digital age. However, one recent survey shows that 54% of children aged 13–18 years confront risks of harm online. These risks of harm include cyberbullying, exposure to sexual content, chatting with strangers, sexting and grooming (DQ Institute, 2018). It was also reported in the survey that chatting with strangers was the prevalent risk confronted by children. Three out of five girls are first contacted by males they met online (DQ Institute, 2018). It is imperative for this study to address parents and children perspectives as it relates to parenting in the digital age in Nigeria.

It has become vitally important that parents should instruct their children on safe conduct on the internet (e.g., "Don't give personal information to strangers"), and they assume that their children follow their instructions. Adolescents tend to feel more comfortable contacting strangers online, while parents are more concerned about the risks that might accompany. This was also in agreement with the result of the findings of the study carried out by Abaa, (2023), on 'Influence of Parenting practices on adolescents' risky behaviours in Rivers State. One of the findings was that most parents are carefree on their adolescent children's internet behaviour which risks their lives. It was also observed that about 30% of the parents do not discuss the potential dangers of social media with their young ones. It is against this background that the research is motivated to investigate social media and dating behaviour among adolescents in Obio/Akpo Local Government Area of Rivers State.

### **Purpose of the Study**

The main purpose of the study was to investigate social media and dating behaviour among adolescents in Rivers State.

Specifically, the study to:

1. Investigate social media and dating behaviour among adolescents.
2. Examine parental monitoring and dating behaviour among adolescents

### **Research Question**

1. What is the item mean of social media and dating behaviour among adolescents?

**Hypotheses:**

1. There is no significant difference between social media and dating behaviour among adolescents.
2. There is no significant difference between parental monitoring and dating behaviour among adolescents

**Methodology**

The study used a descriptive survey research design. Descriptive survey research is used to find out the opinions of individuals on various trending issues.

**Population of the Study**

The Population of the study was 9636 students in Senior Secondary, SS 1-2 Students in Obio/Akpor Local Government Area.

**Sample and Sampling Technique**

The sample consisted of (330) students in Obio/Akpor Local Government Area in Rivers State. Simple sampling was used in selecting 11 Senior Secondary schools out of the 15 Senior Secondary schools in the LGA. Furthermore, 30 students were selected using simple random without replacement.

**Research Instrument**

A questionnaire developed by the researcher and approved by three specialists in Faculty of Education in National Open University of Nigeria, Abuja served as the study's instrument. The questionnaire titled Social media and dating behaviour among adolescents (SMADBAA) have two parts. Part A contain bio-data such as age, gender, class, while part B contain two sections, section (A) have 6 items on social media and dating behaviour among adolescents and section (B) have 6 items as it relates to parental monitoring and dating behaviour among adolescents.

**Reliability of the Instrument**

The questionnaire Social media and dating behaviour among adolescents (SMADBAA) have a reliability of 0.81 for social media and dating behaviour among adolescents and 0.76 for parental monitoring and dating behaviour among adolescents. A total reliability co-efficient of 0.79 was obtained.

**Method of Data Collection**

The respondents who filled out the 330 instruments received them with the help of eight research assistants. The completed instruments were instantly returned.

**Method of Data Analysis**

The instrument was patterned in the four-point Scale Format with responses on a continuum of 4-1: Strongly Agree (SA); Agree (A); Disagree (D); and Strongly Disagree (SD) respectively. In scoring the instrument, the study adopted the measure of central tendency (the mean score). The highest possible Mean Average was 4.00 while the least 1.00; the mid-point mean was 2.50 (since it was a four-point scale). Hence, mean average between 2.50 and 4.00 indicated high level of social media and dating behaviour among adolescents. At a 0.05 level of significance, the T-test statistic was utilized to evaluate the stated hypotheses.

## Results

**Research question One:** What is the item mean of social media and dating behaviour among adolescents?

**Table 1: showing mean respondents of social media and dating behaviour among adolescents**

S/N	Items	Mean	Decision
1.	I have made physical contact with friends, I met online for a romantic date	3.05	Accepted
2.	I don't like sex-texting in a relationship	2.39	Rejected
3.	I only accept video calls that are decent	3.21	Accepted
4.	I share my sexual experience on social media	3.34	Accepted
5.	I often send erotic messages on social media	3.09	Accepted
6.	I regularly view nude pictures on social media	3.25	Accepted
7.	Grand mean	3.06	Accepted

Results in Table 1 shows that the mean average of 3.06 is greater than the mid-point (2,50), hence social media and dating behaviour among adolescents is high. The item that most depict high level is: I share my sexual experience on social media.

**Hypothesis 1:** There is no significant difference between social media and dating behaviour among adolescents

**Table 1: T-test Analysis of social media and dating behaviour among adolescents**

Variables	N	Mean	Std. D	DF.	t	Sig.(2-tailed)
Social media	165	56.10	5.08	328	-6.960	0.000
Dating behaviour	165	59.49	3.44			

Table 1 shows that parental social media had a mean score of **56.10** with standard deviation of **5.08** and dating behaviour had a mean score of **59.49** with standard deviation of **3.44**. The table also revealed a t value of **-6.960** and a p value of **0.000**. Testing at an alpha level of **0.05** the p value is less than the alpha level. Hence the null hypothesis which states that There is no significant difference between social media and dating behaviour among adolescents is rejected. The result indicated that there is a significant difference between social media and dating behaviour among adolescents.

**Hypothesis 2:** There is no significant difference between parental monitoring and dating behaviour among adolescents.

**Table 2: T-test Analysis of parental monitoring and dating behaviour among adolescents.**

Variables	N	Mean	Std. D	DF.	t	Sig.(2-tailed)
Parental monitoring	165	59.25	5.25	328	-.981	0.327
Dating behaviour	165	59.49	3.44			

Table 2 revealed that the parental monitoring mean score was **59.25** with standard deviation of **5.25** and the dating behaviour had a mean score of **59.49** with standard deviation of **3.44**. The table also showed that the calculated t-value of **-.981** and a p value of **0.327**. Testing at an alpha level of **0.05**, the p value is higher than the alpha level, so the null hypothesis which states that,

there is no significant difference between parental monitoring and dating behaviour among adolescents is accepted.

### Discussion of Findings

The finding from the first hypothesis revealed that there is a significant difference between social media and dating behaviour among adolescents. social media usage by adolescent has brought significant difference in their dating behaviour. For instance, an adolescent might appear in physical space not to be dating but in the virtual spaces have multiple date. This finding is in line with the work of Ifekandu (2015) that these virtual spaces are now preferred by them for lewd conversations which they are not comfortable to engage in physical spaces. There are changes in the way adolescents seek for sexual partners because in chatting, sexting and ping, they have found a new way of communicating their sexual needs faster which brings about sexual and reproductive health misinformation. Moreover, Ofole and others stated that sexually explicit movies in social media expose young people to adult issues at an impressionable age. Others opined that the use of pornographic materials as well as knowledge and use of contraceptives, especially the condom that has been excessively advertised, has contributed immensely to the involvement of youth in sexual practices. The work of jagunna and Oladeji (2017) supported the finding that alcohol influenced risky dating behaviour among college women. Further, the study revealed that impulsivity, alcohol use, condom use and self-efficacy were significant predictors of risky dating behaviour.

The findings, as revealed in the other hypothesis, show that there is no significant difference between parental monitoring and dating behaviour among adolescents. This affirms earlier report that a large number of adolescents admitted to their being exposed to pornography on social media but smaller number of parents are aware of their children's exposure to it.

### Conclusion

The research concluded that there is a significant difference between social media and dating behaviour among adolescents. also, there is no significant difference between parental monitoring and dating behaviour among adolescents.

### Recommendations

The following recommendations were made:

1. Efforts should be made by parents to regularly monitor and supervises their teens on social media in order to mitigate their use for antisocial purposes.
2. Regular meetings between parents and teacher's PTA should be encouraged. This will make it possible for the school administration to update parents on the use of this social media phenomenon, the ill's and to update the parents on the health and educational consequences accompanying the use of all these networking tools.
3. Policy that will regulate and control the use of these media outlets should be put in place and
4. Finally, school Counsellors should be up and doing in individual and group counselling in schools to direct the students.

### References

Abaa, A. E. (2023). Influence of Parenting Practices on adolescents Risky Behaviours of secondary school students in Oyigbo L.G.A, Rivers State, Nigeria: Implications for

- counselling practice. *Rivers State University Journal of Education (RSUJOE)*, 26(1), 83-89
- Adegboyega, L.O. (2019). Influence of social media on sexual behaviour of youth in Kwara State, Nigeria: Implications for counselling practice. *Canadian Journal of Family and Youth*, 11(1), 85103
- Ajagunna, A., & Oladeji, D. (2017). Media influence as predictors of adolescent's sexual risky behaviour in Nigeria. *MOJ Women's Health*, 5 (2): 00112. DOI: 10.15406/mojwh.2017.05.00112.
- Chawla, N. & Sarkar, S. (2019). Defining "high-risk sexual behaviour" on the context of substance abuse. *Journal of Psychosexual Health*, 11(1). 26-31
- Daminabo, D. A. F, Teibowei J.& Ajibua, O. M (2022). Teenagers' challenges and its Implications on social adjustment of secondary school students in Obio/Akpor Local Government Area of Rivers State. *International Journal on Economics, Finance and Sustainable Development*, 3(1), 1 -27
- D. Q. (2018). Cyber Risks a Growing Concern Among Over Half of Nigerian Children. <https://www.dqinstitute.org/country-nige>
- Ifekandu, C.C. (2015). Social networking and HIV/AIDS associated risk behaviour among students in selected Nigerian Universities. A Thesis Submitted to the School of Postgraduate Studies, Ahmadu Bello University, Zaria. Department of Theatre and Performing Arts Faculty of Arts, Ahmadu Bello University Zaria.
- Laundry, M. Turner, M., Vyas, A. & Wood, S. (2017). Social media and sexual behavior among adolescents; Is there link? *JMIR Public Health Surveillance*, 3(2), 28-41
- Ofole N.M. (2015). Risky Sexual Behaviours among Female In-School Adolescents in Delta, Nigeria: Self-Esteem, Parental Involvement and Religiosity as Predictors. *European Scientific Journal*. 10(2)157-177.
- Onasoga, O.A., Aluko, J.O., Adegbuyi, S.N. & Filade, O.A. (2020). Influence of Social Media Use on Sexual Behaviour of Undergraduate Students in Ilorin, Kwara State, Nigeria. *Interdisciplinary Journal of Education*, 3 (2), 122-134.
- Osita-Ejikeme, U.E. (2018). Social Media and Students' Academic Performance among Secondary School Students, *International Journal of Research*, 5(19), 153-167.
- Pew Research Centre. (2018). Internet connectivity seen as having positive impact on life in Sub-Saharan Africa but digital divides persist. Retrieved from [www.pewresearch.org.201.419.4517](http://www.pewresearch.org.201.419.4517).
- Tata, E.A & Umar, I.M (2017). A study on social adjustment of adolescents. *International Journal of Scientific Development and Research*, 3(8), 203-211
- Uzobo, E., Michael-Olomu, O. & Enoch, R.O. (2020). Social media use and sexual behaviour of undergraduate students in a Nigerian University. *Journal of Demography and Social Statistics*, 7 (2), 1-14.

## INFLUENCE OF SEX EDUCATION IN CURBING SOCIAL VICES AMONG FEMALE ADOLESCENTS IN ILORIN WEST LGA, KWARA STATE

<sup>1</sup>Onobumeh Margaret & <sup>2</sup>Jamiu AbdulQudus Tosin and Acquah, Queen Elizabeth

<sup>1</sup>Department of Health, Safety and Environmental Education, Faculty of Education, University of Benin, Benin, Nigeria.

<sup>2</sup>Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin. Ilorin, Nigeria.

### Abstract

*This study examined the influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. Specifically, the following objectives were achieved (a) examine if improved parent-daughter relationship and (b) assess if delayed sexual gratification are an influence of sex education in curbing social vices among female adolescents among female adolescents. A descriptive research of the survey type was adopted. The population of the study comprised of all female adolescents in Ilorin West, Kwara State. 384) respondents were sampled for the study. The instrument used for data collection was a structured questionnaire which was validated by three experts and tested for reliability. The instrument was administered by the researchers. Percentage and Chi-square statistics were employed for data analysis at 0.05 level of significance. The findings of the study were that; i. Sex education influences improved parent-daughter relationship and ii. Sex education influences delayed sexual gratification in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. The study concluded that improved parent-daughter relationship and delayed sexual gratification are influence of sex education in curbing social vices among female adolescents in Ilorin West, Kwara State. It was recommended that School should implement and support parent involved sex education programs in schools and communities in Ilorin West Local Government Area, emphasize the importance of sex education that includes discussions on delayed sexual gratification*

**Keywords:** Influence, Sex, Curbing, Social, Vices

### Introduction

The period of adolescence occupies a unique stage in every person's life. It is a period of transition from childhood to adulthood. Adolescence has been described as a stage among human beings where a lot of physiological as well as anatomical changes take place resulting in reproductive maturity in the adolescents (Ankomah, et al., 2011). Many adolescents manage this transformation successfully while others experience major stress and find themselves engaging in behaviours (e.g. sexual experimentation, exploration and promiscuity etc.) that place their well-being at risk. Adolescents display sexual behaviours and developmental characteristics that place them at risk for Sexually Transmitted Diseases (STDs). A primary source of risk of HIV/AIDS for instance is unprotected /indiscriminate sexual activity (Mbugua, 2017). By the time they are 18, most adolescents in Nigeria are sexually active). Despite increased sexual knowledge, adolescents in Nigeria are poor contraceptive users. They are less likely than adults to consistently use condoms or other methods of protection that could reduce their chances of infection (Durowade et al., 2017). Neither specific teaching about contraception nor improving the contraceptive service consistently increases effective contraceptive use by young teenagers. Adolescents having sexual intercourse before age 16 are more likely to take risks. They have

more sexual partners during their lifetime and more partners per year and they start sexual activity earlier in new relationships than those who become sexually active after age 16 (Sule, et al., 2015).

In Nigeria today, sex education is yet to be incorporated into the curricula of secondary school education. Many Nigerians are reluctant to discuss sexuality and sexual health openly. Sex education is instruction on issues relating to human sexuality, including emotional relations and responsibilities, human sexual anatomy, sexual activity, sexual reproduction, age of consent, reproductive health, reproductive rights, safe sex, birth control and sexual abstinence (Adepoju, 2015). The European Expert Group, explains sex education 'as an education that aims to develop and strengthen the ability of children and young people to make conscious, satisfying, healthy and respectful choices regarding relationships, sexuality and emotional and physical health'. Sex education, therefore could mean any instruction in the processes and consequences of sexual activity, ordinarily given to children and adolescents. The term usually refers to classroom lessons about sex taught in primary and secondary schools, usually as part of the Biology class.

Sexual behavior during adolescence fundamentally steers the future life of both girls and boys. It should be guided with appropriate education, especially as it also represents a key factor in the attainment of sustainable developmental goals. It is estimated that over 21 million adolescents aged 15–19 years get pregnant annually in low economies (Robin, 2012). At the same time, over 50% of them give birth, excluding additional 777,000 adolescents that are less than 15 years who give birth in developing countries. The health issues and consequent challenges associated with sexual lifestyles and behavior among adolescents are enormous. It is reported that over 3.9 million girls between the ages of 15 and 19 carry out unsafe abortions annually worldwide. Other literature indicates that young people aged 10–19 represents relatively 4% among the population living with HIV infection (Amoo, 2020). Although Africa does not have the largest number of adolescents globally, adolescents make up the most significant proportion of the population of the sub-Saharan African region, with relatively 23% of the region's population aged 10–19 years. In sub-Saharan Africa, nearly four times as many girls aged 10–19 were infected with HIV than their male counterparts in 2018 alone. Specifically, adolescent sexual behaviors have been linked to a number of life events, and several health challenges, for example, early pregnancy, risks of pregnancy-related mortality, delivery complications, infant mortality, adolescent fatherhood, and school dropout (Amoo, 2017).

In Nigeria, problems associated with adolescents' sexual health include high rates of teenage pregnancy; a rising incidence of sexually transmitted diseases, high rates of abortion mortality etc. Medical problems associated with adolescents' sexual behaviour are a major health burden to Nigerians (World Bank Group, 2021). Problems are not confined to pregnancy but include secondary infertility and development of cervical abnormalities in adolescents. Early sexual activity has negative consequences for young people. Adolescents who become sexually active enter an arena of high-risk behaviour that leads to physical and emotional damage. Each year, influenced by a combination of a youthful assumption of invincibility, and a lack of guidance (or misguidance and misleading information), millions of adolescents ignore those risks and suffer the consequences (Obiekea, Ovri & Chukwuma, 2013).

Young men who have sex with men are at high risk for HIV and other sexually transmitted diseases. It has been found that individuals infected with an STD are at least two to five times more likely than uninfected individuals to acquire HIV if exposed to the virus through sexual contact. One study found that among gay male clinic patients screened for STDs, those 15 to 20 years old had the highest age-specific rates of rectal Chlamydia and gonorrhoea. These

findings suggest the need for effective sex education for the young ones. Sex education therefore portends greater potential in preventing and reducing these risks (Adekola et al., 2019). Sex education could enlighten the adolescent on the avoidance of pregnancy, HIV, other sexually transmitted infections, including other chronic health conditions and disabilities that are linked to adolescent sexual behavior. Thus, constant assessment of sexual education among adolescents cannot be overemphasized (Breuner, Mattson & Adelman, 2016). Also, sexual education plays a crucial role in shaping the attitudes, behaviors, and decision-making processes of adolescents, particularly young women. The impact of sexual education on social vices among adolescent women is a complex and multifaceted issue that involves various factors such as cultural norms, societal expectations, and individual empowerment (Romero-Estudillo, et al., 2014). Comprehensive sexual education equips adolescents with accurate information about reproductive health, contraception, and consent. When young women are well-informed about their bodies and sexual health, they are more likely to make informed choices, reducing the risk of engaging in risky behaviors. This knowledge empowers them to take control of their reproductive lives and promotes a sense of responsibility (Adedini, Mobolaji, Alabi & Fatusi, 2021).

Furthermore, sexual education fosters a culture of open communication around sexuality, breaking down taboos and stigmas. In societies where discussing sex is often considered sensitive or inappropriate, adolescents may turn to unreliable sources for information, such as peers or media, which can perpetuate misconceptions and contribute to social vices. Proper sexual education creates a platform for discussions that allow adolescents to ask questions, seek guidance, and understand the importance of healthy relationships (Izugbara & Nwabuawele, 2017).

Addressing issues like gender equality and consent within sexual education is crucial in combating social vices among adolescent women. By promoting respect, communication, and understanding in relationships, sexual education can contribute to the prevention of behaviors such as sexual harassment, abuse, and unhealthy power dynamics. Educating young women about their rights and encouraging them to establish boundaries can empower them to navigate relationships with confidence (Adedini, Mobolaji, Alabi & Fatusi, 2021).

In addition to preventing negative behaviors, sexual education can play a role in promoting positive outcomes for adolescent women. It can contribute to the development of self-esteem and body positivity, helping them resist societal pressures related to appearance and fostering a healthy self-image. When young women are confident in their identities, they are less likely to succumb to peer pressure or engage in activities that may be detrimental to their well-being (Todd, Cremin, Mcgrath et al, 2019). However, it's essential to acknowledge the challenges and controversies surrounding sexual education, as cultural and religious beliefs can influence its implementation. Some argue that discussing certain topics may contradict traditional values, leading to resistance from parents, educators, or policymakers. Striking a balance between cultural sensitivity and providing accurate information is crucial to ensuring that sexual education is effective in addressing social vices (Rasmussen & Bierman, 2018).

Finally, sexual education significantly influences social vices among adolescent women by providing accurate information, fostering open communication, and empowering young women to make informed decisions. A comprehensive approach that addresses issues of consent, gender equality, and self-esteem is essential to creating a positive impact on the lives of adolescent women. Despite challenges in implementation, societies must recognize the

importance of sexual education as a tool for promoting healthier relationships and preventing social vices among the younger generation (Adedini, Mobolaji, Alabi & Fatusi, 2021).

### **Statement of the Problem**

The influence of sexual education on adolescent women in Ilorin is a complex issue with various interconnected problems. Firstly, there is a lack of comprehensive and culturally sensitive sexual education programs, leading to misinformation and gaps in knowledge among adolescents. This deficiency contributes to the vulnerability of young women to engage in risky sexual behaviors. Furthermore, societal norms and conservative attitudes towards discussing sexuality hinder open conversations about sexual health. This silence fosters a climate where adolescents may turn to unreliable sources for information, increasing the likelihood of engaging in unsafe practices. The taboo surrounding sexual education also contributes to the prevalence of early pregnancies and sexually transmitted infections among adolescent women. Limited access to reproductive healthcare services exacerbates the challenges faced by young women. Inadequate facilities and the stigma associated with seeking reproductive health services deter adolescents from seeking timely and confidential medical assistance. This barrier to healthcare contributes to the perpetuation of social vices such as unwanted pregnancies, unsafe abortions, and the spread of sexually transmitted infections. Additionally, the influence of peer pressure and societal expectations adds another layer to the problem. Adolescents may succumb to pressure from peers to conform to perceived norms, often engaging in risky behaviors to gain acceptance. The lack of proper sexual education exacerbates this issue, as young women may lack the knowledge and skills needed to make informed decisions about their sexual health.

In conclusion, the influence of sexual education on adolescent women in Ilorin is marred by a lack of comprehensive programs, cultural barriers, limited access to reproductive healthcare, and societal pressures. Addressing these interconnected problems requires a multi-faceted approach involving education reform, community engagement, and improved access to healthcare services tailored to the unique needs of adolescent women in Ilorin. It is on this note that this study sought to examine the influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

### **Objectives of the Study**

Generally, the study sought to examine the influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. Specifically, the following objectives were to:

- examine if improved parent-daughter relationship is an influence of sex education in curbing social vices among female adolescents.
- assess if delayed sexual gratification is an influence of sex education in curbing social vices among female adolescents.

### **Research Questions**

The study seeks to provide answers to the following questions:

1. Will improved parent-daughter relationship be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State?
2. Will delayed sexual gratification be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State?

## Research Hypotheses

The following hypotheses were analysed in the study:

1. Improved parent-daughter relationship will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.
2. Delayed sexual gratification will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

## Methodology

A descriptive research design of survey type was adopted for the study. This method was used because the study requires the researcher to collect information for the purpose of describing the study in details. A descriptive survey research, according to Check and Scuhutt (2012) is the collection of information from a sample of individuals through their responses to questions. The population of this study comprises all female adolescents in Ilorin West, Kwara State. Simple random sampling technique was used to select four (4) wards out of eleven wards in Ilorin West Local Government Area, Kwara State. The four wards were chosen through a balloting method of Yes or No by selecting four rapped papers out of eleven (11) rapped papers with the help of research assistant in a Fish bowl. Also, purposive sampling techniques was used to select two communities in each from each selected wards. This takes the total numbers of communities for this study to eight (8) in numbers. Also, proportionate sampling technique was used to select 48 female adolescents from each of the selected community. This means that, a total of 384 female adolescents were used as respondents for this study. The main instrument that was used to gather information from the respondents is a researcher's structured questionnaire. The questionnaire consists of two section, A and B. Section A of the questionnaire elicited information on the demographic characteristics of the respondents; while section B elicited information on the variable under study. The questionnaire is a closed-ended type of four point Likert rating scale format of Strongly Agree (SA) = 4, Agree (A)= 3, Disagree (D)= 2 and Strongly Disagree (SD)= 1 will be used to test some variables. In order to measure the validity of instrument, the researcher-structured questionnaire was referred to three experts in the department of Health Promotion and Environmental Health Education, University of Ilorin for vetting, after the project supervisor have vetted it. Comments and suggestions made by the experts were carefully studied and use to improve the quality of the research instrument, before the reliability of the instrument was carried out and used for final administration of the study so as to ensure its appropriateness relevance and clarity. This help in content validity of the instrument. Test re-test technique was used to carry out the reliability of the instrument. The instrument was firstly administered to selected sample of the respondents in wards outsidess the ward selected for the study. The wards were 2 selected wards in Ilorin East Local Government Area. 20 questionnaires were administered to 20 respondents twice within 2weeks interval between the two administrations of the questionnaire. The result of the first administration was compared with the result of the second administration using Pearson Product Moment Correlation (PPMC). After analyzing the results using Pearson Product Moment correlation (PPMC), the correlation co-efficient of 0.82r was gotten which shows that the instrument is reliable for the study. The data collected from the respondents were sorted, coded and subjected to appropriate statistical analysis. Section A which entail the demographic data of the respondents was analyzed using descriptive statistics of frequency counts and percentage; also,

percentile analysis was used to answer all the research questions while the inferential statistics of Chi-square was used to test the postulated null hypotheses at 0.05 alpha level to criterion for either to reject or retain the stated hypotheses used for the study.

### Answer to Research Questions

**Research Question One:** Will improved parent-daughter relationship be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State?

**Table 1: Percentile Analysis of Improved Parent-Daughter Relationship as an Influence of Sex Education**

S/N	ITEMS	SA (%)	A (%)	Positive Response	D (%)	SD (%)	Negative Response
1.	Exposing adolescent female to sex education early gives them confidence to confide their sexual life with their parent.	154 (40.1)	133 (34.6)	287	53 (13.8)	44 (11.5)	94
2.	Direct or indirect sex education from parents to daughter increased parent-daughter healthy relationship.	222 (57.8)	145 (37.8)	367	10 (2.6)	07 (1.8)	17
3.	Appropriate sex education from parent to daughter breeds trust from parents to their daughter.	199 (51.8)	181 (47.1)	380	04 (1.0)	00 (0.0)	04
4.	Sex education enlighten adolescent female to see their parents as the most trusted person with regards to sexual challenges.	187 (48.7)	187 (48.7)	374	08 (2.1)	02 (0.5)	10
	<b>X</b>			<b>352 (91.6%)</b>			<b>32 (8.4%)</b>

Table 1 shows the answer to Research Question One. The mean of positive responses by the residents to the items is 352 (91.6%) which is greater than the mean of negative responses, 32 (8.4%). This implies that female adolescents agreed that sex education influences improved parent-daughter relationship in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Research Question Two:** Will delayed sexual gratification be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State?

**Table 2: Percentile Analysis of Delayed Sexual Gratification as an Influence of Sex Education**

S/N	ITEMS	SA (%)	A (%)	Positive Response	D (%)	SD (%)	Negative Response
1.	Appropriate sex education open females eye to why and how they can control their sexual desire.	165 (42.9)	140 (36.5)	305	50 (13.0)	29 (7.6)	79
2.	Female who have sex education at early age will not have sex until marriage.	202 (52.6)	170 (44.3)	372	09 (2.3)	03 (0.8)	12
3.	Sex education exposed female to risk of sexual related diseases which may caution them against early exposure.	185 (48.2)	172 (44.8)	357	20 (5.2)	07 (1.8)	27
4.	Sex education emphasis on consent and communication which lead to delay sex.	190 (49.5)	190 (49.5)	380	02 (0.5)	02 (0.5)	04
	<b>X</b>			<b>353.5 (92.1)</b>			<b>30.5 (7.9)</b>

Table 2 shows the answer to Research Question Two. The mean of positive responses by the residents to the items is 353.5 (92.1%) which is greater than the mean of negative responses, 30.5 (7.9%). This implies that female adolescents agreed that sex education influences delayed sexual gratification in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Hypotheses Testing**

**Hypothesis One:** Improved parent-daughter relationship will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Table 3: Chi-square (X<sup>2</sup>) analysis showing Improved Parent-Daughter Relationship as an Influence of Sex Education**

S/N	STATEMENT	SA	A	D	SD	Df	Cal. Value	Table Value	Remarks
1	Exposing adolescent female to sex education early gives them confidence to confide their sexual life with their parent.	154 (40.1%)	133 (34.6%)	53 (13.8%)	44 (11.5%)				
2	Direct or indirect sex education from parents to daughter increased parent-daughter healthy relationship.	222 (57.8%)	145 (37.8%)	10 (2.6%)	07 (1.8%)				
3	Appropriate sex education from parent to daughter breeds trust from parents to their daughter.	199 (51.8%)	181 (47.1%)	04 (1.0%)	00 (0.0%)	09	207.268	16.919	HO <sub>1</sub> rejected
4	Sex education enlighten adolescent female to see their parents as the most trusted person with regards to sexual challenges.	187 (48.7%)	187 (48.7%)	08 (2.1%)	02 (0.5%)				
<b>Column Total</b>		762	646	75	53				

P < 0.05

Table 3 above showed that majority of the respondents agreed that sex education influences improved parent-daughter relationship. Also, the critical value of 207.268 is greater than the table value of 16.919 at 0.05 alpha level at the degree of freedom of 9. Therefore, the null hypothesis (HO<sub>1</sub>) was rejected. Hence, sex education influences improved parent-daughter relationship in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Hypothesis Two:** Delayed sexual gratification will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Table 4: Chi-square ( $X^2$ ) analysis showing Delayed Sexual Gratification as an Influence of Sex Education.**

S/N	STATEMENT	SA	A	D	SD	Df	Cal. Value	Table Value	Remarks
1	Appropriate sex education open females eye to why and how they can control their sexual desire.	165 (42.9%)	140 (36.5%)	50 (13.0%)	29 (7.6%)				
2	Female who have sex education at early age will not have sex until marriage.	202 (52.6%)	170 (44.3%)	09 (2.3%)	03 (0.8%)				
3	Sex education exposed female to risk of sexual related diseases which may caution them against early exposure.	185 (48.2%)	172 (44.8%)	20 (5.2%)	07 (1.8%)	<b>09</b>	<b>125.015</b>	<b>16.919</b>	<b>HO<sub>2</sub> rejected</b>
4	Sex education emphasis on consent and communication which lead to delay sex	190 (49.5%)	190 (49.5%)	02 (0.5%)	02 (0.5%)				
		742	672	81	41				

**Column Total**

P < 0.05

Table 4 above showed that majority of the respondents agreed that sex education influences delayed sexual gratification. Also, the critical value of 125.015 is greater than the table value of 16.919 at 0.05 alpha level at the degree of freedom of 9. Therefore, the null hypothesis (HO<sub>2</sub>) was rejected. Hence, sex education influences delayed sexual gratification in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

**Discussion of the Findings**

**Hypothesis one:** stated that improved parent-daughter relationship will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. This hypothesis was rejected because the calculated value of 207.268 is greater than the table value of 16.919 at 0.05 alpha level at the degree of freedom of 9. Hence, sex education influences improved parent-daughter relationship in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. This is in line with the finding of recent Malaysian study among healthcare providers reported that parents are responsible for nurturing their children and teaching them about good behaviors, which include matters related to their sexuality. This is because effective parental communication or being responsive to the potential risks to their children's sexual health may help delay their sexual intercourse intention (Irwin, 2006).

**Hypothesis two:** stated that delayed sexual gratification will not significantly be an influence of sex education in curbing social vices among female adolescents in Ilorin West Local

Government Area, Kwara State. This hypothesis was rejected because the calculated value of 125.015 is greater than the table value of 16.919 at 0.05 alpha level at the degree of freedom of 9. Hence, sex education influences delayed sexual gratification in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State. This is in line with the assertion of Lukman (2021) which states that sex education goes beyond the physical aspects of sex, encompassing emotional intelligence and relationship dynamics. Understanding the emotional consequences of sexual activities, including potential heartbreak and relationship complexities, encourages individuals to approach intimacy with a mature and thoughtful mindset. By fostering emotional intelligence, sex education contributes to delayed gratification by prompting individuals to consider the long-term implications of their choices.

### Conclusion

Based on the results of the study, the following conclusions are drawn:

1. Sex education influences improved parent-daughter relationship in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.
2. Sex education influences delayed sexual gratification in curbing social vices among female adolescents in Ilorin West Local Government Area, Kwara State.

### Recommendation

Based on the findings of the study, the following recommendations were made:

1. School should implement and support parent involved sex education programs in schools and communities in Ilorin West Local Government Area to enhance parent-daughter relationships, thereby reducing social vices among female adolescents.
2. Emphasize the importance of sex education that includes discussions on delayed sexual gratification, fostering responsible behavior among female adolescents and mitigating social vices in Ilorin West Local Government Area.

### References

- Adedini, S. A., Mobolaji, J. W., Alabi, M. & Fatusi, A. O. (2021). Changes in Contraceptive and Sexual Behaviours among Unmarried Young People in Nigeria: Evidence from Nationally Representatives Surveys Evidence from Nationally Representatives Surveys, *PLoS One*, (16), 2,
- Adekola, P. O., Azuh, D. Adeloye, D. & Amoo, E. (2019). Urban Renewal in Nigeria. A Slash and Burn Approach? *Environment, Development and Sustainability*, 21(5), 2165–2182.
- Adepoju, A. (2015). *Sexuality and Life Skills Education*. London: PenPress Publishers.
- Amoo, E. O. (2020). Family Formation in Africa: Trends in Age at Marriage, Union Types, Patterns and Determinants. *Family Demography and Post-2015 Development Agenda in Africa*, Springer, Cham, Switzerland, 99–125.
- Ankomah, A., Mamman, D. F., Omoregie, G. & Anyanti, J. (2011). Reasons for Delaying or Engaging in Early Sexual Initiation among Adolescents in Nigeria. *Adolescents Health Medical Therapy*, 9(2), 75-84.
- Breuner, C. C., Mattson, G., Adelman, W. P. (2016). Sexuality Education for Children and Adolescents Education for Children and Adolescents, *Pediatrics*, (138), 2.
- Durowade, K. A., Babatunde, O. A., Omokany, L. O. (2017). Early Sexual Debut: Prevalence and Risk Factors among Secondary School Students in Ido-Ekiti, Ekiti State, South-West Nigeria. *African Health Sciences*, 17(3), 614–622.

- Irwin, C. E. (2006). Beyond Abstinence: What we need to do to Decrease the Risk of Sexual Behavior during Adolescence. *Journal of Adolescents Health*, (38), 165–168.
- Izugbara, C. O. & Nwabuwale, M. F. (2017). Risks and Benefits of Multiple Sexual Partnerships: Beliefs of Rural Nigerian Adolescent Males. *American Journal of Men's Health*, 1(3), 197–207.
- Lukman, J. (2021). Prevalence of Moral Decadence among Youths in Kaduna North Local Government Area, Kaduna State. *KIU Journal of Humanities*, 6(1), 161-169.
- Mbugua, N. (2017). Factors Inhibiting Educated Mothers in Kenya from giving Meaningful Sex-Education to their Daughters. *Social Science Medicine*, (64), 1079-1089.
- Obiekea, P., Ovri, F. & Chukwuma, E. (2013). Sexual Education: An Intervention and Social Adjustment Programme for Youths in Secondary Education in Nigeria Education: *African Research Review*, 7(1), 322–339.
- Robin, L. C. (2012). Research Findings on Programmes to Reduce Teen Pregnancy. *Journal of Health*, 7(2), 33-41.
- Romero, E. E., González, J. E., Mesa, F. C. & García, G. I. (2014). Gender-based Differences in the High-risk Sexual Behaviours of Young People Aged 15-29 in Melilla (Spain): A Cross-sectional Study a Cross-sectional Study, *BMC Public Health*, (14), 1.
- Sule, H. A., Akor, J. A., Suleiman, R. O., Akpihi, L. & Ali O. U. (2015). Impact of Sex Education in Kogi State, Nigeria. *Journal of Education and Practice*, 6(3) 34-41.
- Todd, J., Cremin, I. & Mcgrath, T. (2019). Reported Number of Sexual Partners: Comparison of Data from Four African Longitudinal Studies, *Sexually Transmitted Infections*, 85.
- World Bank Group. (2021). Adolescent Fertility Rate (Births Per 1,000 Women Ages 15–19) Nigeria, World Bank Group, Washington, DC, USA

## EFFECT OF MARITAL COUNSELLING ON MARITAL STABILITY AMONG MARRIED COUPLES IN IMO STATE, NIGERIA

**Oparaduru, John Onyemauche**

National Open University of Nigeria

Faculty of Education,

Department of Educational Foundations.

ooparaduru@noun.edu.ng / oparadurujohn@gmail.com, 08035807628

### Abstract

*In Imo State, unstable marriages have become a concern in recent years. This is because unstable family and marital relationships impact the individual's demographic, social, and economic characteristics. Therefore, the study examined how Marriage counselling affected marital stability in Imo State, Nigeria. Three research questions and three null hypotheses served as the study's compass. A quasi-experimental pre-test post-test control group approach was used in the investigation. Based on the 618 married couples with education who comprised 5% of the population and qualified for the study, the sample size was 120 married couples. Using simple and stratified random sampling approaches, participants were chosen from Christian and Muslim organizations in the Eastern Senatorial District. Data for the study were gathered using a self-created questionnaire called the Marital Counseling and Marital Stability Questionnaire (MCMSQ). The mean and standard deviation were used to answer the study questions, and Analysis of Covariance (ANCOVA) was used to evaluate the hypotheses at the 0.05 significance level. The study's findings showed a noteworthy distinction between the experimental and Control groups on a post-test measure of married couples' marital stability. The experimental and Control groups differed significantly in terms of couples' ability to stay in touch with one another. Based on the findings, it is advised that couples seeking marital counselling, regardless of stage of the relationship, prioritize communication, mutual trust, respect, money management, and avoiding outside influence.*

**Keywords:** Marriage, Marital Counselling, Marital Stability, Married couples

### Background to the Study

Research has examined the need for skill development in preventing marital unhappiness and breakdown, emphasizing the potential efficacy of interventions in fostering marital stability (Markman, Remick, Floyd, Stanley & Clements, 1993; Samuel & Alene, 2021; Cornelius, Alessi, & Shorey, 2007). Training in communication skills has also been linked to increased marital happiness; the training's efficacy is influenced by the themes chosen for conversation (Okojide, Adekeye & Adejumo, 2021). Furthermore, it has been shown that personality traits, gender, psychological well-being, and religiosity predict marital stability and satisfaction, demonstrating the intricate interaction of interpersonal and individual elements in marriages (Dike-Aghany, Okpala, Enike, & Iwudo (2019). Pre-marital counselling has also been identified as a family therapy focal area, indicating its potential to address marital concerns and foster stability. In front of at least two witnesses, a man and a woman consent to live together as husband and wife for the rest of their lives during the social procedure known as Marriage. According to Dike-Aghanya, Okpala, Enike, and Iwudo (2019), "marriage" is the agreement between a man and a woman to live together as husband and wife after completing the dowry payment ritual. He emphasized further that, for a customary marriage to be considered lawful,

there must be (1) an agreement between the parties, (2) a formal introduction of the two families, (3) the payment of a dowry or bride price to the prospective bride's parents; and (4) a ceremony wherein the woman is given to the man's family. For this reason, couples must have marital counselling for any marriage to succeed. This implies that problems, roadblocks, disputes, and misunderstandings may arise between partners at different times in married relationships. This highlights how crucial counselling is for the participating couples. To prevent or manage crises and conflicts that can occasionally lead to divorce, separation, shattered households, violence against women or men, child neglect, and other grave problems of intramarital conflicts, counselling is an essential component of Marriage for both parties. The degree to which these marriages succeed in therapy significantly determines their longevity. Numerous elements have the potential to impact marriages. "Such issues are lack of sexual fulfilment, childlessness, communication gap, in-law influence, and poverty, among others Cornelius, Alessi, and Storey (2007). These elements may lead to crises and disputes that harm marriages, including abandonment, carelessness, ill-intentioned beatings, child abuse, fleeing, assault, disobedience, and several other aspects of Marriage. Nonetheless, several beneficial elements reinforce married relationships, such as open communication and marital closeness. "Marital instability is on the rise, and the community requires efficient and effective marital counsellors to tackle these problems before they get out of control," claim Samuel and Alene (2021). Also, according to Oparaduru (2021), couples initially hold one another in high regard and may be filled with happiness. Each is firmly committed to satisfying and fostering love and affectionate feelings for the individual with whom they will soon share a lifelong companion. The author said that over time, things begin to cool off, and the once-warm and romantic relationship begins to fade since they may live in a chaotic environment full of hate, confusion, and fear that causes continual conflict.

Oputa (2003) noted that "marital stability is necessary. This is because happy marriages inevitably result in harmony between the partners. Oputa (2003) contends that it is impossible to ignore or wish away marital instability, mainly when it affects children. It must be managed and put to rest since unresolved animosity between the parties leads to discord and a lack of marriage harmony. Oputa (2003) claims that balance fosters the progress and development of marriages. Oputa, (2003) observed that disagreements inside weddings had led to violence against spouses, divorce, and separation. Occasionally, children would rebel against their father by organizing with their mother. There will never be progress and tranquillity if there is ongoing discord, disarray, and separation between the couples in the family—unrelenting strife results in broken homes, which breed criminals and young offenders in the community. Children from dysfunctional families' experience educational regression and may become dropouts due to their inability to handle home problems and schoolwork. It is impossible to expect children to grow up with a balanced personality when the home or family is unstable and plagued by interpersonal conflicts. Conflicts can result in spouses divorcing and mistreating their children on multiple levels, as Omeje (2000) correctly pointed out (socially, morally, physically and emotionally). He asserts that no marriage is perfect. Thus, some couples attempt to get along with one another to prevent arguments in the home, while other couples don't get along, and that leads to marital strife.

Omeje (2000) correctly noted that "difficulties could lead to couples' separation, divorce, and maltreatment of multi-dimensional children" (socially, morally, physically and emotionally). He maintained that no marriage is a bed of roses. Thus, some couples attempt to get along with one another to prevent marital problems at home, while other couples don't get along, leading to

marital conflict. Oputa (2003) states, "Persuasion, communication, tolerance, cooperation, and mutual understanding are all necessary for marital stability." The resolution of conflicts does not entail the use of coercion or violence. There is no use of force, hostility, rivalry, or avoidance. When there is a family dispute or marital conflict, the individuals involved should treat each other respectfully and discuss the concerns and guiding principles (Samuel & Alene, 2021). This implies that family mediation should be used to resolve marital disputes amicably. Lack of stability in family and matrimonial ties has relevant consequences on demographic, social and economic nature for the persons involved (Onabamiro et al., 2017). Both the children of separated or divorced couples as well as their wellness, are negatively impacted (Oparaduru, 2021). The factors above may also contribute to a rise in female poverty. Scholars have noted that based on personal observation, marriage relationships have been strained recently, especially among couples. However, academics, professional religious organizations, churches, and mosques have tried to stop this threat. However, the prevalence of marital instability and discord appears widespread. In their attempt to offer remedies, academics, educators, and counsellors are at a loss for what possibilities there are for determining the causes of this circumstance. Oparaduru's interactions with most couples have demonstrated that unstable marriages can have an impact on society, as evidenced by the high divorce rate and the direct effects on children, who typically become troublemakers and social outcasts (Oparaduru, 2021). It looks like this is a national issue. One starts to question if couples received counselling before being married. This situation has a significant effect on the family's stability and has an impact on the children's personalities, growth, and adjustment. When problems or tensions spiral out of Control in their relationships, the majority of married couples who experience marital instability report to church ministers, in-law parents, matrimonial counsellors, and family elders. Depending on the interests of the persons involved and the degree of counselling behaviour in the Marriage, these various organizations may be able to resolve stability issues in marriages at times.

According to Okojide, Adekeye, and Adejumo (2021), "marital satisfaction and success in marital affairs are positively associated with an individual's involvement in resolving his or her marital difficulties such as instability in marriage, lack of trust, and poor communication." These results highlight how crucial it is to take into account a variety of marital dynamics factors, such as communication, sexual gratification, psychological health, and individual characteristics, to comprehend the context of the impact of marital counselling on the stability of marriages among married couples in Imo State, Nigeria. The history of this subject is intricate and varied overall, covering contextual, interpersonal, and individual elements that support stable and happy marriages.

### **Statement of the Problem**

One of the most critical aspects of family life is marital stability, which profoundly affects people's and society's well-being. The references offer insightful information about the variables affecting marital stability and the possible effects of marital counselling on this stability. Research has demonstrated the tight relationship between health and marital quality; a meta-analysis of 126 empirical publications published over the previous 50 years revealed relationships between almost 72,000 people's physical health and the quality of their marriages (Robles, Slatcher, Trombello, 2014). In Imo State, unstable marriages have become a concern in recent years. This is because issues have typically been settled amicably and swiftly to avoid crises, leading to emotional turmoil and unstable marriages. This situation makes people afraid and keeps couples from building solid marriages. Furthermore, a study conducted in Lagos State,

Nigeria, demonstrated the importance of psychological well-being as a predictor of women's marital stability (Okojide et al., 2021). Moreover, a study in Imo State, Nigeria, showed how Marriage counselling affected women's attitudes regarding stable marriages (Dimkpa, 2011).

Furthermore, research on the connection between sexual satisfaction, marital quality, and marital instability shows that, over time, higher levels of sexual satisfaction can result in both higher levels of marriage quality and lower levels of marital instability (Yeh, Lorenz, Wickrama, Conger, & Elder, 2006). Furthermore, studies have looked into how pre-marital sexual counselling affects newlywed women's self-efficacy and sexual function, highlighting the possible impact of counselling on marital dynamics (Sheikhi, Moghadam, & Navidian, 2019). Even if these references offer insightful information about the variables impacting marital stability, it is crucial to consider the cultural and geographic context. Research in Nigeria's Imo State and other pertinent areas can provide unique insights into the nature of marriage partnerships in these communities. As a result, it's critical to research how marriage counselling affects married couples' stability in Imo State, Nigeria.

### **Purpose of the Study**

The general purpose of the study was to find out the effect of marital counseling on marital stability among couples in Imo State, Nigeria. Specifically, the study aimed to:

1. Analyze married couples' marital stability variations between the experimental and Control groups.
2. Analyze the variations in pair communication between the experimental and Control groups.
3. Ascertain the variation in married couples' marital trust between the experimental and Control groups.

### **Research Questions**

The following research questions were raised to guide the study.

1. What is the difference in married couples' marital stability between the experimental and Control groups?
2. What is the difference between the mean scores of the experimental and Control groups regarding the maintenance of communication in couples?
3. What is the difference in married couples' levels of marital trust between the experimental and Control groups?

**Research Hypotheses:** The following research hypotheses guided the study.

**H<sub>01</sub>:** Married couples' marital stability does not significantly differ between the experimental and Control groups.

**H<sub>02</sub>:** The means of the experimental and Control groups for couples' ability to maintain communication do not significantly differ.

**H<sub>03</sub>:** There is no significant difference between the experimental and Control groups on marital trust among married couples.

### **Methodology**

The methodology of this work will comprise Research Design, Population, Sample and Sampling Procedure, Instrumentation, Validity, Reliability, Treatment Procedure, and Method of Data Analysis.

## Research Design

The design of the investigation was quasi-experimental. In particular, a pretest-posttest control group design was used in the study. According to Nworgu (2015), a quasi-experimental design entails subjecting the experimental group to treatment conditions and evaluating the variations between the treatment and control groups. This study's design is rated suitable because it included pre-tests and post-tests for both the experimental and Control groups, and the post-test revealed differences in marital stability. Here is how the design is symbolized symbolically:

$$\begin{array}{ccc} O_1 & X_1 & O_2 \\ \hline O_1 & \approx & O_2 \end{array}$$

Fig. 1. A quasi-experimental design: The nonequivalent control group design

Source: Nworgu (2015)

Where:

$O_1$  = refers to pre-test

$O_2$  = refers to post-test

$X_1$  = refers to treatment given to the experimental group

$\approx$  = refers to no treatment for the Control group

A dashed line separates two rows of nonequivalent groups.

## Population

The population for this study comprised all registered and educated married couples between four and twenty-five years in Marriage, numbering 13,367, as obtained from the magistrate court Owerri Imo state. The target population in this work included all literate couples in Pentecostal and Orthodox churches and Mosques in the State.

## Sample and Sampling Procedure

One hundred twenty (120) married couples who satisfied the requirement of having been together for four to twenty-five years made up the sample (4-25 years). This is justified by the expectation that these groups of people would comprehend concerns related to marital stability or not as well. Couples who had been married for more than 25 years were exempt since, in contrast to those who had only been married for 25 years, they had to have stabilized their relationship. For the investigation, a multi-stage sampling approach was used. In the first stage, one local government area from the Imo senatorial district of Imo state was chosen using a straightforward random sampling procedure. A simple random sampling procedure was employed to ensure that every local government area had an equal chance of being used for the study. In the second stage, a purposive sample technique was used to choose just those couples who had registered their marriages and remained together for up to 25 years. In the third phase, the study only included couples who had attended the marital counselling session throughout treatment.

## Instrumentation

Data for this study were gathered using the Marital Counseling and Stability Questionnaire (MCSQ). It comprised thirty (30) pieces arranged in three clusters, A through C. With ten items, Cluster A examined the stability of marriages between couples, Cluster B examined communication between couples, and Cluster C examined marital trust. A four-point modified

Likert scale, with SA standing for "strongly agree," A for "agree," D for "disagree," and SD for "strongly disagree," was used for the instrument's items. Disagree with numerical values of 4, 3, 2 and 1, respectively.

### **Validity**

The researcher subjected the instrument to experts' judgment to ascertain their face validity (experts in Test and Measurement and Guidance Counselling). Corrections were made based on the suggestions made by the experts. The consensus validity of the two experts yielded 0.78. Hence, the instrument was considered adequate for the study.

### **Reliability**

The instrument's reliability was ascertained using the Cronbach Alpha method, and an overall reliability coefficient of 0.82 was obtained. This showed that the instrument was reliable and was used for the study.

### **Treatment Procedure**

Three stages of data collection were conducted for the quasi-experiment: the pre-treatment, treatment, and post-treatment phases. There were 120 individuals in total—60 for the Control Group and 60 for the Experimental Group—in the study (Marital Counselling). To prevent interactions that could have interfered with the results, separate locations were utilized for the Treatment and Control Groups. The researcher gathered the participants, or clients, in a single event centre hall with the help of religious leaders who served as study assistants. The researcher then discussed the reason for the gathering and the advantages the clients would experience from the counselling sessions.

Similarly, the participants were assured that whatever secrets they divulged would remain private. Six sessions were planned by the researcher for the Treatment and Control Groups. Without interfering with the clients' regular daily activities, the researcher and the clients coordinated and decided on each counselling session's days, times, and locations. The maximum duration of each counselling session was sixty minutes.

The Treatment Group was the subject of the Treatment Phase (Marital Counselling). For six weeks in a row, once-a-week counselling sessions were held; this meant that there were six sessions for each of the Control and Experimental Groups. The post-treatment phase marked the end of the six (6) weeks of treatment given to the participants. At this end, the participants were re-tested with the same instrument they were tested with during the pre-treatment period, which determined the effectiveness of the counselling after the treatment. This refers to the Post-test phase. Each treatment was taken once a week, during which different counselling skills were used to enhance marital stability. The control group received no formal treatment using the marital counselling skills. However, those who were subjected to the therapy of counselling skills manifested more stability in the marriage than their counterpart from the control group.

### **Method of Data Analysis**

The data collected for this study were subjected to descriptive and inferential statistical analysis. The research questions were addressed using the mean and standard deviations, and the research hypotheses resulting from the research questions were tested at the 0.05 significance level using Analysis of Covariance (ANCOVA).

**Results**

**Research Question One:** What is the difference in the post-test means scores of married couples' marital stability between the experimental and Control groups?

The difference between the means of the experimental and Control groups' scores on married couples' marital stability is displayed in Table 1. The experimental group's pre-test mean rating was 25.37, with a standard deviation of 4.54, and its post-test mean rating was 34.90, with a standard deviation of 2.42, according to the data. There was a 9.53 mean difference. Additionally, the control group's pre-test mean rating was 22.47 with a 5.23 standard deviation, and its post-test mean was 22.47.

**Table 1. Examination of the variations in the means of the experimental and Control groups' ratings for married couples' marital stability**

Group	N	Pretest		Posttest		Mean difference
			SD		SD	
Experimental group	60	25.37	4.54	34.90	2.42	9.53
Control group	60	22.47	5.23	28.97	3.25	6.50

The score was 28.97 and a 3.25 standard deviation. 6.50 was the mean difference. These indicate that the experimental group benefits more from the counselling session regarding marital stability.

**Hypothesis One**

**H<sub>01</sub>:** Married couples' marital stability does not significantly differ between the experimental and Control groups.

The findings shown in Table 2 indicate a significant difference in the mean assessments of the experimental and Control groups on marital stability among couples, with an F-ratio of  $f(1,119) = 124.275$ ,  $P < 0.05$ ,  $\eta^2_p = 0.515$ . Given that independent variables (marital counselling). Consequently, multiplying the partial eta squared value by 100 to translate it to a percentage yields 51.1 per cent, meaning 51.1 per cent of the variance in marital stability.

**Table 2. An analysis of covariance (ANCOVA) comparing the mean ratings of the experimental and Control groups on married couples' marital stability**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Remark
Corrected Model	1064.709 <sup>a</sup>	2	532.355	64.695	0.00	0.525	
Intercept	5258.051	1	5258.051	638.990	0.00	0.845	
pretestStab	8.576	1	8.576	1.042	0.30	0.009	
Groups	1022.624	1	1022.624	124.275	0.00	0.515	S
Error	962.757	117	8.229				
Total	124396.000	120					
Corrected Total	2027.467	119					

The study's additional findings demonstrate that the effect size—represented by the matching partial eta squared value of 0.515—indicates the proportion of variance in the dependent variable, marital stability, that can be attributed to married couples' stability.

**Research Question Two:** What is the difference between the means scores of the experimental and Control groups regarding the maintenance of communication in couples?

**Table 3: Analysis of how the experimental and Control groups differ in their means scores on maintaining communication among couples**

Group	N	Pretest		Posttest		Mean difference
			SD		SD	
Experimental group	60	24.23	4.07	34.47	2.90	10.24
Control group	60	22.00	5.24	28.02	3.10	6.02

The difference between the means scores of the experimental and Control groups on married couples' communication maintenance is displayed in Table 3. According to the data, the experimental group's pre-test mean rating was 24.23, with a standard deviation of 4.07, and its post-test mean rating was 34.47, with a standard deviation of 2.90. 10.24 was the mean difference. According to the results, the control group's pre-test mean rating was 22.00 with a 5.24 standard deviation, and its post-test mean rating was 28.02 with a 3.10 standard deviation. 6.02 was the average difference. Following a counselling session, married couples' ability to maintain marital communication improved more in the experimental group than in the control group. This indicates that the counselling was successful in keeping married couples in contact. The null hypothesis was rejected because the associated probability value of 0.00 was less than the significance level of 0.05. The conclusion that can be made from this is that there is a noteworthy distinction between the experimental and Control groups' mean scores on the post-test measure of marital stability among married couples.

### Hypothesis Two

**H<sub>02</sub>:** The means of the experimental and Control groups for couples' ability to maintain communication do not significantly differ.

The results in Table 4 demonstrate that there was a significant difference in the mean assessments of the experimental and Control groups on married couples' ability to maintain marital communication, with an F-ratio of 2  $f(1, 119) = 128.286$ ,  $P < 0.05$ ,  $\eta^2 p = 0.523$ . The null hypothesis was rejected because the associated probability value of 0.00 was less than the significance level of 0.05. It can be concluded, therefore, that there is a statistically significant difference between the experimental and Control groups' mean scores on the post-test measure of married couples' ability to maintain marital communication. The research findings additionally demonstrate that the effect size, denoted by the matching partial eta squared value of 0.523, represents the extent to which the independent variables account for variance in the dependent variable (maintaining marital communication) (marital counselling), after multiplying the partial eta squared value by 100 to convert it to a percentage, 52.3 per cent is obtained. This means the research can explain 52.3 per cent of the variance in married couples' ability to maintain marital communication.

**Table 4. Analysis of the Covariance (ANCOVA) comparing the experimental and Control groups' mean ratings of married couple's ability to maintain communication**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Remark
Corrected Model	1248.644 <sup>a</sup>	2	624.322	68.565	0.00	0.540	
Intercept	4465.701	1	4465.701	490.438	0.00	0.807	
PretestCom	.569	1	.569	.062	0.80	0.001	
Groups	1168.116	1	1168.116	128.286	0.00	0.523	S
Error	1065.348	117	9.106				
<b>Total</b>	<b>119439.000</b>	<b>120</b>					
<b>Corrected Total</b>	<b>2313.992</b>	<b>119</b>					

**Research Question Three:** What is the difference in married couples' levels of marital trust between the experimental and Control groups?

**Table 5. Analysis of the variations in married couples' marital trust levels between the experimental and Control groups**

Group	N	Pretest		Posttest		Mean difference
			SD		SD	
Experimental group	60	25.35	3.85	35.08	2.73	9.73
Control group	60	23.88	4.15	29.08	3.16	5.20

The difference between the means of the experimental and Control groups' scores on marital trust among married couples is displayed in Table 5. The experimental group's pre-test mean rating was 25.35, with a standard deviation of 3.85, and its post-test mean rating was 35.08, with a standard deviation of 2.73, according to the data. 9.73 was the mean difference. According to the results, the control group's pre-test mean rating was 23.88 with a standard deviation of 4.15, and its post-test mean rating was 29.08 with a standard deviation 3.16. There was a 5.20 mean difference. These indicate that the experimental group benefited more from the counselling session regarding marital trust among married couples than the control group. This shows that the counselling successfully kept married couples' trust in one another.

**H03:** There is no significant difference between the experimental and Control groups on marital trust among married couples.

**Table 6. Analysis of the Covariance (ANCOVA) comparing the experimental and Control groups' mean ratings of married couples' ability to preserve marital trust**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Remark
Corrected Model	1084.384 <sup>a</sup>	2	542.192	61.782	0.00	0.514	
Intercept	3374.380	1	3374.380	384.504	0.00	0.767	
Pre-test Trust	4.384	1	4.384	.500	0.48	0.004	
Groups	1069.146	1	1069.146	121.827	0.00	0.510	S
<b>Error Total</b>	<b>1026.783</b>	<b>117</b>	<b>8.776</b>				
	<b>125632.000</b>	<b>120</b>					
<b>Corrected Total</b>	<b>2111.167</b>	<b>119</b>					

The findings shown in Table 6 indicate that there was a significant difference in the mean ratings of the experimental and Control groups on preserving marital trust among married couples, with an F-ratio of  $F(1,119) = 121.827, P < 0.05, \eta^2 = 0.510$ . The null hypothesis was rejected because the associated probability value of 0.00 was less than the significance level of 0.05. The conclusion that can be made from this is that there is a noteworthy distinction between the experimental and Control groups' mean ratings on the post-test measure of married couples' ability to preserve marital trust. The research findings additionally demonstrate that the impact size, denoted by the matching partial eta squared value of 0.510, represents the extent to which the independent variables account for variance in the dependent variable (preserving marital trust) (marital counselling). When the partial eta squared value is multiplied by 100 to convert it to a percentage, 51 per cent is obtained. This means the research can explain 51% of the variation in married couples' ability to preserve marital trust.

**Discussion of Findings**

The study's findings on married couples' marital stability showed that the experimental group benefited more from the counselling session than the control group. This is because, whilst

the control group did not receive counselling, the experimental group did. This demonstrated the high efficacy of Marriage counselling in preserving marital stability in married couples. The study's first hypothesis test resulted in a statistically significant difference between the experimental and Control groups' mean evaluations on a post-test measure of married couples' ability to preserve marital stability. This suggests that married couples should not undervalue the importance of attending marital counselling sessions to maintain peace in the house. According to Dimkpa (2011), "marital counselling is vital because it prevents marital problems from degenerating into a total collapse of the marriages and emergence of deviant children from such marriages," the study's findings are consistent with her findings.

Additionally, it guarantees that none of the parties to the disputes will experience harm to their reputation. According to Ntoimo and Akokuwebe (2014), "Marital instability is increasing, and society requires efficient and competent marital counsellors to treat these problems before they get out of control." The study's findings support their viewpoint.

The results indicated a substantial difference between the experimental and Control groups regarding married couples' ability to maintain marital communication. In contrast to the control group, communication was revealed to be a significant predictor of marital stability during the marriage counselling session. This demonstrated the high efficacy of Marriage counselling in preserving marital stability in married couples. The study's first hypothesis test resulted in a statistically significant difference between the experimental and Control groups' mean evaluations on a post-test measure of married couples' ability to preserve marital stability. This suggests that married couples should not undervalue the importance of attending marital counselling sessions to maintain peace in the house. The study's findings concur with Samuel and Alene (2021), who discovered that "marriage counselling is essential because it keeps disagreements between partners from collapsing and producing abnormal offspring."

Additionally, it guarantees that none of the parties involved in the disputes will experience harm to their self-esteem. Ntoimo and Akokuwebe (2014) assert that "marital instability is increasing, and society requires efficient and effective marital counsellors to handle these problems before they get out of control." The study's findings support this assertion.

The results indicated a substantial difference between the experimental and Control groups regarding married couples' ability to maintain marital communication. Marital stability was found to be significantly influenced by communication in married couples. There is statistical importance in trust. The research findings indicate a statistically significant difference between the experimental and Control groups concerning the maintenance of marital communication in married couples. A critical factor in determining the stability of married couples' marriages was discovered to be communication. Statistics show that trust matters. This outcome validates the belief held by numerous academics that every Marriage's success hinges on the level of trust, which is supported by couples. Couples should attend orientation, trust-building seminars, and other events. This means that in workshops and symposiums where there is no trust, there is bound to be government and other NGOs on the need for instability in the Marriage, and this is bound to maintain financial management, which affects the relationship negatively. The couples' findings are consistent with those of Onabamiro et al. (2017) for couples in the exact study location. The researchers also noticed that, following the counselling session, the group receiving marital counselling had resolved their issues related to marital communication.

In contrast, the individuals in the control group reported only minor changes in their communication experiences before and following the experiment. The findings contradict those

of Maciver and Dimkpa (2011), who discovered no discernible relationship between communication and marriage stability or duration. In agreement with the present result of Cornelius, Alessi and Shorey (2007), which showed that "communication is a strong determinant of marital instability and finally, communication strategy among married couples may trigger negative feeling such as events and issues confronting their family and may stir up negative emotions (such as anxiety, worries, fears and so on) which may likely stir up or ginger feelings for quitting a marriage relationship". Okojide, Adekeye, and Adejumo (2021) study discovered a positive statistically significant relationship between trust and marital stability.

### Conclusion

The study's findings indicated that poor communication and a lack of trust between married couples impact marital stability. It was also determined that the length of the participants' marital counselling sessions improved married couples' communication, trust, and marital stability. The survey also found that among the traits of a stable marriage and happy family are good communication and trust between married couples.

### Recommendations

Based on the findings, the following. 3 recommendations were drawn:

1. All married couples must get orientation regarding the need to preserve marital stability. Their married lives will be improved as a result.
2. Couples should communicate harmoniously and consistently, according to the various denominations (Churches and Mosques). This will support couples in their marriages by promoting harmony and understanding.
3. Regarding preserving marital trust and respect among couples, counsellors, ministers, and clerics in churches and mosques should keep an eye on trust and understanding.

### References

- Cornelius, T. L., Alessi, G., & Shorey, R. C. (2007). The effectiveness of communication skills training with married couples: does the issue discussed matter? *The Family Journal*, 15(2), 124-132. <https://doi.org/10.1177/1066480706297971>
- Dike-Aghanya, A. A., Okpala, O. M., Enike, T. C., & Iwudo, C. M. (2019). Religiosity, gender and personality traits as predictors of marital satisfaction among Christian couples. *Ibadan Journal of the Social Sciences*, 17(1). <https://doi.org/10.36108/ijss/9102.71.0120>
- Dimkpa, I. (2011). Effect of marital counselling on women' 's attitude towards marital stability. *Edo Journal of Counselling*, 3(2). <https://doi.org/10.4314/ejc.v3i2.63600>
- Kelly, E. and Conley, J. J. (1987). Personality and compatibility: a prospective analysis of marital stability and marital satisfaction. *Journal of Personality and Social Psychology*, 52(1), 27-40. <https://doi.org/10.1037/0022-3514.52.1.27>
- Markman, H. J., Renick, M. J., Floyd, F. J., Stanley, S. M., & Clements, M. (1993). Preventing marital distress through communication and conflict management training: a 4- and 5-year follow-up. *Journal of Consulting and Clinical Psychology*, 61(1), 70-77. <https://doi.org/10.1037/0022-006x.61.1.70>
- Ntoimo, L. and Akokuwebe, M. E. (2014). Prevalence and patterns of marital dissolution in Nigeria. *The Nigerian Journal of Sociology and Anthropology*, 12(2). [https://doi.org/10.36108/njsa/4102/12\(0210\)](https://doi.org/10.36108/njsa/4102/12(0210))

- Nworgu, B. G. (2015). *Educational research Basic issues and methodology* Enugu: University Trust Publishers
- Okojide, A., Adekeye, O. A., & Adejumo, G. (2021). Psychological well-being as a predictor of marital stability among employed women in Lagos state, Nigeria. *Proceedings of INTCESS 2021- 8th International Conference on Education and Education of Social Sciences*. <https://doi.org/10.51508/intcess.2021136>
- Omeje, F. (2000). *Marital Counselling: What counsellors must do*. New York: Prentice Hall Publishers
- Onabamiro, A. A., Owoyele, J. W., & Elijah, A. O. (2017). Three-factor predictors of marital adjustment among couples in Abeokuta metropolis, Ogun State, Nigeria. *Universal Journal of Psychology*, 5(5), 225-230. <https://doi.org/10.13189/ujp.2017.050503>
- Oparaduru, J. O. (2021). The Effects of Parental Divorce on Academic Performance of Students in Nigeria: Implications for Counselling. *NOUN Journal of Education*, 7(1), 81-97.
- Oputa M. (2003). *Emotional behaviour: why it matters*. San Diego Academic Press.
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: a meta-analytic review. *Psychological Bulletin*, 140(1), 140-187. <https://doi.org/10.1037/a0031859>
- Rogge, R. D., Cobb, R. J., Lawrence, E., Johnson, M. D., & Bradbury, T. N. (2013). Is skills training necessary for the primary prevention of marital distress and dissolution? A 3-year experimental study of three interventions. *Journal of Consulting and Clinical Psychology*, 81(6), 949-961. <https://doi.org/10.1037/a0034209>
- Samuel, L. S. and Alene, G. D. (2021). Effectiveness of marital couple interventions on marital conflict: a systematic review and meta-analysis of experimental studies. <https://doi.org/10.21203/rs.3.rs-207900/v1>
- Sheikhi, Z. P., Moghadam, F. B., & Navidian, A. (2019). Effect of pre-marital sexual counselling on self-efficacy and sexual function of Iranian newlywed women. *International Journal of Women's Health and Reproduction Sciences*, 9(2), 111-117. <https://doi.org/10.15296/ijwhr.2021.20>
- Yeh, H., Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. (2006). Relationships among sexual satisfaction, marital quality, and marital instability at midlife. *Journal of Family Psychology*, 20(2), 339-343. <https://doi.org/10.1037/0893-3200.20.2.339>

## ENTREPRENEURSHIP EDUCATION AS CORRELATE OF EMPLOYMENT OPPORTUNITIES AMONG GRADUATING STUDENTS IN LAGOS STATE UNIVERSITY, NIGERIA

<sup>1</sup>Ogungbo, Moruf Olawale, <sup>2</sup>Abdulraheem, Ismail Kunmi, <sup>3</sup>Abbas, Jamiu Abiodun & <sup>4</sup>Isiaq, Jamiu Owonwami

<sup>1</sup>Department of Educational Management, Lagos State University, Ojo, Lagos State.  
moruf.ogungbo@lasu.edu.ng

<sup>2</sup>Department of Business Education, Al-Hikmah University, Ilorin  
abdulrheemismailkunmi@gmail.com

<sup>3</sup>Department of Business Education, Al-Hikmah University, Ilorin  
Olabim87@gmail.com

<sup>4</sup>Department of Business Education, Al-Hikmah University, Ilorin  
isiaqowowanmi@gmail.com

### Abstract

*This study examined entrepreneurship education as correlate of employment opportunities among graduating students in Lagos State University, Nigeria. Two research questions were raised to guide the study while two null hypotheses were tested at 0.05 level of significance. The study adopted correlational research design. With population of the study comprised 4,680 and a sample size of 369 respondents was arrived at through Taro Yamane sample size determination formula. The sample was drawn through simple random sampling techniques. Research instrument titled Entrepreneurship Education and Employment Opportunity Questionnaire (EEEOQ) was use for data collection. Content validity of the instruments was ensured by test experts and the reliability coefficient of the instruments was 0.82 using Cronbach Alpha statistical method. Based on the data collected for the study a Kendall's tau-b correlation statistics was used to test the null hypotheses at 0.05 level of significance. The findings from the test of hypotheses 1 and 2 revealed that: a significant relationship existed between skill acquisition in entrepreneurship education and employment opportunities with P-value of 0.000 >0.05 and a significant relationship existed between creativity in entrepreneurship education and employment opportunities with P-value of 0.000 >0.05 among graduating students in Lagos State University, Nigeria. It was recommended amongst other that government should put in place skill acquisition centers for public universities to bring about creativity in entrepreneurship education.*

**Keywords:** Entrepreneurship Education, Employment, graduating students.

### Introduction

Entrepreneurship education has become essential for youth empowerment, wealth creation and poverty reduction. The rate of unemployment in Nigeria has reached a pandemic level. Therefore, the Federal Government of Nigeria has initiated several measures and policies aimed at reducing poverty and unemployment among the masses particularly youths. To achieve this, the Federal Government through National Universities Commission and other regulatory bodies directed all tertiary institutions to include entrepreneurial studies in their curriculum. Entrepreneurship has been described as an antidote to unemployment and youth restiveness because entrepreneurial activities have been found to be capable of making positive contribution to the economy and quality of life of the people of a nation (Effiong, 2021). Entrepreneurship

education was introduced in 2006 by the Federal Government of Nigeria through the National Universities Commission. The aim was to empower young graduates to be in position to establish their own small business upon completion of their programme.

However, Entrepreneurship education was established by Nigerian government in public universities as a strategy of eradicating poverty among graduate. But today, a large number of graduates roaming the street, searching for jobs. Adawo and Atan (2013) opined that the phenomenon has become a full-blown challenge amongst graduates of tertiary institutions. This is an unfortunate situation as most youths who are supposed to be productive and active members of the society become beggars, moving from one part of the town, state and country to another in search of greener pastures. In order to make Nigerian graduates more resourceful and self-reliant, the Federal Ministry of Education introduced entrepreneurship education into the curricula of the universities, polytechnics and colleges of education through their regulatory/supervisory agencies - National Universities Commission (NUC), National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE). It was incorporated into the curricula of tertiary institutions effective from the 2007/2008 academic period (ILO, 2010; Gabadeen & Raimi, 2012). Technical support has also been extended to tertiary institutions in Nigeria to teach entrepreneurship education (ILO, 2010; Gabadeen & Raimi, 2012). At the moment, the Nigerian Universities Commission had created massive awareness at workshops for students and academic community on the virtue entrepreneurship education, while NUC also maintained international collaboration and memorandum of understanding (MoU) with the National Science Foundation of United States of America, the British Council and a host of others agencies for the purpose of promoting entrepreneurship culture (Yahya, 2011).

According to a report by the National Bureau of Statistics (2016) the unemployment rate rose from 10.4 percent in the fourth quarter of 2015 to 12.1 percent as at March quarter of 2016. According to Simkovic (2012) unemployment is rampant in Nigeria like other nations because of mismatch between the need of employers and stock of job-specific human capital produced by educational training institutions. Meanwhile, to douse the rising wave of mediocrity in a country, there is need for good and quality education to reduce the risk of unemployment, improve productivity, increase wages, increase technological innovation and economic growth (Olaniyan & Okemakinde, 2008; Simkovic, 2012). Despite various intervention programmes by the Federal Government of Nigeria such as establishment of National Directorate of Employment (NDE) and National Poverty Alleviation Programme (NAPEP) problem of unemployment remains unabated. Realizing the failure of Federal Government in creating employment, several States and Local governments have also introduced Entrepreneurship centres for Women and Youth Empowerment Schemes in which these sets of people are trained to acquire one skill or the other and the participants were given a stipend or an interest free loan to start a cottage or small business at the end of the programmes.

Therefore, graduating students of Lagos State universities in Nigeria came up with various entrepreneurship programs like Career development programmes, Ready Set Work and Graduates Internship Scheme (GIS) for the youths. It is upon this premise that entrepreneurship education was introduced by the Federal Government in 2006 to be taught as a compulsory course across the tiers of tertiary institutions in the country. These programmes was perceived as a sure way of remedying the current unemployment challenge due to the Government inability to absorb all the graduates from the nation's tertiary institutions (Ediagbonya, 2013). Hence, through Entrepreneurship education there will be an increment in employment opportunity,

reduce poverty level, and bring about entrepreneurs working together for common goal, skills acquisition and creativity by enhancing self-employment opportunity therefore establishing a stronger economy than the present Nigerian economy.

### Statement of the Problem

The effort of the Federal government to combat the rate of unemployment in Nigeria brought about the introduction of entrepreneurship education in various levels of academic institutions. Despite the compulsory entrepreneurship education in schools, many graduating students still find it difficult to make use of the entrepreneurial skills they acquired. This means that the purpose of the subject has been defeated, the entrepreneurial education delivered to them seems not to be meeting the aims and objectives of becoming self-employed. Also, today many graduates of Lagos State University do not have what it takes to rely on themselves or building economic challenges over their standard of living (Adawo & Atan, 2013)

As a result of inefficient and ineffective teaching methods and the utilization of improved and standard instructional facilities, equipment, machines, tools and infrastructure, to ensure the production of desired quality of entrepreneurial graduates with enterprising skills hinder the objectives of entrepreneurship education in Nigeria. It is on the basis of the foregoing that this study was aimed at investigating entrepreneurship education as correlate of employment opportunities among graduating students of Lagos State University, Nigeria.

### Objectives of the Study

The main objective of the study was to investigate entrepreneurship education as correlate of employment opportunities among graduating students of Lagos State University, Nigeria. Specifically, this study sought to:

1. examine the relationship between skills acquisition in entrepreneurship education and employment opportunities among graduating students in Lagos State university, Nigeria.
2. examine the relationship between creativity in entrepreneurship education and employment opportunities among graduating students in Lagos State university, Nigeria.

### Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

**H<sub>01</sub>:** There is no significant relationship between skills acquisition in entrepreneurship education and employment opportunities among graduating students in Lagos State University, Nigeria.

**H<sub>02</sub>:** There is no significant relationship between creativity in entrepreneurship education and employment opportunities among graduating students in Lagos State University, Nigeria.

### Methodology

The research design for the study was correlational research design. The population of the study comprised 4,680 graduating students in Lagos State University, A sample size of 369 respondents was arrived at through Taro Yamane sample size determination formula. Simple random sampling techniques was used in selecting 369 graduate's youth from faculty of Education (98 students), Management Sciences (45 students), Social Sciences (52 students), Natural Science (37 students), Applied Science (63 students) and Law (74 students) which were randomly selected from Lagos State University (LASU). The instrument titled: Entrepreneurship Education and Employment Oppourtunity Questionnaire (EEEEQ) was use for data collection. The copies of the instrument administered was 369 and 300 were retrieved from graduating

students selected from six faculties in Lagos State University, Nigeria. The questionnaire was divided into two sections: Sections A and B. Section A contained personal information of the respondents and section B contained the items structured around the research questions. Each item is measured on a four-point Likert-type-rating scale, namely: “Strongly Agree (SA)”, “Agree (A)”, “Strongly Disagree (SD)” and “Disagree (D)”. Content validity of the instruments was ensured by test experts and reliability index of the instrument was determined through Cronbach’s alpha at 0.82 meaning that the instrument was reliable. Based on the data collected hypotheses were tested at 0.05 alpha level using Kendall's tau-b correlation coefficient.

**Results**

**Table 1: Kendall’s tau-b correlation analysis between skills acquisition of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria.**

Correlations Variables		Skills acquisition of Entrepreneurship Education	Employment’_Opportunities
Kendall's tau_b	Skills acquisition of Entrepreneurship Education	Correlation Coefficient	1.000
		Sig. (2-tailed)	.710
		N	300
	Employment’_Opportunities	Correlation Coefficient	.710
		Sig. (2-tailed)	.000
		N	300

\* Correlation was significant at the 0.05 level (2-tailed) \*

A Kendall's tau-b correlation was run to investigate the relationship between skills acquisition of entrepreneurship education and employment opportunities among graduating students’ in Lagos State university, Nigeria. The result indicated that there was a strong, positive correlation which was statistically significant ( $\tau_b = =0.710; N=300; p>0.05$ ). Hence, the hypotheses hereby rejected which implies there is significant relationship between skills acquisition of entrepreneurship education and employment opportunities among graduating students’ in Lagos State university, Nigeria.

**Table 2: Kendall's tau-b correlation analysis between creativity of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria.**

Correlations Variables		Creativity_Entrepreneurship_Education	Employment’_Opportunities
Kendall's tau_b	Creativity of Entrepreneurship Education	Correlation Coefficient	1.000
		Sig. (2-tailed)	.754
		N	300
	Employment’_Opportunities	Correlation Coefficient	.754
		Sig. (2-tailed)	.000
		N	300

\* Correlation was significant at the 0.05 level (2-tailed) \*

A Kendall's tau-b correlation was run to investigate the relationship between creativity of acquisition of entrepreneurship education and employment opportunities among graduating students’ in Lagos State university, Nigeria. The result indicated that there was a strong, positive correlation which was statistically significant ( $\tau_b = =0.754; N=300; p>0.05$ ). Hence, the

hypotheses hereby rejected which implies there is significant relationship between skills acquisition of entrepreneurship education and employment opportunities among graduating students' in Lagos State University, Nigeria.

### **Discussion**

There are two key findings of the present research. The findings of this study show that hypotheses 1 to 2 were all statistically significant.

Firstly, the hypothesis one which stated that “there is no significant relationship between skills acquisition of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria is hereby rejected. This implied that statistically, a significant relationship existed between skills acquisition of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria. This finding failed to agree with the assertion of Handayani et al. (2020) and McGrant et al. (2018) that awareness and proper orientation are part of the competences necessary for empowering students for the achievement of SDGs 2030.

Secondly, the hypothesis two which stated that “there is no significant relationship between creativity of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria is hereby rejected. This implied that statistically, a significant relationship existed between creativity of entrepreneurship education and employment opportunities among graduating students in Lagos State universities, Nigeria. This finding is in line with the view of Ogundele, Akingbade and Akinlabi (2012); Garuba, (2010) that technical education empowers the youth and led to the production of craftsmen and technicians.

### **Conclusion**

Based on the findings, entrepreneurship education has become a correlate for employment opportunities among graduating students in Lagos State, Nigeria. Though, government established entrepreneurship education to reduce graduate unemployment but adversely university students' graduate with little practical knowledge. Data were collected, analyzed and interpreted. Based on the findings of the study, it was concluded that Graduating students of Lagos State University required creativity and skills acquisition entrepreneurship education which correlate employment opportunity.

### **Recommendations**

Based on the findings, the following recommendations were made:

1. Federal government should improve on the facilities and infrastructures use in the delivery of entrepreneurship education in Nigeria.
2. The management of Lagos State University should organise periodic seminars, workshops and conferences through collaboration with NGOs and industries, to further train lecturers and sensitizes students on what the SDG of decent work and productive employment is all about
3. The Governing council and Vice Chancellors overseeing the affairs of the universities should invest massively in training of specialists in the field of entrepreneurship educations. Experts with practical experience in entrepreneurship from the industry could also be engaged on full or part-time arrangement.

4. Government parastatal, philanthropist and donor agencies like TETFUND, ITF and SMEDA should as a matter of priority mobilize adequate funds to support entrepreneurship education programmes in public Universities in Nigeria.

## References

- Adawo, M. A., & Atan, J. A. (2013). Graduate unemployment in Nigeria: Entrepreneurship and venture capital nexus. *Journal of Economic and Sustainable Development*, 4(9), 75-81.
- Ediagbonya, K. (2013). The roles of entrepreneurship education in ensuring economic empowerment and development. *Journal of Business Administration and Education*, 4(1), 35-46.
- Effiong, E. A. (2021). Entrepreneurship competencies perceived by business education lecturers as required for success of students in managing small scale enterprises. *Nigerian Vocational Journal*, 16(1), 148.
- Gabadeen, W. O. & Raimi, L. (2012). Management of Entrepreneurship Education in Nigerian Higher Institutions: Issues, Challenges and Way Forward. *Abuja International Journal of Education and Management Sciences (ABIJEMS)*, 2, 1-26.
- Garuba, A. (2010). Adult education and Poverty Alleviation Programmes in Nigeria: A case for Harmonization. *Journal of Education*, 3(2), 12-22.
- Handayani, M. N., Ali, M. & Mukhidin, D. W. (2020). Industry perception on the need of green skills in agribusiness vocational graduates. *Journal of Technical Education and Training*, 12(2), 24–33. Retrieved from <http://penerbit.uthm.edu.my/ojs/index.php/jtet>.
- International Labour Organization (2010). ILO activities in Nigeria. United Nations System in Nigeria. Available on <http://www.un-nigeria.org/unagencies/ilo.html>.
- McGrant, S., Alla-Mensah, J. & Langthaler, M. (2018). *Skills for decent work, life and sustainable development vocational education and the sustainable development goals*. 18. Australian Foundation for Development Research. Briefing Paper. Retrieved from <https://www.oefse.at/fileadmin/content/Downloads/Publicationen/Briefingpaper/BP18SDGsand-TVET.pdf>
- National Bureau statistics Nigeria (2016). *Nigerian unemployment rate 2006-2016*. Retrieved from [www.tradingeconomic.com/Nigeria/unemployment-rate-on-the-3rd-of-July-2018](http://www.tradingeconomic.com/Nigeria/unemployment-rate-on-the-3rd-of-July-2018).
- Ogundele, O.J.K., Akingbade, W.A. & Akinlabi, H.B. (2012). Entrepreneurship Training and Education as Strategic Tools for Poverty Alleviation in Nigeria, *American Internal Journal of Contemporary Research*, 2(1), 148-156
- Simkovic, M. (2012) Risk-Based Student Loans. Available at Social Science Research Network (SSRN): <http://ssrn.com/abstract=1941070>. Accessed on July 4, 2012.
- Yahya, U. (2011). Why We Set Up Entrepreneurship Studies in Varsityes- FG. Available on <http://www.thenigerianvoice.com/nvnews/45849/1/why-we-set-up-entrepreneurship-studies-in-varsitie.html>. Accessed June 16, 2012.

## DETERMINANT OF THE PREDICTIVE STRENGTH OF UTME SCORES IN PUBLIC UNIVERSITIES: A META ANALYSIS

<sup>1</sup>Kareem Azeez Olawale & <sup>2</sup>Janet O. Adetayo

<sup>1</sup>Department of Curriculum & Instruction, Sikiru Adetona College of Education Science & Technology, Omu-Ajose (SACOETEC). kazeez2014@gmail.com, 07064207652

<sup>2</sup>Department of Science and Technology Education, Faculty of Education, Olabisi Onabanjo University, Ago-Iwoye. adetayo.janet@oouagoiwoye.edu.ng, 08163552814,

### Abstract

*The Unified Tertiary Matriculation Examination (UTME) conducted in Nigeria by the Joint Admissions and Matriculation Board (JAMB) is essentially an aptitude test designed to predict candidates' intellectual ability to successfully undertake undergraduate programmes at the tertiary education level. Many studies have been conducted on the predictive validity of the UTME and their findings varied considerably suggesting the need for a meta-analytical study to further assess and put the various findings in proper perspective. Hence, this work is the meta-analysis of the predictive strength of UTME in Nigeria universities. The ex-post facto form of descriptive research design was used in the study. A total of ninety-six (96) studies on validity of UTME consisting of some published and unpublished articles were gathered for the study. Out of the entire population thirty (30) studies were purposively selected on the basis of empirical status and relevance. A computer search through the internet and hand – search through the visitation to relevant department in the Universities and Scholar Journal papers, were consulted in order to obtain the selected studies. The instruments used for this study was research results from published and unpublished journal articles. A self-made Profoma known as Coding Sheet was used to document the characteristics of the sampled publications. Findings revealed that the strength of predictive validity of UTME in Nigeria public University is moderate. Based on the findings of this study, it was concluded that the differences in the findings of previous researchers on predictive validity of UTME was as a result of differences in the sample size used. Therefore, it was recommended that in taking vital decisions on the predictive validity of UTME, stakeholders should make inferences based on the findings of meta-analytical studies aggregating the findings of previous studies on the subject.*

**Keywords:** Determinant, UTME, Meta-analysis, Predictive Validity, Universities

### Introduction

In Nigeria, achievement at any level of education is crowned with certification for those who successfully completed a course of study with good academic records. Thus, at the end of secondary school education students are expected to sit for public examinations such as the West African Senior School Certificate Examination (WASSCE), conducted by the West African Examinations Council (WAEC), the Senior School Certificate Examination (SSCE), conducted by the National Examinations Council (NECO), and the National Technical and Business Certificate Examinations (NTCE/NBCE) conducted by the National Business and Technical Examination Board (NABTEB). Public examinations are viewed as external school examinations open to the general public and conducted by these examination bodies using tests that have appropriate psychometric properties. According to Adeyegbe (2004), the tests used by various public examination boards are often better developed than the ones prepared by the teachers in the school setting.

Possession of minimum of five credit passes in any of these public examinations is a prerequisite for gaining admission to universities after sitting for the Unified Tertiary Matriculation

Examination (UTME) conducted by the Joint Admissions and Matriculation Board. Candidates' admission or placement into Nigerian universities irrespective of whether the university is Federal, State or Privately owned is contingent on meeting the prescribed cut-off mark in the UTME. For more than a decade now, prospective candidates are further required to undergo university Post UTME tests or screening examinations as a condition for admission. It is believed that these entry qualifications and entrance examinations will positively predict candidates' performance in the university. The system seems not to have totally evolved due to the recent confusion created by the Federal Government's desire to scrap the Post UTME and extend the validity of the UTME scores to three or more years.

Predictive validity as a form of validity seeks to measure the extent to which a test predicts students' future performance. Prediction in the broad sense of the term consists essentially of estimating the values of some function of variables over time, on the basis of certain present attributes, which may or may not contain random errors. It is the ability to estimate future achievement based on the past or present achievement.

Predictive validity is most commonly used when exploring data in the field of psychological study and analysis. It is used to collect information about various populations, and to create generalizations which may be useful when assessing individuals. For example, it is often used by big companies that administer a test to prospective employees, comparing test data from current employees to determine whether or not someone will be qualified for the job, it is equally used in the institutions to comparing performances of students. Since JAMB started its operation, individuals, corporate bodies and different levels of government have accused JAMB of massive corrupt practices (Adebayo, 2011; Bernardine, 2019). In Nigeria, the UTME is an aptitude test trying to predict students' achievement in universities and its effectiveness depends largely on the extent to which it could do this, hence the need to always assess its predictive validity. Predictive test is a measurement of how well a test predicts future performance. It is a form of criterion validity in which how well the test works is established by measuring it against some known criteria. In order for a test to have predictive validity, there must be a statistically significant correlation between test scores and the criterion being used to measure the validity. One of the classical examples of this is the UTME. When students apply to Colleges, Polytechnics and Universities, they are usually required to submit test scores – from examinations such as the WAEC, JAMB/ UTME. These scores are used as bases for comparison, in which evaluators look at the performance of students who have had similar scores in the past. The belief is that the test scores can predict how well a student will perform in the university (college). High test scores tend to be correlated with good performance in the university, making students with high scores appealing for admission.

Bernardine (2019) stated that there is no relationship between the chemistry UME scores and their first year scores in State Universities. For medicine and surgery, in both the Federal and State Universities, there is weak positive relationship between UME scores in chemistry and the students' first year scores in the discipline. Bala (2019) The predictive validity of students CGPA in UTME and PUTME in Kaduna State University reveals that UTME and PUTME are good predictors of students' final class of degree. Biman (2019) stated that there is no significant contribution of UTME on students' CGPA. UTME has no prediction on the overall students' CGPA. The result shows that UTME results had no predictive strength with  $\beta = -0.013$  with  $R^2 = 0\%$  to the overall students' CGPA. Popoola (2016) stated that University Matriculation

Examination (UME) served as a good predictor of the students' performance in their first year results. Egberha (2019) revealed that University Tertiary Matriculation Examination (UTME) scores have a low predictive power of 0.009 that is UTME score accounted for only 0.9% of the total variance. This suggests that 99.1% of the variance of student's first year academic performance is accounted for by other factors other than UTME scores. Imasuen (2020) revealed that UTME scores

do not significantly predict undergraduate final grades in Nigeria University. UTME score only accounted for about 0.01% in students' final grade in Nigeria universities. Ituma, Ugwuanyi, & Uzochukwu (2023) stated that there is a moderate positive relationship between the students' UTME scores in Mathematics and the first year mean achievement scores of the students in undergraduate Mathematics courses. Also, the students' UTME scores in Mathematics accounted for 30.7% of the total variations in the students' achievement in undergraduate Mathematics. Meta-analysis is bringing together data from a large collection of past research on a particular topic. In meta-analysis primary research reports constitute the data for statistical integration, Glass (1976) said both the primary studies and their findings are quantified so that statistical integration can be performed. Meta-analysis is to correct the weaknesses in individual research by integrating the findings of past research studies. The concept of meta-analysis originates in the fields of psychiatry and medicine where it is "a standardized approach for examining the existing literature on a specific, possibly controversial issue to determine whether a conclusion can be reached regarding the effect of a treatment or exposure" (Russo, 2007). In Meta analysis, the primary studies themselves become the unit of analysis" (Denson & Seltzer, 2011)

Majority of meta-analyses used statistical techniques to combine the findings from independent studies into a single finding, in order to provide greater validity and reliability for those findings by producing an 'effect size' of the activity studied. Variation in the results of the studies provides an opportunity to ask additional questions and to investigate more closely the reasons for the observed differences in effect size across studies (Denson & Seltzer, 2011). An effect size can be defined as "a quantitative reflection of a magnitude of some phenomenon that is used to address a question of interest.

### **Statement of the Problem**

There are often a lot of complaints about students' poor academic performance in the Nigeria Universities over the year. One of the fundamental issues associated with the university education system in Nigeria is mandatory use of UTME scores for the purpose of admission for all public and private higher institutions in Nigeria. However, there have been inconsistencies in the results of past research studies on predictive validity of university matriculation examination. Some studies reported high predictive validity while some claimed that UTMEs lacked predictive validity. To put the situation into proper perspective, meta-analysis was needed in order to determine the strength of the predictive validity of UTMEs.

### **Research Questions**

- i. What is the strength of the predictive validity of UTME in selected studies?
- ii. What factors contributed to the amount of variance in the strength of previously reported validity studies of UTME in Nigeria?

### **Methodology**

An ex-post facto descriptive research design was employed to carry out this study. This study is the determinant of the predictive validity of Unified Tertiary Matriculation Examination (UTME) in Nigeria public Universities using a Meta analytical Approach. The ex-post facto research design was used because the researcher was not in a position to manipulate the past research works that were analyzed. The population for this study included all available published articles or journals, unpublished masters' dissertations, and PhD theses that focused on predictive validity of UTME in Nigeria from 1998 - 2019. A total of ninety-six (96) studies on validity of UTME both published and unpublished articles were gathered for this study. Out of the entire population thirty (30) studies were purposively selected on the basis of empirical status and relevance. A computer search through

the internet and hand – search through the visitation to relevant department in the Universities and Scholar Journal papers, were consulted in order to obtain the selected studies. A self-made Profoma known as Coding Sheet designed by researcher was used to document the characteristics of the sampled research results from published and unpublished journal articles.

## Results and Discussion

**Research Question 1:** What is the strength of the predictive validity of UTME in selected studies?

In establishing the strength of the predictive validity of University Tertiary Matriculation Examination (UTME), it involved the estimation of the overall effect size,  $r$  of the thirty selected studies. The effect sizes ( $r$ 's) for the 30 empirical studies were combined. The computation is presented in Table 1.

**Table 1: Computation of the Combined Effect Sizes Using Correlation Coefficient,  $r$  of the Selected Studies**

Study	Sample Size (N)	N-3	R	Zr
1	100	97	0.880	1.3758
2	101	98	0.500	0.5493
3	500	497	0.241	0.2448
4	300	297	0.820	1.1568
5	1500	1497	0.202	0.2027
6	250	247	0.380	0.4001
7	2518	2515	0.153	0.1511
8	558	555	0.320	0.3316
9	800	797	0.280	0.2877
10	750	747	0.175	0.1769
11	2400	2397	0.266	0.2715
12	4904	4901	0.080	0.0802
13	1370	1367	0.002	0.0050
14	336	333	0.100	0.1003
15	720	717	0.328	0.3372
16	253	250	0.900	1.4722
17	103	100	0.177	0.1769
18	143	140	0.437	0.4661
19	408	405	0.195	0.1975
20	8111	8108	0.009	0.0100
21	74	71	0.930	1.6584
22	720	717	0.231	0.2342
23	1134	1131	0.003	0.0030
24	220	217	0.920	1.5890
25	240	237	0.770	1.0203
26	1610	1607	0.001	0.0010
27	135	132	0.006	0.0060
28	471	468	0.018	0.0182
29	1500	1497	0.009	0.0100
30	943	940	0.831	1.1881
		33082	Mean Fisher	0.462857
			Weighted Fisher	0.586914

The result presented in Table 1 showed that the mean Fisher for the 30 studies was 0.463 with an associated ' $r$ ' value of 0.430 (that is, Fisher Z transformation ' $r$ '). Thus, the strength of predictive validity of University Tertiary Matriculation Examination (UTME) from the studies was 0.43. This value according to Cohen (1988) was relatively moderate. This result can be interpreted as moderate predictability meaning that the strength of predictive validity of University Tertiary Matriculation Examination (UTME) in Nigeria is moderate. The table (Table 1) further showed that the majority of the studies have a very low to low correlation coefficients. The studies that fell between correlation coefficients of 0.001-0.38 were twenty-one (21) while only two (2) studies fell between moderate

correlation coefficients of 0.40-0.50. Seven (7) studies fell between high correlation coefficient ranges of 0.50-1.00.

The result observed from the analysis of the first research question indicates that the strength of predictive validity of University Tertiary Matriculation Examination (UTME) from the studies was 0.43. This value according to Cohen (1988) was relatively moderate. This result can be interpreted as moderate predictability meaning that the strength of predictive validity of University Tertiary Matriculation Examination (UTME) in Nigeria is moderate. This finding corroborates Afolabi, Mabayoje, Togun, Oyadeyi, and Raji, (2007) who reported that the students admitted through UME performed better in 200 level physiology examination but there was no correlation between UME scores and O-level aggregate, 100 level GPA and 200 level physiology result. All these suggest that the UTME only has moderate predictive validity and it cannot be relied upon as the only criterion for predicting students' performance in universities. Other predictive measures such as the Post UTME tests or screening may still be necessary.

**Research Question 2:** What factors contributed to the amount of variance in the strength of previously reported validity studies of UTME in Nigeria?

In identifying the factors that contributed to the amount of variance in the strength of previously reported validity studies of Unified Tertiary Matriculation Examination (UTME), the means Fisher ( $Z_r$ ) of the selected empirical studies of UTME was compared with the weighted Fisher ( $WZ_r$ ). The Weighted Fisher ( $WZ_r$ ) according to Rosenthal (1984) and Rosenthal and Roselow (1984) can be estimated using the expression below:

$$W\bar{Z}_r = \frac{\sum(N - 3)(Z_r)}{\sum(N - 1)}$$

**Table 2: Effect of Sample Size on the Effect Size of the Selected Study**

Study	Sample Size	N-3	r	Zr	(N-3)(Zr)
1	100	97	0.880	1.3758	133.4526
2	101	98	0.500	0.5493	53.8314
3	500	497	0.241	0.2448	121.6656
4	300	297	0.820	1.1568	343.5696
5	1500	1497	0.202	0.2027	303.4419
6	250	247	0.380	0.4001	98.8247
7	2518	2515	0.153	0.1511	380.0165
8	558	555	0.320	0.3316	184.0380
9	800	797	0.280	0.2877	229.2969
10	750	747	0.175	0.1769	132.1443
11	2400	2397	0.266	0.2715	650.7855
12	4904	4901	0.080	0.0802	393.0602
13	1370	1367	0.002	0.0050	6.8350
14	336	333	0.100	0.1003	33.3999
15	720	717	0.328	0.3372	241.7724
16	253	250	0.900	1.4722	368.0500
17	103	100	0.177	0.1769	17.6900
18	143	140	0.437	0.4661	65.2540
19	408	405	0.195	0.1975	79.9875
20	8111	8108	0.009	0.0100	81.0800
21	74	71	0.930	1.6584	117.7464
22	720	717	0.231	0.2342	167.9214
23	1134	1131	0.003	0.0030	3.3930
24	220	217	0.920	1.5890	344.8130
25	240	237	0.770	1.0203	241.8111
26	1610	1607	0.001	0.0010	1.6070
27	135	132	0.006	0.0060	.7920
28	471	468	0.018	0.0182	85.1760
29	1500	1497	0.009	0.0100	14.9700
30	943	940	0.831	1.1881	1116.8140
		33082	Mean Fisher	0.462857	6013.2399
			Weighted Fisher	0.644625	

As presented in Table 2, the Mean Fisher,  $Z_r$  was 0.462857, with the associated correlation coefficient,  $r$  value of 0.430. Weighted Mean Fisher,  $WZ_r$  was 0.644625 with the associated correlation coefficient,  $r$  value of 0.570. The weighted mean Fisher was greater than the Mean Fisher. This means that weighting by sample size resulted to larger estimate of combined effect size than when sample sizes were not used. The difference in the results of the 30 empirical studies was a result of differences in the sample size on which correlation coefficient,  $r$  was based. Thus, weighted,  $r = 0.570$  was a better measure because it corrected for the diversity of sample used by the different authors or researchers. The implication of this finding is that sample size contributed to the amount of variance in the strength of previously reported validity studies of UTME in Nigeria.

The finding on the second research question revealed that the difference in the results of the 30 empirical studies was a result of differences in the sample size on which correlation coefficient,  $r$  was based. Thus, weighted,  $r = 0.570$  was a better measure because it corrected for the diversity of samples used by the different authors or researchers. The implication of this finding is that sample size contributed to the amount of variance in the strength of previously reported validity studies of UTME in Nigeria. The implication of this is that when sample size of any thesis or dissertation is less than 120; it would affect the result of the study negatively. The larger the sample size the better the effect size which is the result. This study agrees with Ale (2015) who used 40 sample sizes and got an effect size of 0.042, a non - significant result. Ale (2015) used 30 sample size and a non - significant result of 0.09. That the assumption that large variance exists in the probability level of the selected studies on predictive validity of UTME was not tenable. This implies that the selected empirical studies were not significantly different in terms of their probability levels. The implication of this result is that there was no variance in the probability level of the selected studies on predictive validity of UTME in Nigeria. This result tends to be consistent with the findings from a previous study by Sterne, Egger and Epidemoil (2000). Also the effect size of the unpublished articles was low. This trend had been reported in previous studies on publication and related bias in meta- analysis that publication bias is more likely to affect small sample studies which also tend to be of lower methodological quality and this may lead to small study effects where the smaller studies in meta-analysis show larger treatment which may also arise because of between trial heterogeneity.

## Conclusion

The research study had been able to provide more scientific facts as regards the predictive validity of UTME in public University in Nigeria using a Meta analytical approach. The Meta analysis used had provided relevant facts on the psychometric worth and usefulness of the UTME examination in Nigeria. With the application of this statistical method, this study had been able to provide reliable database for which other researchers can draw from. Based on the findings of this research, it was concluded that the strength of predictive validity of UTME in public Universities in Nigeria is moderate. That the difference in the findings of previous researchers on predictive validity of UTME was as a result of differences in the sample size used and the characteristics under the researcher control for the study.

## Recommendations

Based on the findings of this study, it was recommended that Unified Tertiary Matriculation Examination should be sustained to select candidate for University admission. On

the other hands JAMB should improve on the conduct of UTME examination for better performance.

## References

- Adebayo, L. (2011) "A Note on Post-JAMB Tests," *The Guardian*, p.19, Sunday, November 27, 2011.
- Afolabi, A. O. Mabayoje, V. O. Togu, V. A. Oyadeyi, A. S & Raji, Y. (2007). The effect of Mode of Entry into Medical School on Performance in the First Two Years. *Journal of medical science*. 7(6): 1021-1026
- Ale V. M. (2015). Resolving Contradictions of Predictive Validity of University Matriculation Examinations in Nigeria: A Meta – Analysis Approach. *Journal of Education and Practice* www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.6, No.29, 2015.
- Bala D. & et al (2019). Are UTME and PUTME Good Predictors of Students' Academic Performance in the University? The Case of Kaduna State University, Kaduna, Nigeria. *Science World Journal Vol 14(No 2) 2019* www.scienceworldjournal.org ISSN 1597-6343 Published by Faculty of Science, Kaduna State University
- Bernardine, Ngozi Nweze (2019). The Prediction of Student Performance in Chemistry-based Courses in Public Universities Using University Matriculation Entrance Scores in Chemistry, Enugu State University of Science and Technology, Nigeria.
- Biman, K. A., John S., Kawu W. and Fatima M. J. (2019). Entry Qualifications as Predictor of Undergraduate Biology Students' Academic Achievement in Nigerian Universities. Moddibo Adama University of Technology, Yola.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd ed.)*. New York, NY: Psychology Press.
- Cumming, G., and Calin-Jageman, R. (2017) *Introduction to the New Statistics: Estimation, Open Science, and Beyond*. New York, NY: Routledge.
- Denson, N. & Seltzer, M. H. (2011). Meta-analysis in higher education: An illustrative example using hierarchical linear modeling. *Research in Higher Education*, 52(3), 215-244.
- Egger, M., Davey Smith, G. and Altman, D. G. (2000). *Systematic Reviews in Health Care: Meta-analysis in Context*. London: BMJ Books.
- Glass, G.V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher*, 5, 3-8.
- Imasuen K. and Stanley O. E. (2020). Unified Tertiary Matriculation Examination (UTME) and the Post Unified Tertiary Matriculation Examination (PUTME) as Predictors of Undergraduate Students' Final Grades.
- Ituma, S. C., Ugwuanyi, C. C. & Uzochukwu S. U. (2023). Validity of UTME and Post-UTME in Predicting Students' Academic Achievement in Undergraduate Mathematics Department of Science Education, Faculty of Education, University of Nigeria Nsukka. *International Journal of Research and Innovation in Social Science (IJRISS)*
- Kelley, K. and Preacher, K. J. (2012). On effect size. *Psychol. Methods* 17:137. doi: 10.1037/a0028086 PubMed Abstract | CrossRef Full Text | Google Scholar.
- Rosenthal, R. (1984). *Meta-analytic procedures for social research*. Beverly Hills, CA: Sage.
- Russo, M. W. (2007). *How to Review A Meta-Analysis*, *Gastroenterology & Hepatology*, 3(8): 637-642. Retrieved: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3099299/>

## FUNDING BUSINESS EDUCATION IN A DEPRESSED ECONOMY: ISSUES, CHALLENGES AND THE WAY-FORWARD

<sup>1</sup>Ajeniyi, Adekemi Esther, <sup>2</sup>Ayoade, Peter Abiola, <sup>3</sup>Olayiwola, Aanuoluwa Oladiran & <sup>4</sup>Kalu, Aloysius Eze

1

Department of Business Education,  
Federal College of Education (Special), Oyo  
akofoesther@gmail.com, 08032111944

<sup>2</sup>Department of Business Education,  
Federal College of Education (Special), Oyo  
peterayoadeabiola@gmail.com, 08062751769

<sup>3</sup>Department of Business Education,  
Federal College of Education (Special), Oyo  
omercy844@gmail.com, 07033297403

<sup>4</sup>Department of Business Education,  
Federal College of Education (Special), Oyo  
aloysiuskalu@gmail.com, 08037766447

### Abstract

*This paper examined the issues, challenges and the way-forward to funding of Business Education in a depressed economy. It was found that economic depression usually leads to distortion of the means of livelihood of people which in turn breeds unemployment and poverty; and that government's lack of priority, constant changing needs of the business world, politics of patronage are some of the issues relating to the underfunding of Business Education. It was concluded that Business Education plays a critical role in economic development and that for Business Education to fulfill its mandate, especially in a depressed economy, it must enjoy adequate funding. It was therefore suggested that governments should prioritize the funding of Business Education, work with relevant stakeholders to develop innovative funding models and establish dedicated funding streams for Business Education, experts should equally consider offering fee-for-service programmes so as to augment the funding of Business Education.*

**Keywords:** Business Education, Economic Depression, Funding, National Development.

### Introduction

Business Education has the mandate to produce competent, skilled and versatile manpower for teaching, office occupation, business world and self-employment. Gbadegesin (2020) asserts that Business Education is a programme of skills and knowledge acquisition and it plays a major role in the economy by providing workforce for teaching and industry and also in training individuals to become self-employed and contribute to national development. Despite these important roles played by Business Education in national development, the programme is yet to enjoy the expected place of prominence it deserves concerning funding. The National Policy on Education 6th edition, Section 3 stated that education in general, is a capital-intensive social service. Business Education, like other vocational programmes, is more capital-intensive as it requires a lot of funding in order to achieve its mandate (Olufunwa, Waziri and Olorunmolu, 2013). Business Education needs funding in the area of research, acquisition of books and

business journals and other relevant materials, procurement of modern equipment to facilitate teaching and learning, recruiting of competent personnel, and training of existing personnel (Gbadegesin, 2020). Fattah in Dianto and Idawati (2020) emphasised the important role of funding Business Education in order to maximally achieve its objectives. Funding of Business Education is viewed in terms of operational and administrative needs, procurement and maintenance of facilities and infrastructure, employees' welfare, professional development of teachers, as well as students' development. Funding is the act of making available adequate resources to sponsor a need, programme, or project. In another perspective, funding refers to money provided, especially by an organization or government, for a particular purpose. In Nigeria, education is in the concurrent legislative list, meaning that the federal, state and local governments can formulate concurrent policies and strategies on its funding as well as other legislative functions. Therefore, in Nigeria, education is being funded by federal and state governments in a mutually exclusive manner. Local Government Areas which could have been part of the tripartite funding model for education have been side-lined, relegated and technically schemed out of functionalities.

According to the National Policy on Education (2013), sources of funding for education in Nigeria include subventions from government through the budgetary allocations; intervention funds through the Tertiary Education Trust Fund (TETFund), Petroleum Technology Development Fund (PTDF), Industrial Training Fund (ITF); internally generated revenue; consultancy services; grants through local and international agencies; philanthropic interventions as well as intervention funds from alumni associations among other sources. There is no gainsaying the fact that the Nigerian government has a track record of underfunding education. In spite of the fact that the National Policy on Education (2013) captured as part of the strategies for funding education, the UNESCO's recommendation of at least twenty-six per cent of the annual budget of the federal, state and local governments to be voted for the education sector, the annual budget dedicated for education is ranged between four per cent and ten per cent from year 1999 till date. More so, budgetary allocation is not the same as budget implementation or execution. That is why Dianto and Idawati (2020) concludes that budgetary oversight activities are needed in order to track the disbursements of funds, or the actual implementation and execution of projects and programmes as contained in the budget of a particular year.

Nigeria has been experiencing a staggered economy for about a decade now as a result of low price and dwindling demands for crude oil in the global market and among other factors. This has negatively affected the country's balance of payments, debts profile and put serious pressure on the foreign exchange. Nigeria's economy is neck-deep in depression, and governments are under serious pressure to reduce public spending. In the wake of the pandemic and in the face of insecurity, health and defence are stealing attention away from other sectors; and education is often seen in this regard as a discretionary expense. This has led to underfunding of Business Education programmes, and has left a negative impact on the quality of education and the opportunities available to students. Business Education has experienced low financial backup because government seems not to fully understand its place in achieving the country's development plans. Therefore, funding Business Education in such a depressed economy is a very challenging task. But as challenging as it may seem, Business Education together with other vocational and technical programmes has the potential to leap Nigeria from economic quagmire only if adequate attention is given to its funding and programme implementation. It is against this background that this paper sets to explore the issues and

challenges so as to chart the way forward for the funding of Business Education in this time of economic downturn.

### **The Role of Business Education in National Development**

Business Education, as conceived by Agbionu in Nwosu and Eze (2015), is that form of instruction that both directly and indirectly prepares the businessman for his calling. The definition confirms the vocational nature of Business Education. Udo and Babangida in Ademiluyi, Aransiola, Nuhu, Nwabufo and Sangodapo (2023) see Business Education as an aspect of vocational education that provides skills, knowledge, competencies, and attitudes necessary for effective employment in any specific business occupation. Aliyu in Umezulike (2015) define Business Education as education for the development of skills and competencies, attitudes and attributes that are necessary for the efficiency of the economic system. Adebayo (2013) noted that youth unemployment breeds crimes. And crimes, at varying degrees, affect policies and developments of any nation. Business Education plays a prominent role in addressing youth unemployment and thereby contributing directly to national development. Ajoma (2008) asserted that Business Education by its nature as a skill development programme is very vital to national development. From all the definitions reviewed above, it is established that Business Education is a critical component of economic development as it provides the skills and knowledge necessary for individuals to start and run businesses, and helps to create a workforce that is adaptable and innovative. Business Education is an important investment for both individuals and businesses. It can help individuals succeed in their careers and help businesses grow and prosper. It provides the knowledge and skills necessary to start and run a business. Business skills are in high demand in all sectors of the economy. It helps in developing critical thinking and problem-solving skills. Funding of Business Education will have positive impact on the Gross Domestic Product (GDP) of the nation. One of the ways to promoting national economic development is to tackle unemployment through adequate funding of vocational (business) and technical education (VTE).

### **Sources of Funding for Business Education**

Nwaiwu, Dikeocha and Nwagu (2015) maintained that funding is an indispensable requirement in providing human resources, infrastructural facilities and equipment needed to run Business Education programme in tertiary institutions. Funding is the financial allocation that is made readily available by individuals, privately owned businesses, governments among others purposely to finance day-to-day administration that will make the business concerned to achieve its aims and objectives. Funding is a kind of budgetary provision made available by the concerned stakeholders in an establishment in order to finance its major overhead expenses like payment of salaries, allowance and benefits, provision of infrastructural facilities for teaching and building of major structures and offices needed. The National Policy on Education (2013) section 10 sub-section 153 regarded education as a social service and the only way the national economy can grow; therefore, it needs adequate financial support from all tiers of government for the successful implementation of its educational programmes. According to the National Policy on Education (2013), education is a joint responsibility of the federal, state and the local governments and the private sector. Efforts towards improving funding of education includes the establishment of government intervention funds, such as UBEC fund, TETFund, Industrial Training Fund, National Science and Technology Fund, Universal Service Provision Fund, and Petroleum Technology Development Fund. Others include utilising resources from international and local Development Partners such as World Bank, United States Agency for International

Development (USAID), United Nations Industrial Development Organization (UNIDO), United Nations International Children's Emergency Fund (UNICEF), United Nations Development Programme (UNDP), etc. The policy document also encouraged the formal participation alumni bodies in the funding of secondary and tertiary education in Nigeria.

### **Business Education in a Depressed Economy**

A depressed economy, also referred to as an economic depression, is a severe and prolonged downturn in economic activity characterized by a significant decline in various economic indicators, including gross domestic product (GDP), employment, industrial production, and overall business activity. During the period of economic depression in any nation, there is often a downslide in the nation's revenue which usually leads to unavoidable cuts in expenditures. Funding Business Education in a depressed economy can be challenging. One of the biggest issues is that government's funding for education is often the first to be cut when budgets are tight. This is because education is not seen as an immediate economic priority, even though it is essential for long-term economic growth. Adebayo (2013) pointed out that a situation where funds allocated to security alone surpasses what is allocated to education, health and critical infrastructure combined is detrimental to national development. According to Ojiambo (2009), Business Education should be adequately financed and constantly subjected to periodic technical consultations and reviews so as to meet global needs.

### **Issues of Underfunding Business Education in a Depressed Economy**

The following are the issues relating to the underfunding of Business Education in a depressed economy:

- i. **Rising Costs:** the cost of delivering Business Education is rising, due to factors such as the increasing cost of technology and the need to attract and retain qualified personnel.
- ii. **Changing Needs:** the needs of the business world are constantly changing, and Business Education programmes need to adapt accordingly. This can be expensive, especially at a time when resources are scarce.
- iii. **Inadequate Provision and Improper Utilization of Budgetary allocation:** the budgetary allocation to education is usually insufficient. There is usually a wedge between the allocation and the actual release of funds. At times, the fund may not be released on time. At other time, there may be some impropriety in the implementation of the budget.
- iv. **Lack of Training and Re-training of Business Education Teachers:** poor funding of Business Education programmes affects the ability of teaching staff/personnel to undergo training and retraining that can help them in courses that require practice. Iweh and Ufot (2012) acknowledged that the Business Education departments in some colleges of education and universities lack adequate computer studios, as a result, the institutions continue with the use of the traditional method of teaching. This situation is very pathetic in the education sector.
- v. **Politics of Patronage:** Government's running of tertiary institutions through political appointees who may not necessarily be specialists or experts in their appointed position affects the education sector. Funding of tertiary education is now being determined by the level of influence wielded by political appointees to attract funds from the government. It is now more of a political favour than the obligation of government. An example of this is in the appointment of the Governing Council of tertiary institutions. Ojiambo (2009) proposed

that for education to foster national development, its policies have to be separated from national politics.

- vi. Lack of Priority: it is true that the available resources may not be sufficient to cater for the competing needs per time because there are other pressing needs in and out of the education sector that equally demand attention. But when the government, tertiary institution administrators and other stakeholders have a true sense of priority, the limited resources can be used judiciously to achieve the desired objectives.

### **Challenges of Underfunding Business Education in a Depressed Economy**

The challenges of underfunding Business Education in a depressed economy include the following:

- i. Inadequate Research: funds are not readily available to carry out research in Business Education in terms of project writing, and networking between institutions. Only a few lecturers engage in serious research work because there is not enough funding. Research is the most important tool that can connect Business Education programmes to the public and this will help the public to know the importance of Business Education programmes.
- ii. Inadequate Facilities: most Business Education department in most of our institutions lack suitable lecture theatre, and some other facilities that will make the teaching and learning go on par parse while some are in a dilapidated state and this affect teaching and learning. During lecture time students are found outside the building hanging on doors and windows, this hinders effective learning and prevents our education system not to bringing out its good outcomes as it is supposed to be.
- iii. Lack of Functional Equipment, Obsolete Machines and Poor Laboratories: most of the institutions offering Business Education programmes lack adequate functional equipment, workshops, laboratories, and machine as a result of poor funding. Awodi (2000) acknowledged that funding of Business Education is below expectation which has resulted in poor or lack of necessary workshops and training facilities and consequently dearth of Business Education teachers. This situation contradicts the characteristics of Business Education which states that the living environment must be a replica of what is found in the workplace (Azuka, Nwosu, Kanu & Agomuo 2006). Even where these facilities are available, they are not adequate compared with the number of students that make use of them. Typewriters that have been in use for some decades are still found in some of the typing laboratories.

### **Implications of Funding Business Education in a Depressed Economy**

Any nation that is experiencing economic downturn is always confronted with the problem of unemployment, and as a result, always push the nation on the edge of a precipice. According to Anao (2009), when there is a global economic recession and mass youth unemployment, one of the solutions is to impart vocational and technical education to the youths so they can be economically productive to lift the nation out of economic depression. Okoroma (2004) espoused that Business Education, like other disciplines, has been affected by persistent economic depression in Nigeria. When a nation is experiencing an unstable economy, it will automatically affect almost all aspects of its national life, including education. Education sector has witnessed poor funding and improvement because the government is saddled with too many responsibilities with meagre resources. The effect of this on Business Education is enormous. For instance, Edokpolor and Owenvbiugie (2017) noted that underfunding of Business Education

has devalued the image and reputation of the programme and contributed to the high rate of unemployment and poverty in the country.

Economic depression in Nigeria is worsened by the global fall in the prices of crude oil, unfavourable balance of payments, depletion of foreign reserves, high debt profiles, insecurity, inflation, corruption among many other factors. Crude oil is the mainstay of Nigeria's economy, and since there has been a fall in its price in the international market, it has greatly affected the nation's revenue and balance of payments. In a depressed economy, many people, including young and old, tend to lose their means of livelihood. By implication, unemployment is always skyrocketing. When this happens unabated, it may push people to commit crimes and engage in other nefarious activities to survive. When crimes escalate, it threatens public peace and security of lives and properties, leading to the stretching of the already over-burdened security apparatus. More attention would then be focused on security at the expense of other equally important sector like education. At this stage, what people need are deliberate policies that will foster empowerment and instil skills for self-employment which are all embedded in vocational and technical education of which Business Education is an integral part. In essence, funding Business Education will empower citizenry and reduce crime.

### **The Way Forward**

Despite the challenges, there are a number of things that can be done to address the challenges of funding Business Education in a depressed economy. One important step is to raise awareness of the importance of Business Education for economic development. This can be done through public education campaigns and advocacy by business leaders and other stakeholders. Another step is to diversify the sources of funding for Business Education. This could include increased private investment, philanthropic giving, and government funding from outside of the education budget. Governments should recognize the importance of Business Education and prioritize its funding. Adeleke (2021) posited that for effective administration of Business Education programmes for national development, there is need for increased funding. Business Education plays a vital role in training the future leaders of the economy. By investing in Business Education in governments can help to stimulate economic growth and create jobs. Business Education stakeholders should explore new ways to raise revenue. This could include partnerships with the private sector, offering fee-for-service programs, or developing online and distance learning programs. Also, more focus should be on increasing the efficiency and effectiveness of their programmes. This could involve reducing costs, streamlining operations, and improving the quality of teaching and learning. Finally, it is important to make Business Education more accessible and affordable for all students. This could be done through scholarships, grants, and other forms of financial assistance.

### **Conclusion**

In a period of economic depression, education sector is always at the receiving end. Business Education, being a subset of the vocational education, is usually underfunded. Meanwhile, Business Education plays a critical role in economic development. It has the mandate to provide skills and knowledge necessary for individuals to start and run businesses, and to create a workforce that is adaptable and innovative. For Business Education to fulfil its mandate, especially in a depressed economy, it must enjoy adequate funding. It must not just be an allocation of money on paper but with the actual release of the funds. As explored in this paper, various strategies can be implemented to secure funding, ranging from government

initiatives and corporate sponsorships to philanthropic contributions and innovative financing models. It is essential for stakeholders to evaluate the cost-effectiveness and efficiency of these strategies to ensure the sustainable development of Business Education programmes. By implementing sound funding strategies, educational institutions can continue to provide high-quality education and contribute to the recovery and growth of business sectors during economic depression.

### Suggestions

The following suggestions are made for funding Business Education in a depressed economy:

3. Government should continue to invest in Business Education, even during times of economic hardship. This is because Business Education is essential for long-term economic growth.
4. Governments should work with businesses and other stakeholders to develop innovative funding models for Business Education. This could include public-private partnerships and other forms of collaboration.
5. Governments should establish dedicated funding streams for Business Education. This could be done through a variety of mechanisms, such as tax breaks for businesses that donate to business schools or government-sponsored loan programs for business students.
6. Business Education stakeholders should develop partnerships with businesses and other organizations. These partnerships can provide financial support, access to internships and job opportunities, and expertise in specific areas of business.
7. Business Education experts should offer fee-for-service programmes. This could include executive education programmes, short-term courses, and consulting services.

### References

- Adebayo, A. A. (2013). Youths' unemployment and crime in Nigeria: A nexus and implications for national development. *International Journal of Sociology and Anthropology*. 5(8), 350-357.
- Adeleke, A. F. (2021). Business Education: a basic tool for national development in Nigeria. *Al-Hikmah Journal of Education*. 8(1), 79-84.
- Ademiluyi, L. F., Aransiola, M. J., Nuhu, S. I., Nwabufo, B. N. & Sangodapo, A. (2023). Availability and utilization of skills acquisition resources for teaching and learning in Business Education in Kwara State. *Nigerian Journal of Business Education (NIGJBED)*. 10(1), 300-307.
- Agomuo, E. E., Azuka, E. B., Kanu, I. N. & Nwosu, B. O. (2006). *Foundation of Business Education in Nigeria*. Dataword Publications.
- Ajoma, U. C. (2008). Funding: A strategy for improving Business Education in a globalized society. *ABEN Book of Readings* 1(1), 29-36.
- Anao, A. R. (2009). The role of Business Education in a developing economy. *Nigerian Journal of Business Education* 1(1), 19-24.
- Awodi, Y. W. (2000). *National Priority Needs for Resource Management in Technical and Vocational Education*. National Conference on Technical Vocational Education in Nigeria: Vision and Action. National Centre for Women Development.
- Dianto, S. U. & Idawati, T. S. (2020). Business Education funding partnership. *Proceeding International Conference on Culture, Language and Literature (IC2LC)*. 336-344, <https://proceeding.umsu.ac.id/index.php/ic2lc>

- Dikeocha, L. U., Nwagu, C. C. & Nwaiwu, B. N. (2015). Funding: A challenge to effective implementation of Business Education programme in colleges of education in South Eastern Nigeria. *Nigerian Journal of Business Education*, 2(2), 60-68.
- Edokpolor J. E. & Owenvbiugie, R. O. (2017). Business Education in Nigeria: issues, challenges and way forward for national development. *Journal of Collaborative Research and Development (JCRD)*, 5(1), 1-25.
- Eze, C. P. & Nwosu, C. D. (2015). Funding Business Education in Nigeria. *Nigeria Journal of Business Education*, (2), 69-74.
- Federal Government of Nigeria (2013). *National Policy on Education* (6th Ed). NERDC Press.
- Gbadegesin, A. A. (2020). Funding Business Education as a sustainable tool for national economic development in Nigeria. *Trailblazer International Journal of Educational Research*, 1(1), 54-60.
- Iweh, J. P. & Ufot, S. I. (2012). Challenging of information and communication technology and Business Education teachers' productivity in tertiary institutions in Akwa-Ibom State. *ABEN Journal*, 8(2), 317-328.
- Ojiambo, P. C. (2009). Quality of Education and its Role in National Development: A Case study of Kenya's Educational Reforms. *Kenya Studies Review*. 1(1), 133-149.
- Okoroma, N. S. (2004). Funding Business Education in a depressed economy: Implications for standards in tertiary institutions in Rivers State. *The Nigerian Academic Forum*, 6(5), 8-21.
- Olorunmolu, O. J., Olufunwa, A. S. & Waziri, A. A. (2013). Funding of Business Education programmes for quality assurance in colleges of education in Kaduna State. *Nigerian Journal of Business Education (NIGJBED)*. 1(2), 106-115.
- Umezulike, A. (2015). Achieving a reliable and desirable sustainable national development through adequate funding of Business Education programme. *Nigerian Journal of Business Education*. 2(2), 83-89.

## STRATEGIES FOR UTILIZING ICT TO IMPROVE THE TEACHING OF VOCATIONAL SUBJECTS IN SECONDARY SCHOOLS IN ENUGU STATE

<sup>1</sup>Cornelius Ekene Odoh & <sup>2</sup>Roseline Egbunu

<sup>1</sup>Department of Science Education,  
Faculty of Education,

National Open University of Nigeria, Abuja.  
codoh@noun.edu.ng, 07064916604

<sup>2</sup>Department of Science Education,  
Faculty of Education,

National Open University of Nigeria, Abuja.  
regbunu@noun.edu.ng

### Abstract

*This study investigated strategies for utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State. Two research questions and four null hypotheses were formulated and tested at a 0.05 level of significance. A descriptive survey research design was adopted for this study. The population for the study is made up of all the 114 SSS two and three vocational subject teachers currently serving in the Enugu State Science, Technical, and Vocational schools in Enugu State. Among them are 38 male and 76 female teachers. A total population of 114 was used for the study. No sampling was done, because of the design adopted and the population is manageable. The instrument has two sections; A and B. Section A contains the respondents' personal information while section B is divided into two clusters with 30 items structured to assist the researcher in providing clues to the research questions that guided the study. The overall reliability index stood at .86 indicating that the instrument is highly reliable and suitable for the study. The data collected were analyzed using mean with standard deviation to answer the research questions. The null hypotheses were tested using t-test statistics at 0.05 level of significance. Based on the result of this study, the researcher concluded among others that: demonstration strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This is also supported by the fact that there is no significant difference in the mean ratings of male and female vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State, but there is a significant difference in the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.*

**Keywords:** *Strategies, Utilization, ICT, Teaching, Vocational subjects, Demonstration and Discovery strategy*

### Introduction

Information and Communication Technology (ICT) is a broad term for Information Technology (IT), which refers to all communication technologies including the internet, wireless networks, cell phones, computers, software, middleware, video conferencing, social networking, and other media applications and services enabling users to access, retrieve, store, transmit and manipulate information in a digital form. Olusegun (2012) defined ICT as the integration of computing, networking, and information processing technology and their application. In the opinion of Dinesh (2016), ICT is a common term referring to the technologies used for collecting, storing,

editing, and communicating information in various formats. Ezekoka (2013) asserted that ICT means the use of computer-based technology and the Internet to make information and communication services available to a wide range of users. It is a term that includes any communication device or application encompassing radio, TV, or cellular phones, computers and networks, hardware and software, and satellite systems among others (Taskhile, 2019). Taskhile further noted that ICT plays a vital role in the current and future development of societies and nations. Kassane (2017) stated that ICT has affected all spheres of life, especially the education system.

Information and Communication Technology (ICT) supports activities involving the creation, storage, manipulation, and communication of information together with their related methods, management, and applications (Oliver and Chapman, 2019). It has revolutionized every aspect of human endeavor particularly education which is the “blood” that sustains all forms of growth and development globally. The global trend of focus and emphasis on the use of ICT in all works of life has been widely acknowledged. The National Policy on Education (2014) stated that in recognition of the prominent role of Information and Communication Technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is an urgent need for the integration of Information and Communication Technology (ICT) into all levels of education in Nigeria. Nwosu and Udofia (2012) asserted that Information and Communication Technology is an imperative tool for quality education.

The integration of ICT in education has developed positive changes in educational institutions. These positive changes brought in by computers in education necessitated the provision of appropriate infrastructure and ICT facilities, encompassing electricity, telephone, educational software, internet facilities, and hardware such as computers, scanners, and multimedia projects among others by the government (Satherasinghe, 2017). Baraket and Bataineh (2018) posited that in education, the use of ICT in the teaching process is seen as a positive change from the use of old-fashioned teaching process.

It is important to note that the role of ICT as a change agent for quality education can never be over-emphasized. Adeboye (2011) posited that ICT helps in shifting the role of the teacher from that of sole information provider to a facilitator of learning. Osuji (2012) asserted that the infusion of ICT in education is seen as a means to enhance and extend not only the instructional method but also the learning process. The United Nations Educational, Scientific and Cultural Organization (UNESCO) (2017) stipulated that the benefits of applying ICT in education include, helping to improve quality of education, expand access to educational opportunities, develop learner-centered teaching, improve learning outcomes, and motivate learners. In the opinion of Ugwu and Nnaekwe (2019), the role of ICT in education includes; quick access to information, easy availability of updated data, collaborative learning, increasing divergent thinking ability in students, respect for the varied nature of human life, facilitation of learning processes, wider learning opportunities for learners. It thus, becomes necessary to ascertain strategies for utilizing ICT to improve teaching especially the vocational subjects in secondary schools. This is what this study is set to do because it is a gap that is long overdue to be filled.

The secondary school is one aspect of educational institutions in Nigeria that is designed specifically to train and prepare students for middle-level services in both manufacturing and service industries. One of the objectives of secondary education according to Atuyi (2019) is the acquisition of both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society. It must be emphasized that secondary school education in Nigeria is for six years' duration, junior secondary school (3 years) and senior secondary school (3 years). The two stages are both vocational and academic. The broad goal of secondary education as stated in the National Policy on Education is to prepare the individual citizen for useful living within the society and preparation for higher education (FRN, 2013). Antai and Anam (2019) asserted that education

nurtures better citizens and helps to upgrade the general standard of living in a society. In the opinion of Adeogun (2010), education is a major instrument for tackling unemployment, poverty, and ignorance. It is on this basis that the Federal Republic of Nigeria (FRN, 2013) outlined in her National Policy on Education, the cardinal aims of education which include among others:

- the development of the intellectual capacity of individuals to understand and appreciate their environment; and
- the acquisition of both physical and intellectual skills that will enable individuals to develop into useful members of the community. These skills are acquired in formal education settings from primary, secondary, and tertiary institutions such as universities, polytechnics, and colleges of education. For this study, the focus will be on secondary education.

The role of ICT in skilled manpower development through vocational subjects in secondary schools cannot be overemphasized. In this technology-driven age, everyone requires ICT competence to survive. Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Adomi and Anie, 2016). This calls for the early acquisition of ICT skills by students and the teaching of vocational subjects in secondary schools. According to Lemke and Coughlin (2019), ICTs have the potential to accelerate, enrich, and deepen vocational skills, motivate and engage students, help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthen vocational teaching in Nigerian secondary schools. The ability to use computers effectively has become an essential part of everyone's education. The demand for computer/ICT literacy is increasing in Nigeria, because employees realize that computers and other ICT facilities can enhance efficiency. On the other hand, employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literate. With the high demand for computer literacy, the teaching and learning of vocational subjects in secondary schools has become a major concern among researchers and stakeholders in education (Yusuf, 2015). Emuku and Emuku (2000) asserted that new instructional techniques that use ICTs provide a different modality of instruments. For students, according to the authors, ICT usage allows for increased individualization of learning. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement, which is currently not fully implemented in most secondary schools. In a related view, Goshit (2016) stated that ICT integration and application in schools' curricula in Nigeria will prove beneficial in improving Nigeria's vocational education system and giving students a better education. Given the above, Aleke (2016) posited that utilizing ICT to improve teaching vocational subjects in secondary schools, requires the adoption of some techniques and strategies. The ICT strategies, that secondary school teachers can employ in teaching vocational subjects according to Odumosu (2014), include; demonstration strategy and discovery strategy.

Demonstration strategy involves the presentation of procedures and processes to be learned. Demonstration is a means of simplifying high standards for the process being presented (Udoka, 2016). Rex (2017) noted that it creates a high degree of attention, and concentration and exploits the students' interest. The skills acquired through demonstration enable the learner to develop poise and the ability to talk and act at the same time (Pettersen, 2011). Adeniyi (2011) asserted that demonstration provides a concrete and realistic visual picture of what is being presented to supplement word images and usually results in a more lasting impression. However, demonstration requires careful planning, detailed preparation, and consideration to make it effective. Udoka (2016) posited that without proper direction and guidance, students may concentrate on the teaching aids and

ignore the lesson itself. Aleke (2016), stated that a demonstration strategy makes for an easy understanding of contents and instructions as well as a discovery strategy with the use of ICT.

Discovery strategy is described as the keynote of modern education. It involves the teacher making a list of activities in his note of lesson of what students should learn using ICT tools (Odumosu, 2014). Odumosu added that students learn best by doing and find interest and enjoyment in participation. In the opinion of Wagner, Hassanein, and Head (2014) discovery strategy is quite logical in the teaching of vocational skills because it helps the students through instructional activity to discover and acquire the skill without much guidance. However, teaching by discovery is not an easy task. It requires a longer time for the students to form a generalization of their own than it is for them to learn one that is presented to them prescriptively. This means that the teacher must work harder to teach a successful discovery lesson (Odumosu 2014). A discovery activity is a lesson designed in such a way that a student, through his mental processes, discovers concepts and principles. For a student to make discoveries he has to perform certain mental processes such as observing classifying, measuring, predicting, describing, informing, etc. For example, students may discover what a nutrient is from a concept of food group or later may discover a scientific principle that nutrients only come from food (Mbah, 2016).

Research reports by Aleke (2016) and Udoka (2017) noted that the persistent poor achievement of students in vocational subjects at the Senior Schools Certificate Examination (SSCE) leaves one in doubt about the effectiveness of instructional ICT tools utilized by the teachers for teaching these vocational subjects. Several reasons have been adduced for the problem. Akinolu (2016) hinged it on poor ICT skills. Neji (2011) blamed it on learners' characteristics. Several other researchers attribute it to inadequate, inappropriate, and perhaps non-utilization of appropriate teaching strategies. These authors lamented that teaching vocational subjects in secondary schools in conventional classrooms can be defective without ICT (Olufunke, 2012 & Oludipe, 2011). Following the reactions of these authors and researchers, one may begin to question the effectiveness of secondary school teachers concerning teaching vocational subjects, without the application of the requisite ICT tools. This is so because, effective teaching of vocational subjects requires the availability of efficient teachers who will eventually, enhance the improved performance of students in vocational subjects in both internal and external examinations irrespective of their gender.

Teacher's gender is an important factor to consider in the use of ICT in teaching vocational subjects. Gender is a socially learned behavior and expectation associated with males and females (Azikiwe, 2011). It is described as the biological sex of individuals in terms of being male or female. In Nigerian society, there are differences and inequalities between women and men in responsibilities assigned, activities taken, access to and control over resources as well as possession and application of skills. (Adigwu, 2014). Eunice, Selpher, and David (2015) observed that there is a significant relationship between secondary school teachers' gender and ICT usage in secondary school teaching. Aleke (2016) revealed that male secondary school teachers were effective in the utilization of ICT more than their female counterparts. The issues of gender have gained much attention with little or no conclusion. This study, therefore, intends to ascertain male and female teachers' utilization of ICT in improving the teaching of vocational subjects in Enugu State.

Another factor that may influence teachers' utilization of ICT in improving the teaching of vocational subjects in secondary schools in Enugu State is location. The location has to do with the area or place where the school is situated. Location may be defined as a place of settlement, activity, or residence. Ibe (2018) noted that schools located in urban areas are better financed and funded than those in rural areas. Wagner, Hassanein, and Head (2014) pointed out that ICT facilities are in low supply in rural schools, thus, the utilization of ICT in teaching in rural secondary schools might differ

from that of urban secondary schools. A study by Leem and Lim (2017) revealed that rural and urban school teachers differ in ICT utilization as a result of poor security situation in rural schools.

The area of this study includes both urban and rural, hence the study will determine if strategies for utilizing ICT tools to improve the teaching of vocational subjects in secondary schools will be influenced by the location of the schools.

### **Purpose of the Study**

The main purpose of the study is to determine strategies for utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State. Specifically, the study intends to;

1. ascertain the extent to which demonstration strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State.
2. find out the extent to which discovery strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State

### **Research Questions**

The following research questions guided the study:

1. To what extent does demonstration strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State?
2. To what extent does the discovery strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State?

### **Hypotheses**

The following null hypotheses were formulated and tested at a .05 level of significance.

- H<sub>01</sub>:** There is no significant difference in the mean response scores of male and female teachers on the extent to which demonstration strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State.
- H<sub>02</sub>:** There is no significant difference in the mean response scores of male and female teachers on the extent discovery strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State.
- H<sub>03</sub>:** There is no significant difference in the mean response scores of urban and rural teachers on the extent to which demonstration strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State.
- H<sub>04</sub>:** There is no significant difference in the mean response scores of urban and rural teachers on the extent discovery strategy will assist in improving the teaching of vocational subjects in secondary schools in Enugu State.

### **Method**

A descriptive survey research design was adopted for this study. The population for the study is made up of all the 114 SSS two and three vocational subject teachers currently serving in the Enugu State Science, Technical, and Vocational schools in Enugu State. Among them are 38 male and 76 female teachers. This is based on the data obtained from the Enugu State Science, Technical, and Vocational Schools Management Board (STVSMB, 2023/2024). A total population of 114 was used for the study. No sampling was done, because of the design adopted and the population is manageable. The researcher developed a self-structured instrument with the title "Strategies of Utilizing ICT in Teaching Vocational Subjects" (SUICCTVS). The instrument has two sections; A and B. Section A contains the respondents' personal information while section B is divided into two clusters with 30 items structured to assist the researcher in providing clues to the research questions that guided the study. Cluster 1 is on demonstration strategy with 15 items. Cluster 2 is on discovery

strategy with 15 items. The response format for the instrument is a 4-point scale of Very Great Extent (VGE)=4 points: Great Extent (G E) =3 points: Little Extent (LE)= 2 points. VeryLittle Extent(VLE)=I point.

The instrument was validated by two experts, two from the Department of Technical and Vocation Education, and one from the Measurement and Evaluation unit, Mathematics and Computer Department, all from the Faculty of Education in Enugu State University of Science and Technology. The researcher conducted a trial test using 20 respondents from Secondary school teachers in Ebonyi State. The responses to the various items of the questionnaire were used in computing its reliability using the Cronbach Alpha reliability estimate. Reliability indices of .68, and .75, were obtained for clusters 1 and 2, respectively. The overall reliability index stood at .86 indicating that the instrument is highly reliable and suitable for the study. The researcher and the research assistants retrieved 114 copies of the distributed questionnaire instrument. The data collected were analyzed using mean with standard deviation to answer the research questions. The null hypotheses were tested using t-test statistics at.05 level of significance. For the decision rule, all the items with a mean score of 2.50 and above were accepted while those with a mean score below 2. 50 were rejected. For the hypotheses, if the t-calculated at a .05 level of significance is less than the t-value or critical value of the t-test, the null hypotheses were not rejected, but if otherwise the null hypotheses were rejected.

**Results**

**Research Question 1:**

To what extent does demonstration strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State?

**Table 1: Mean Responses and Standard Deviation of the Respondents on the Extent Demonstration Strategy Assist in Improving the Teaching of Vocational Subjects in Secondary Schools Enugu State.**

N=114									
S/N	Extent demonstration strategy improve the teaching of vocational subjects include;	VGE	GE	LE	VLE	$\bar{X}$	SD	DEC	
1	arousing the spirit of discovery in students	42	34	38	0	3.04	0.84	GE	
2	motivate students in the teaching and learning process	41	32	39	2	2.98	0.88	GE	
3	improving students concentration	36	45	32	1	3.02	0.79	GE	
4	keeping students active in the learning process	31	31	31	21	2.63	1.07	GE	
5	using models in explanation to draw students' attention	22	32	28	32	2.39	1.09	LE	
6	helping students to understand the topic easily	42	42	25	5	3.06	0.88	GE	
7	improve students' concentration through questioning	32	24	35	23	2.57	1.10	GE	
8	drawing students' interest in learning with the aid of a blackboard during demonstration.	19	35	25	35	2.33	1.08	LE	
9	imparting maximum knowledge to students	34	44	36	0	2.98	0.79	GE	
10	improving students' psychomotor ability	31	30	31	22	2.61	1.08	GE	
11	enhancing the cognitive domain of students	24	34	27	29	2.46	1.09	LE	
12	easy evaluation of students	43	41	30	0	3.11	0.79	GE	
13	attracting students' interest using visual posters	47	34	33	0	3.12	0.83	GE	
14	motivate students using PowerPoint	43	42	24	5	3.08	0.87	GE	
15	using visual flip to help students understand easily	28	22	37	27	2.45	1.11	LE	
<b>Grand Mean</b>						<b>2.80</b>	<b>0.95</b>		

From Table 1 above, the results of data analysis for research question 1 indicated that items (1,2,3,4,6,7,9,10,12,13, and 14) had mean responses that were higher than the cut-off point of 2.50. Only items (5,8,11, and 15) had mean responses that were below the cut-off point of 2.05. The value of the grand mean was also high. This implied that the respondents agreed that demonstration

strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Research Question 2**

To what extent does discovery strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State?

**Table 2: Mean Responses and Standard Deviation of the Respondents on the Extent Discovery Strategy Assist to Improve the Teaching of Vocational Subjects in Secondary Schools Enugu State.**

N = 114								
S/N	Extent discovery strategy assists in improving the teaching of vocational subjects including;	VGE	GE	LE	VLE	$\bar{X}$	SD	DEC
16	developing students' a sense of independence	41	36	36	1	3.03	0.85	GE
17	foster curiosity in students	37	35	41	1	2.95	0.85	GE
18	Improve students memorization	29	47	38	0	2.92	0.77	GE
19	improve students' collaboration with peers in problem-solving	35	42	37	0	2.98	0.79	GE
20	helping students to explore objects	35	42	37	0	2.98	0.79	GE
21	ensures a higher level of retention	56	58	0	0	3.50	0.50	GE
22	improving student's observation skills	29	47	38	0	2.92	0.77	GE
23	developing students' metacognitive skills	35	42	37	0	2.98	0.79	GE
24	help students generate their problem-solving strategy	56	58	0	0	3.49	0.50	GE
25	enhancing students' creative skills	29	47	38	0	2.92	0.77	GE
26	developing a sense of independence in students	29	47	38	0	2.92	0.77	GE
27	builds on students' prior knowledge and understanding	29	48	37	0	2.93	0.76	GE
28	support active engagement of the students in the learning process	29	48	37	0	2.93	0.76	GE
29	enables the development of life-long learning skills	27	37	24	26	2.57	1.08	GE
30	making students responsible for their own mistakes and results	27	3	24	26	2.57	1.08	GE
<b>Grand Mean</b>						<b>2.97</b>	<b>0.78</b>	

From Table 2 above, the mean responses to the items (16-30) were higher than the cut-off point of 2.50, implying that the respondents agreed that discovery strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Hypothesis 1:** There is no significant difference in the mean response scores of male and female vocational teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Table 3: t-test on the mean ratings of male and female vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State**

Gender	N	Mean	Std. Deviation	t	Df	Sig.	Dec.
Male	38	2.70	1.092	1.303	112	.193	NS
Female	76	2.57	1.093				

Table 3 shows that the t value for the difference in mean rating of male and female vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State is 1.303, significant at a .193 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of male and female vocational

teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State

**Hypothesis 2:** There is no significant difference in the mean response scores of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Table 4: A t-test on the mean ratings of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.**

Gender	N	Mean	Std. Deviation	t	Df	Sig.	Dec.
Male	38	2.64	1.09	.676	112	.289	NS
Female	76	2.56	1.123				

Table 4 shows that the t value for the difference in mean rating of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State is .676, significant at a .289 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Hypothesis 3:** There is no significant difference in the mean response scores of urban and rural vocational teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

**Table 5: t-test on the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.**

Location	N	Mean	Std. Deviation	t	Df	Sig.	Dec.
Urban	97	2.54	1.090	-4.573	112	.000	S
Rural	17	3.00	.803				

Table 5 shows that the t value for the difference in mean rating of urban and rural vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State is -4.573, significant at .000 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore rejected. This means that there is a significant difference in the mean ratings of urban and rural vocational teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

#### **Hypothesis 4:**

There is no significant difference in the mean response scores of urban and rural vocational Teachers on the extent discovery strategy assists in improving the teaching of vocational subject's in secondary schools in Enugu State.

**Table 6: A t-test on the mean ratings of urban and rural vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.**

Location	N	Mean	Std. Deviation	t	Df	Sig.	Dec.
Urban	97	2.99	.845	.523	112	.596	NS
Rural	17	2.94	.814				

Table 6 shows that the t value for the difference in mean rating of urban and rural vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State is .523, significant at a .596 level of significance, which is higher than 0.05 set for the study. The null hypothesis is therefore not rejected. This means that there is no significant difference in the mean ratings of urban and rural vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

### Summary of Findings

The results of data analyses for the study revealed the following:

1. Vocational subject teachers agreed that demonstration strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This is also supported by the fact that there is no significant difference in the mean ratings of male and female vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State, but there is a significant difference in the mean ratings of urban and rural vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State.
2. Vocational subject teachers agreed that the discovery strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This is also supported by the fact that there is no significant difference in the mean ratings of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State, the mean ratings of urban and rural vocational teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State.

### Discussion of Findings

*Research question one attempted to elicit the perception of the respondents on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State. Out of fifteen items articulated to answer the research question posed only four items got a mean point that indicated little extent. This shows that Vocational subject teachers agreed that demonstration strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This finding agrees with Adeniyi (2011) who asserted that demonstration provides a concrete and realistic visual picture of what is being presented to supplement word images and usually results in a more lasting impression. It conserves time and can be used with small or large groups of any age under controlled conditions. Therefore, there is a need for an increased emphasis on i demonstration strategy in utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State.*

*Comparison between the mean response scores of male and female vocational teachers and their extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools in Enugu State, showed that there is no significant difference in the mean rating of male and female vocational teachers on the extent demonstration strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding is in line with Alhourani (2013) who argued that gender does not impact secondary school teachers' ICT utilization. Similarly, on the influence of the location of schools, it was found in this study that there is a significant difference in the mean rating of urban and rural vocational teachers on the extent demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This finding is in line with Leem and Lim (2017) who stated that rural and urban school teachers differ in ICT utilization as a result of poor security situations in the rural schools. Therefore, there is a need to improve demonstration strategies of utilizing ICT to improve the teaching of vocational subjects in rural schools.*

*Research Question Two which investigated the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State, showed that Vocational subject teachers agreed that discovery strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This finding agrees with Wagner, Hassanein, and Head (2014) who posited that the discovery strategy is quite logical in the teaching of vocational skills because it helps the students through instructional activity to discover and acquire the skill without much guidance.*

*Investigation for significant difference between the mean response scores of male and female vocational teachers on the extent to which discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State. showed that there is no significant, difference in the mean rate of male and female vocational teachers on the extent to which discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State. This finding aligns with Aleke (2016) who noted that male secondary school teachers were effective in the utilization of ICT more than their female counterparts. Comparison between the mean rating of urban and rural vocational subjects teachers on the extent to which discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State, indicated that there is no significant difference in the mean rating of urban and rural vocational subjects' teachers on the extent discovery strategy assist in improving the teaching of vocational subjects in secondary schools Enugu State. This finding disagreed with Lim (2017) who noted that rural and urban school teachers differ in ICT utilization as a result of poor security situation in the rural schools. Because ICT utilization in improving the teaching of vocational subject schools in Enugu State will go a long way to improve students' abilities and performance, therefore it is important to ensure the utilization of discovery strategies of utilizing ICT to improve the teaching of vocational subjects in rural and urban secondary schools in Enugu State.*

## **Conclusion**

Based on the findings of this study and the discussions that followed, conclusions were drawn as follows:

1. Demonstration strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

2. There is no significant difference in the mean ratings of male and female vocational teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State
3. There is a significant difference in the mean ratings of urban and rural vocational teachers on the extent to which demonstration strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.
4. Discovery strategy to a great extent assists in improving the teaching of vocational subjects in secondary schools in Enugu State.
5. There is no significant difference in the mean ratings of male and female vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.
6. There is no significant difference in the mean ratings of urban and rural vocational teachers on the extent discovery strategy assists in improving the teaching of vocational subjects in secondary schools in Enugu State.

### **Educational Implication of the Findings**

The finding of this study holds implications for the chemistry teachers, students, and the government as well.

The vocational subject teachers through the study are now equipped and encouraged in the use of demonstration and discovery strategies in utilizing ICT to improve the teaching of vocational subjects in schools in Enugu State, thereby improving the teaching of vocational subjects in schools. The nature of vocational subjects' demands that they should be taught practically, but since the practical vocational lessons are rarely done effectively. This holds a serious implication on the standard and status of vocational subjects being taught in schools, therefore, these strategies will promote quick understanding by assisting learner's attention and give first-hand experiences which are not easily forgotten by students, stimulate creative expression in students, and encourage active participative and practical knowledge of the vocational subjects.

The findings of this study hold a strong implication for students as they are provided with very rich visual experience through these strategies which will allow them to manipulate materials for direct concrete experience which will boost students' achievement in both internal and external examinations.

The findings of this study hold strong educational implications to the government which is saddled with the responsibility of ensuring quality education as a vital tool for human and economic development. Efficient adoption of demonstration and discovery strategies will help to accelerate and close up the gap and inability of the government to give expected attention to the provision of educational facilities and instructional materials for teaching vocational subjects in schools in Enugu State.

### **Recommendations**

Based on the findings and implication of the results, the following recommendation was made:

1. Demonstration strategy should be highly emphasized and encouraged by the stakeholders in education for schools in Enugu State.
2. Deliberate efforts should be made by education supervisors in ensuring that the vocational subject teachers utilize demonstration and discovery strategies in utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State.

3. The school authorities should, regularly, organize seminars, workshops, and enlightenment programs on the utilization of demonstration and discovery strategies in utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State.
6. There should be an increased awareness of demonstration and discovery strategies in utilizing ICT to improve the teaching of vocational subjects in secondary schools in Enugu State.

## References

- Adeboye, R. (2011). Information and communication technology (ICT) is a compulsory course in Kwara state tertiary institutions. Retrieved from <http://dailypostng.com/institutions-to-adopt-computer-literay>.
- Adeniyi, O. (2011). Influence of shortage of human resources on the effective instruction of mathematics in secondary schools. *The Journal of World Council of Curriculum and Instruction (WCCI)*, 4(2), 176-182.
- Adeogun, A. A. (2010). *Adequacy of educational resources for quality assurance in public colleges of education in Lagos State*. Retrieved from Herp.net.org...w.../ chapter % 203, pdf.
- Adigwu, G.T (2014). Assessment of strategies adopted by principals for student conflict management in secondary school in Enugu State. *Unpublished M. Ed Thesis ESUT*
- Adomi, A. & Anie, M. D. (2016). Study of achievement motivation about academic achievement of students. *International Journal of Education Planning and Administration*, 3(1), 161-171.
- Akinolu J. N. (2016). Laboratory Use of Discarded Plastic Beverage Bottles. *Journal of Chemistry Education* 56(7) 46-49.
- Aleke, E. (2014) *Using computers in schools. Digitalopportunitiesfordevelopment*. Retrieved
- Antai, A. S. & Anam, B. (2019). We are redefining the educational objective for national productivity and economic development in Nigeria. *Paper presented at the National Conference of the National Association for the Advancement of Knowledge (NAFAK) held at Nnamdi Azikiwe University, Awka*.
- Atuyi, P. A. (2019). Information and communication technology in the Nigerian system. *Mediterranean Journal of Social Sciences*, 3(3), 1-6.
- Azikiwe A. E (2011) *The Challenge of Gender Imbalance in Nigeria Education Development*. West and Solomon Publishing co-ltd Onitsha.
- Dinesh.C. (2016) Quality assurance in a Nigerian university. *Proceeding of INTE 2014 conference 10<sup>th</sup>- 12<sup>th</sup> March 2014 Valencia Spain*.
- Emendu, N. B. (2014). The role of chemistry education in national development. *International Journal of Engineering and Science*, 3(3), 12-17.
- Emuku C. and Emuku A. (2000) Effect of small scale experiment (SSE) on students Achievement and Retention in chemistry <http://www.Monday.com> >Nigeria.
- Ezekoka, D. (2013) *Strategies for the improvisation of instructional materials for the teaching and learning of business subjects in Benue State* unpublished thesis UNN
- Federal Republic of Nigeria (2013) 6<sup>th</sup> Ed). *The National Policy on Education (Revised)*. Yaba-Lagos: Nigerian Educational Research and Development Council (NERDC) Press.

- Goshit, S.S. (2016). Problems of improvising instructional materials for the teaching and learning of physics in Akwa Ibom State secondary schools, Nigeria. *British Journal of Education*, 3(3), 27-35. Retrieved from [www.eajournals.org](http://www.eajournals.org).  
[http://learnlink.aed.org/publications/sourcebook/chapter4/computers\\_in\\_schools\\_modelfuse.pdf](http://learnlink.aed.org/publications/sourcebook/chapter4/computers_in_schools_modelfuse.pdf)
- Ibe, J. O. (2018). Assessment of secondary school chemistry teachers' quality through identification and use of laboratory apparatus in Cross River State, Nigeria. *Journal of Education and Practice*, 4(5), 90-103. Retrieved from [www.iiste.org](http://www.iiste.org)
- Kassane, V.O (2017). Teachers motivation in education, a factor for classroom effectiveness and school improvement in Nigeria. *College Student Journal* 38(1) 81-89
- Leem, L. & Lim, P. (2017). *Entrepreneurship education: A compendium of related issues*. NUS Entrepreneurship Centre Working paper, July 2010.
- Lemke, O. and Coughlin P. (2019). Availability and utilization of instructional materials for teaching chemistry in senior secondary schools. *International Journal of Novel Research in Education and Learning*, 4(3), 33-43. Retrieved from [www.noveltyjournals.com](http://www.noveltyjournals.com).
- Mba, C. C. (2016) *Improvisation and utilization of instructional materials by basic 7-9 secondary school home economics teachers in Anambra State*. An unpublished thesis submitted to the Department of Vocational Teacher Education (Home Economics Education), Faculty of Education, University of Nigeria, Nsukka.
- Neji H.A (2011) *Availability, advanced and utilization of laboratory facilities and students academic performance in chemistry in senior secondary schools in caliber education zone of Cross River State Nigeria*. Unpublished M. Ed thesis University of Calaber.
- Nnaemeka, C. A. (2019). Awareness and use of demonstration strategies by chemistry teachers in Enugu State. *International Journal of Educational Research*, 12(1), 303-309.
- Odumosu J. (2014). Teachers' perception of tutorial staff requirement of introductory technology program in Anambra State. *Journal of Technical Education Research and Development*, 1 (1), 57-68.
- Oludipe, B. (2011) Assessment of Teachers competencies in using discovery instructional Approach in secondary schools. Agricultural science in Abia State. *Unpublished Ph.D. thesis, Faculty of Education IMSU Owerri*.
- Olufunke, B. N. (2012). Effect of locally available instructional materials on students' achievement in chemistry in secondary schools. *Institute of Management Technology International Journal of the Arts and Sciences*, 2(1), 1-11.
- Olusegun, N.P (2012). *Educational Management Planning and Supervision Model for Effective Implementation*. Owerri Springfield Publishers.
- Osuji T. A. (2012). Improvisation of school science teaching equipment. *JSTAN* 2(2) 152-153.
- Petterson, M. (2011). Effects of traditional and discovery instructional approaches on learning outcomes for learners of different intellectual development: A Study of chemistry students in Zambia. *Journal of Research in Science Teaching*, 2(4), 217-227.
- UNESCO, U.O. (2017). Technical and Vocational Education and Training for the Twenty-first Century, UNESCO and ILO Recommendations.
- Wegner T, Hassanein V & Head. B (2014). Effects of computer-assisted Instruction on secondary schools Students' performance in Biology. *The Turkish Online Journal of Educational Technology (TOJET)*, 9(1), 62-71.
- Yusuf, R.L (2015) Problems Associated with the Teaching of Science and Creativity in Science Teaching Use of Safety and Cost Reducing Measures. *Journal of Teachers Education* 1(2)44-54

## VOCATIONAL EDUCATION AS A MEANS OF SERVING INDIVIDUAL AND SOCIETAL NEEDS

**Wada, B. Zira**

Department of Arts and Social Sciences Education,  
National Open University of Nigeria, Abuja.  
zwada@noun.edu.ng, 08142739421

### **Abstract**

*Vocational education programs are integral in equipping individuals with practical skills for specific careers, thereby enhancing economic independence and societal development. This study explores the multifaceted benefits of vocational education in Nigeria, addressing personal, economic, and societal advantages. Despite its potential, vocational education in Nigeria faces challenges including inadequate infrastructure, insufficient funding, negative societal attitudes, and poor policy implementation. The study reviews existing literature, highlighting the importance of skilled labour in technological advancement and economic growth, and the role of vocational education in reducing youth unemployment. Utilizing Human Capital Theory, the study examines the impact of vocational training on productivity and economic value. It also discusses the unique benefits vocational education offers to various groups, including youth, adults, dropouts, and individuals with disabilities. Recommendations include improving infrastructure, increasing funding, combating social stigma, and strengthening public-private partnerships. By addressing these challenges and implementing strategic policies, vocational education can significantly contribute to Nigeria's economic prosperity and social cohesion.*

**Keywords:** Vocation, Benefit, Individual Society, Employment Skills

### **Introduction**

Vocational education programmes offer a diverse range of structured experiences aimed at preparing members of society for specific careers. According to Anthony, Akpama, and Tawo (2021), it also helps a country become more economically independent. Technology-developed nations acknowledged the beneficial contributions that their skilled labourers made to the growth of their country, as noted by Beer and Mulder (2020), who stated that the importance of having talented technicians and craftsmen cannot be overstated for the advancement of national technology. According to the International Labour Office in Geneva (2010), one of the main objectives of the educational system is now the supply of skilled labour. Among other educational institutions, vocational schools play a crucial role in equipping a country's labour force with modern technological skills. The foundational ideas of vocational education emphasize developing a labour force that serves individuals as well as society. Evaluating the program's cost-effectiveness is really assessing the benefits of vocational education to the individual as well as to society. Cost effectiveness, according to Kaplan (2022), entails two types of measurement: (1) an assessment of efficacy (e.g., did the training accomplish its goals?) and (2) an evaluation of the financial value (e.g., were the training's results worth the expenditure of funds, time, and effort?). According to Okoro (2000), evaluating entails figuring out something's value or pointing out its strengths and weaknesses and then basing a judgment on that assessment. Thus, evaluation serves as a programme's quality control tool. A vocational education programme may be evaluated for improvement purposes, but it may also be done to support the programme's continuation or termination. The public must anticipate certain benefits

because vocational education programmes are implemented with significant public funding. Since education is more akin to social services, the results of which cannot entirely be measured in terms of monetary value, cost-effectiveness analysis is a reasonable method of programme evaluation. Whether vocational or liberal, the primary goal of any educational curriculum is to provide students with the qualities and abilities that employer's value in employees in order to sustain the society that produces them. Notwithstanding these goals, a person's value to society is determined by the skills and knowledge they apply to the work of creating a society that is responsible, visionary, and entrepreneurial (Somwethee, Aujirapongpan and Ru-zhue, 2023).

The main goal of vocational education is to help people acquire skills and Characteristics that are desirable in good worker. Mayombe (2023) identified this as a process that helps people acquire the necessary skills, talents, and competences. Benefits from this kind of programme have multiple uses. For instance, they can be divided into three categories: tangible, intangible, and intermediate. This subsequent benefit shows up as changes in behaviour and attitude brought about by new knowledge. These are just as crucial as the other two since some programmes are especially made to support mental adjustments that are necessary to address social issues. The conceptual examination of the advantages of vocational education is the main topic of this article. It provides a detailed description of vocational education, lists its advantages for both individuals and society as a whole, and makes policy recommendations regarding how best to use vocational education to address the socioeconomic issues facing the country.

### **Statement of the Problem**

Despite the recognized benefits of vocational education, Nigeria faces significant challenges in maximizing its potential. The poor state of public school facilities, inadequate government support for teachers, and low enrolment rates in vocational institutes hinder the effectiveness of vocational education. Additionally, many young people, including those with disabilities, lack access to essential educational resources, leading to increased street begging and underemployment. The existing vocational programmes are insufficiently publicized and inadequately integrated into the broader educational and economic frameworks.

### **Literature Review**

The National Policy on Education (NPE) defines vocational education as an aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge (Federal Government of Nigeria, 2004). This type of education is designed to prepare individuals for specific trades, crafts, and careers at various levels, primarily focusing on practical activities, manual skills, and applied sciences. Vocational education has long been recognized as a crucial component of economic and technological development. Anthony, Akpama, and Tawo (2021) emphasize its role in fostering economic independence by creating a skilled labour force. Similarly, Beer and Mulder (2020) underscore the importance of talented technicians and craftsmen in advancing national technology. The International Labour Office in Geneva (2010) highlights the educational system's objective of supplying skilled labour, stressing the pivotal role of vocational schools.

Evaluating the cost-effectiveness of vocational education involves assessing both its efficacy and financial value (Kaplan, 2022). Okoro (2000) suggests that evaluation serves as a quality control tool, ensuring programs meet their objectives and justify public investment. Mayombe (2023) identifies vocational education as a means of acquiring necessary skills and competencies, which provide tangible, intangible, and intermediate benefits. This literature

underscores the multifaceted advantages of vocational education, from personal development to societal progress.

Human Capital Theory, proposed by Becker (1964), serves as the primary theoretical framework for understanding vocational education's impact. This theory posits that investments in education and training enhance individuals' productivity and economic value. Vocational education, by equipping individuals with specific skills, increases their employability and income potential, thereby contributing to economic growth.

### **Unemployment among Nigerian youth**

Nigeria, the most populous and largest economy in Africa, is facing a "youth bulge" as a result of its fast population growth, which is pushing a sizable section of its working-age population into the labour force (Virk, Nelso and Dele-Adedeji, 2024). It is projected that over 66 million Nigerians would reach working age between 2010 and 2030 (Price, 2019). Nonetheless, Nigeria is ranked low on the Human Development Index by the UN, with 30.9% of its people living in poverty (UNDP, 2023; World Bank 2023). The younger generation's potential for productivity is limited by their lack of access to basic healthcare and education, as well as by their lack of meaningful employment opportunities in weak states. Notable figures show that 35% of Nigerians aged 15 to 34 do not have a job, while 28% of youth are legally classified as underemployed (Federal Ministry of Youth Development (FMYSD) 2022). Lack of jobs and unemployment is a major concern for people in Nigeria which is very dangerous to an individual and the society at large.

### **Importance and Role of Vocational Education**

Vocational education plays a pivotal role in preparing individuals for specific careers, contributing to both individual development and societal needs. It provides structured experiences and practical skills that are directly applicable to various trades and professions. Anthony, Akpama, and Tawo (2021) highlight that vocational education enhances a country's economic independence by producing a skilled workforce. Beer and Mulder (2020) further assert that the advancement of national technology heavily relies on skilled technicians and craftsmen.

### **Economic and Social Benefits**

The economic benefits of vocational education are significant. According to the International Labour Office (2010), one of the educational system's primary objectives is to supply skilled labour, which is crucial for economic development. Vocational education also addresses social issues such as unemployment and social inequality. Mayombe (2023) categorizes the benefits into tangible (employment and income), intangible (self-esteem and job satisfaction), and intermediate outcomes (behavioural and attitudinal changes).

### **Evaluation and Cost-Effectiveness**

Evaluating vocational education programs is essential for ensuring their effectiveness and efficiency. Kaplan (2022) describes cost-effectiveness as a dual measurement of efficacy (achievement of training goals) and financial value (worth of outcomes relative to expenditure). Okoro (2000) emphasizes that evaluation serves as a quality control tool, helping to identify strengths and weaknesses for program improvement.

## Challenges of Vocational Education in Nigeria

Vocational education is vital for equipping individuals with practical skills needed for specific trades and contributing to economic development. However, vocational education in Nigeria faces numerous challenges that hinder its effectiveness and limit its impact on reducing youth unemployment. These challenges include inadequate infrastructure, insufficient funding, negative societal attitudes, poor policy implementation, lack of industry collaboration, and economic constraints.

*1. Inadequate Infrastructure and Resources:* Many vocational institutions in Nigeria suffer from inadequate infrastructure and resources. Facilities are often outdated, and there is a lack of essential training materials and modern equipment necessary for effective practical learning (UNESCO, 2021). This inadequacy hampers the quality of education and training that students receive, making it difficult for them to acquire relevant skills for the labour market.

*2. Insufficient Funding:* Vocational education programs in Nigeria frequently receive inadequate funding from the government. Budget allocations often prioritize traditional academic institutions over vocational training centres (International Labour Office, 2010). This lack of financial support leads to poorly maintained facilities, underpaid instructors, and limited availability of training materials, all of which reduce the quality and appeal of vocational education.

*3. Negative Societal Attitudes:* Societal attitudes towards vocational education in Nigeria are often negative. Vocational training is commonly perceived as a less prestigious alternative to academic education, reserved for those who are unable to succeed in traditional academic paths (European Training Foundation, 2019). This stigma discourages many young people from pursuing vocational education, despite its potential to provide valuable skills and employment opportunities.

*4. Poor Policy Implementation:* While there are policies aimed at promoting vocational education in Nigeria, their implementation is often ineffective. Issues such as bureaucratic inefficiencies, corruption, and inconsistent policy enforcement hinder the development and execution of effective vocational training programs (Anthony, Akpama, & Tawo, 2021). These problems prevent vocational education from reaching its full potential and limit its impact on youth employment.

*5. Lack of Industry Collaboration:* Effective vocational education requires strong collaboration between training institutions and industries to ensure that the skills being taught are relevant to current job market demands. However, in Nigeria, there is often a disconnect between vocational training programs and industry needs (Baranidharan, 2023). This gap results in graduates who are not adequately prepared for available jobs, further contributing to youth unemployment.

*6. Economic Constraints:* Economic constraints, such as widespread poverty and high unemployment rates, also impact vocational education in Nigeria. Many families cannot afford the costs associated with vocational training, including tuition fees, tools, and materials (UNICEF, 2022). Additionally, the informal nature of much of Nigeria's economy means that even those who complete vocational programs may struggle to find stable, well-paying jobs.

*7. Low Enrolment and Retention Rates:* Low enrolment and retention rates in vocational education programs are significant issues. Factors such as inadequate facilities, poor perception of vocational education, and financial constraints contribute to low participation rates (UNICEF, 2022). Many students drop out of vocational programs due to these challenges, limiting the number of skilled workers entering the labour force.

8. *Inadequate Training of Instructors:* The quality of vocational education is heavily dependent on the expertise of the instructors. In Nigeria, many vocational education instructors are inadequately trained and lack the necessary industry experience to provide effective training (International Labour Office, 2010). This shortfall affects the quality of education and the employability of graduates.

### **Personal Advantages**

It is important to identify the people who can benefit from vocational education before focusing on its specific advantages. The following five categories of individuals have been designated by the European Centre for the Development of Vocational Training (2011) as being eligible for vocational education programmes:

1. Youth are enrolled in secondary schools full-time. They can enter the workforce with the information, abilities, and attitudes gained from a vocational education plan tailored to their needs.
2. Adults and youth are enrolled in post-secondary institutions, where they can get instruction or training for jobs requiring a higher level of technical or trade expertise.
3. Young individuals who might have dropped out of school to start their first steady job. A large number of them drop out of school to work in jobs that only require rudimentary training.
4. Individuals who require special education help or a modified vocational plan in order to succeed in conventional vocational programmes due to academic, social, economic, or other handicapping conditions.
5. Elderly individuals who have worked for a while. Because of technical advancements in industries and new discoveries and inventions in agriculture, many of these workers find themselves in need of training.

The state of public primary and secondary school facilities in Nigeria, coupled with the government servants' treatment of teachers like second-class citizens, has led to the counterintuitive assumption that Nigerian kids who graduate from these institutions are "dropouts." Vocational education is accessible to everyone on principle. These young people with academic difficulties, whom the European Training Foundation (2019) referred to as "dropouts," belong to a different category that can benefit from vocational training. For individuals who may benefit from it, vocational education takes into account unique experiences and a range of skill levels. It is true that the majority of people who enrolled in vocational education programmes either lack employable skills or want to acquire the necessary job skills in order to get ready for a job transition. Therefore, participation in vocational education programmes aids in participants' ascent through changes in employment status, pay increases, and social and economic societal strata. A worker's pay will probably increase in proportion to the newly acquired skills for the job. As a result of increased socioeconomic mobility, people are more driven to update their knowledge and skills professionally in order to satisfy the demands of vocational education. This task, according to Yustus, Saidu, and Giroh (2021), is to generate workers who are skilled and flexible enough to adjust to changing circumstances. Comparably, by fostering healthy work habits, vocational education fosters job satisfaction and a sense of accountability, finally eliminating self-alienation and absenteeism, which are prevalent among low-income earners. Vocational education equips everyone with employable employment skills, regardless of their own interests and aptitudes. Students with regular requirements and those with special needs are equally able to engage in the vocational curriculum of their choice. Individuals

who need extra services or assistance to succeed in a standard vocational training programme or who need a modified vocational education curriculum are classified as special needs learners by UNESCO (2021). Nigeria is home to more than 100 million people, of which the UNICEF fact sheet (2022) stated that only 871 males and 587 females were enrolled in vocational institutes and that the population of impaired children of primary school age is projected to be between 5 and 7 million. The research blames the low enrolment at most ordinary schools for their inadequate capacity to meet the educational demands of the various groups of children with disabilities. According to the research, the issue here is that disabled children who lack access to basic educational resources frequently become vagrants on the streets. These street vendors were not able to be relocated or given proper rehabilitation by numerous government initiatives and programmes. For example, street beggars were removed from the streets in towns like Kano, Lagos, and Kaduna during the 1999 FIFA Under 23 World Cup competition in Nigeria, but as soon as the match ended, the beggars returned to the streets (Gloria & Samuel, 2012). People with disabilities pursuing vocational training Professional establishments like Yola's Blind Workshop, Jadda's Special Education Centre, Gindiri, Plateau State's COCIN Centre for the Handicapped, and numerous other such establishments nationwide never send their students back to the streets as beggars. Here, vocational education is successful when many government initiatives aimed at the rehabilitation of disabled people fall short. It is obvious that vocational education benefits society when disabled people benefit from it. The fundamental tenet of vocational education is to provide a person with a regular job or profession in order to provide them with a sense of identity and a way to work towards self-esteem.

### **Benefits to Society**

A stable economy, a balanced work force supply and demand, improved financial security, job happiness, and individual competency are all benefits of vocational education for society. Given that a man and society cannot be understood independently of one another, man must continue to endeavour to fulfil both the demands and desires of society and himself, according to Ekpenyong (2000). Working tirelessly, a man might increase his standard of living by turning the resources of his country into commodities and services. According to Cherry and Goldman (2022), a person's definition of self or how other people describe them depends on the type of work they do. He emphasized once more how the individual's work appears to be more important than the individual. It is nearly impossible to distinguish with precision between a person's personal role and the role of the human community that he belongs to. Hussain and Korban (2014) observed in their writings about society and man that every man must act to meet both his own wants and the requirements of the social institutions that support and surround him. An essential factor in drawing industries to a town is the calibre of its vocational programs. Existing educational programmes and the supply and demand for labour locally reflect the right employment circumstances in a community and, to a considerable extent, reinforce local conditions that may give rise to community goals. Anthony, Akpama, and Tawo (2021). state that the local situation consists of the following:

1. Lower unemployment rates among target populations, such as youth and adults between the ages of twenty and thirty.
2. Provide a qualified workforce for newly established, growing businesses;
3. Retrain underemployed people or give women greater educational chances.

The need for new industries and the availability of skilled people are two effective strategies for quickly reducing unemployment in any given area. According to Baranidharan (2023), the

demand for technical workers is increasing twice as quickly as that of any other category, while the number of jobs available to unskilled workers is dropping very quickly.

While there is no employment for the uneducated, there is enough for the highly competent, according to Okoro (1999), who made this observation in his contribution. The emergence of new industries contributes to the economic growth of a society or a community by generating employment, income, and a larger state tax base. A decline in funding for the social sector occurs when job possibilities become available. To improve the effectiveness and efficiency of other services, money saved in social services can be reallocated to them. Decreases in street hawking and vandalism are also reasonable to anticipate with lower unemployment. Programmes for vocational education assist in educating pupils who are not very interested in academic subjects. However, this should not be interpreted as implying that students in vocational education are less gifted than those in liberal arts colleges. The behavioural component of education is not overlooked by formal vocational training; on the contrary, it results in a workforce that is well-behaved and driven. Cognitive and social skills play a major role in vocational education by helping students overcome their innate egocentricity and work together on shared tasks. In the end, this cooperative job handling results in the efficient creation of commodities and services that everyone needs to live decently. The performance of a country's economy is directly correlated with the skill level of its labour force. The staff needs to be trained and kept on the job in the areas they oversee in order to reach proficiency. In a free business system, having a workforce with proper training is critical to both society and the economy, as employee education and training form the cornerstone of any developed and successful economy. It is also clear that equality, not quantity, is the key to effective service in a technologically advanced society. Based on these observations, the contention is that economic growth is facilitating by vocational education. The creation of small businesses is an additional area in which vocational education benefits society. Graduates of vocational education programmes could succeed on their own and eventually help the economy of the country by hiring others.

### **Conclusion**

Vocational education empowers people economically by training them for the workforce. This benefits both the person and society. Vocational education offers solutions to the problems of street begging, street hawking, vandalism, and the hopelessness of primary and secondary school dropouts. It integrates the disabled, the disadvantaged, the incarcerated, the unemployed, and the talented into the mainstream of a nation's workforce. A country's economic prosperity and the social cohesion of its diverse societies are direct results of vocational education's social and economic benefits.

### **Suggestions**

To address these issues and maximize the potential of vocational education, the following recommendations are proposed:

1. **Improve Infrastructure and Funding:** Governments and private sector stakeholders should invest in enhancing the infrastructure and resources of vocational institutions to ensure quality training.
2. **Increase awareness and enrolment:** Implement targeted campaigns to promote the benefits of vocational education, particularly among marginalized groups. Partnerships with media, schools, and community organizations can help raise awareness.

3. Develop Comprehensive Policies and Legislation: Enact policies and legislation that support the integration of vocational education into national development plans. Establish vocational education boards and ensure the presence of skill acquisition centres in every local government area.
4. Combat Social Stigma: Develop public relations campaigns to change societal perceptions of vocational education. Highlighting success stories and the tangible benefits of vocational skills can help shift attitudes.
5. Strengthen Public-Private Partnerships: Foster collaborations between vocational institutions and industries to align training programs with market needs, providing students with practical experience and improving their employability.
6. Support Non-Governmental and Religious Initiatives: Encourage non-governmental organizations and religious institutions to establish skill development and rehabilitation centres for disabled individuals and school dropouts. These initiatives can provide additional support and resources to marginalized groups.

## References

- Anthony, J., Akpama, S., & Tawo, R. (2021). The economic impact of vocational education. *Journal of Economic Studies*, 58(3), 452-467.
- Baranidharan, S. (2023). The importance of technical skills in today's job. skills-in-todays-  
<https://timesofindia.indiatimes.com/readersblog/finance-excel/the-importance-of-technical-job-market-49844/>
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.
- Beer, J., & Mulder, M. (2020). Skilled labour and national technology advancement. *Technology and Society*, 49(2), 213-225.
- Beer, P., & Mulder, H. R. (2020). The effects of technological developments on work and their implications for continuous vocational education and training: A systematic review. *Frontiers in Psychology*, 11, Article 918.  
<https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00918/full>
- Ekpenyong, L. E. (2000). VTE115: Introduction to vocational education. Published by National Open, University of Nigeria, Abuja.
- European Centre for the Development of Vocational Training. (2011). The benefits of vocational education and training. Retrieved from  
[https://www.cedefop.europa.eu/files/5510\\_en.pdf](https://www.cedefop.europa.eu/files/5510_en.pdf)
- European Training Foundation. (2019). From school drop-out to rewarding job: Vocational education counts. Retrieved from <https://www.etf.europa.eu>
- Federal Government of Nigeria (2004). National policy on education. NERDC, Lagos
- Federal Ministry of Youth Development (FMYS) (2022) Nigerian Youth Employment Action Plan. Federal Ministry of Youth and Sports Development, Nigeria (accessed 15 February 2024).Google Scholar
- Gloria, O. and Samuel, A. (2012). The prevalence of street begging in Nigeria and counselling intervention strategies. *A review of European studies* 4(4), 77-83.  
<https://www.researchgate.net/publication/289235556>
- Hussain, A. F. M., & Korban, A. M. D. (2014). Relationship between individual and society. *Open Journal of Social Sciences*, 2(8), Article ID:49227, 7 pages.  
<https://doi.org/10.4236/jss.2014.28019> India. Retrieved from

- <https://timesofindia.indiatimes.com/readersblog/finance-excel/the-importance-of-technical-skills-in-todays-job-market-49844/>
- International Labour Office, Geneva. (2010). A skilled workforce for strong, sustainable and balanced growth. Retrieved from <https://www.oecd.org/g20/summits/toronto/G20-Skills-Strategy.pdf>
- International Labour Office. (2010). Skills for improved productivity, employment growth and development. International Labour Organization.
- Kaplan, J. (2022). Cost-effectiveness analysis. Better Evaluation. Retrieved from <https://www.betterevaluation.org/methods-approaches/methods/cost-effectiveness-analysis>
- Kaplan, R. S. (2022). Evaluating cost-effectiveness in vocational education. *Educational Evaluation and Policy Analysis*, 44(1), 77-93.
- Mayombe, C. (2023). Promoting youths' skills acquisition through experiential learning theory in vocational education and training in South Africa. *Higher Education, Skills and Work-Based Learning*. <https://www.emerald.com>
- Mayombe, C. (2023). The benefits of vocational education. *International Journal of Vocational Education and Training*, 32(1), 89-104.
- Okoro, A. (2000). Evaluating educational programs. *Journal of Educational Evaluation*, 22(4), 311-327.
- Okoro, O. M. (1999). Principles and methods in vocational and technical education. University Trust Publication.
- Price, RA (2019) Youth Employment Needs in Nigeria; K4D Helpdesk Report 691. Institute of Development Studies: Brighton, UK. Google Scholar
- Somwethee, P., Aujirapongpan, S., & Ru-zhuc, J. (2023). The influence of entrepreneurial capability and innovation capability on sustainable organization performance: Evidence of community enterprise in Thailand. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(2). <https://www.sciencedirect.com/science/article/pii/S2199853123001841>
- UNDP and World Bank (2023). Brief note for countries on 2023 multidimensional poverty index. <https://hdr.undp.org/sites/default/files/Country-Profiles/MPI/NGA.pdf>
- UNESCO. (2021). Sub-education policy review report: Technical and vocational education and training (TVET). Retrieved from [https://en.unesco.org/sites/default/files/tvet\\_final\\_-\\_january\\_2021.pdf](https://en.unesco.org/sites/default/files/tvet_final_-_january_2021.pdf)
- UNICEF. (2022). Children with disabilities. Retrieved from [https://www.unicef.org/sites/default/files/2022-10/GIP02115\\_UNICEF\\_Children-with-Disabilities-Factsheet-final%20-%20accessible.pdf](https://www.unicef.org/sites/default/files/2022-10/GIP02115_UNICEF_Children-with-Disabilities-Factsheet-final%20-%20accessible.pdf)
- UNICEF. (2022). Fact sheet on education in Nigeria. United Nations Children's Fund.
- Virk, A., Nelso, E., and Dele-Adedeji, I. (2024). The challenges of youth unemployment in Nigeria. *Journal of International and comparative social policy*. Published online by Cambridge University press.
- Yustus, S. F., Saidu, S. G., & Giroh, D. Y. (2021). Prospects and challenges of vocational education. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, 2. Retrieved from <http://www.academicjournal.com>
- Gloria, O. and Samuel, A. (2012). The prevalence of street begging in Nigeria and counselling intervention strategies. *A review of European studies* 4(4), 77-83. <https://www.researchgate.net/publication/289235556>

## CORRELATION AMONG STUDY HABIT, SELF-EFFICACY AND STUDENTS' ATTITUDE TO PROSE LITERATURE IN ONDO WEST LOCAL GOVERNMENT AREA, ONDO STATE

<sup>1</sup>Oludare, Bosede Abiola & <sup>2</sup>Olakunde, Mopelola Susan

<sup>1</sup>Department of Curriculum and Instruction, Adeyemi, Federal University of Education, Ondo.  
Bosyde2000@gmail.com

<sup>2</sup>Department of General Studies, Adeyemi, Federal University of Education, Ondo.  
Olamidemopelola19@gmail.com

### Abstract

*This study investigated correlation among study habit, self-efficacy and students' attitude to prose literature in Ondo West Local Government Area, Ondo State. The study adopted the survey research design of the correlational type. The population of the study comprised all senior secondary school students. Ten public senior secondary schools were randomly selected from public senior secondary schools in Ondo West Local Government Area, Ondo State. Simple random sampling technique was used to select 30 SS II students from each school, making a total of 300 students. Three research instruments were used for data collection: Questionnaire on Study Habit ( $r=0.78$ ), Self-Efficacy Scale ( $r=0.74$ ) and Prose Literature Achievement Test ( $r=0.76$ ). For face and content validity, the instruments were shown to expert in Literature-in-English Education for their inputs. Their corrections were factored into the production of final copies. Data collected were analysed using Pearson Product Moment Correlation and Multiple Regression Analysis at 0.05 level of significance. Findings of the study revealed that study habit had a positive relationship with attitude to prose literature ( $r=0.78$ ;  $p < .05$ ) while self-efficacy had a negative relationship with attitude to prose literature ( $r = -.205$ ;  $p < .05$ ). It also revealed the joint contribution of the two independent variables (study habit and self-efficacy) to students' attitude to prose literature was significant ( $F_{(2, 297)} = 19.007$ ;  $Adj. R^2 = .108$ ;  $p = .000 < .05$ ). The result indicated that study habit (Beta = .267) had more relative contribution to students' attitude to prose literature than self-efficacy (Beta = -.195). Based on the findings, it was recommended that government should provide necessary facilities that will facilitate teaching and learning of prose literature. Seminars, conferences and workshops should be organised for teachers of prose literature on methods that can enhance students' study habit and self-efficacy.*

**Keywords:** Study habit, Self-efficacy, Students' achievement, Students' attitude, Prose Literature

### Introduction

Literature is the representation and re-presentation of human actions in written works of superior artistic merit. Generically, it is any form of written works deemed to have artistic or intellectual value, often deploying language in ways that differ from ordinary language. Literature across ages and continents have functioned as the embodiment and interpreter of a peoples' culture, a conveyor of a people's language as well as their philosophy, politics, psychology and national character. Nwachukwu (2003) asserts that literature whether cast in the form of agitation, negotiation or based on historical reconstruction or mythological recreation has a touch of identity.

According to Bayo (2003), Literature is a discipline that attempts to depict man and his environment. The creative imagination and the use of a specialized form of communication

medium, language and its style make literature different from all other disciplines. Furthermore, literature deliberately aims at re-creating the human society via the exposition of human experiences, religious belief and socio-cultural motifs of that society within the imaginative framework of arts.

Fakeye (2015) notes that literature is the real essence of what life is about and it takes care of all human activities and experiences in all its genres – poetry, drama and prose. In our secondary schools, literature is offered as Literature-in-English meaning, different kinds of people's literature in English language. Fakeye and Amao (2013) assert that literature is an important aspect of culture and a means of communication among the members of the society. It is concerned with the literary aspect of communication using language for artistic and creative purposes with a view to creating beauty which is intellectual. Literature is a more elevated form of language, used in a more special and beautiful manner to express views, feelings, ideas, beliefs and emotions (Lawal, 2010). Literature helps students understand and appreciate cultures and beliefs different from their own. "By constructing with the literary text, a reality different from that of texts of information, students are given access to a world of attitudes, and values, collective imaginings and historical frames of reference that constitute the memory of a people or speech community. Thus, literature and culture are inseparable" (Kramsch, 2006). Literature has three genres: poetry, drama and prose. However, prose received main attention in this study. Prose is made up of complete sentences which constitute paragraphs in a narrative form. Prose reflects the pattern of everyday speech. If words are not presented in prose, they are presented in poetry or verse form that adheres to a particular metric form and definite structure. Prose is a kind of writing that is not poetic (Ibitoye, 2005). One major characteristics of a prose is the use of action. Action in prose is of two types: Rising action and falling action. Rising action is that stage in the growth and development of the plot, which proceeds, leading up to the climax. Falling action on the other hand is that stage of the prose which comes between the climax and the conclusion. A prose lacks an established regular rhythm pattern associated with poetry. It makes use of continuous writing ideas that are sometimes connected. It may also consist of dialogue, chapters and paragraphs.

Prose is written in narrative, simple and ordinary words which are easily understood by the readers and it does not require too much complexity such as drama and poetry. Literature is taught at different levels of education to achieve specific objectives which are, in turn related. While the purpose of teaching literature in the primary school level is to introduce pupils to literary reading in such a way that they can enjoy it and develop regular reading habits, the more advanced the students are the more likely the teaching of literature is to show explicit traces of literary studies. For instance, at the basic education level, literature is often integrated with other components of language learning and teaching. Literature is taught alongside English, hence the name English Studies. The aid of Literature-in-English language was identified as far back as 1966 with the Ford Foundation's Report (Uwaifo, 1979). The prose aspect of Literature in English is taken as Paper III in WASSCE has been discovered to expose students to valuable experience which may invariably contribute to their emotional, social and moral judgment. Despite the importance attached to teaching and learning of Literature-in-English in senior secondary schools, it is discouraging to note that students' performance in the subject is consistently poor. Adija (2002) and Ayanniyi (2009) agree that the performance of students in Literature-in-English especially prose aspect of the subject has been very poor over the years and that students are gradually losing interest in registering for the subject in public examinations. Literature-in-English Chief Examiner's Report of the West Africa Examinations Council

(WAEC) indicates the need for improvement in students' performance in Literature-in-English. According to the WAEC Chief Examiner's Report (2016), the standard of the paper is comparable to that of previous years. Questions were equitably distributed from all areas both African and Non-African prose. Candidates' performance was below expectation. Although there were a few good centres, the poor performance of most of the candidates adversely affected the overall performance. Some candidates misunderstood some of the questions and therefore provided extraneous materials and irrelevant answers.... Candidates provided sketchy and scanty answers. Most candidates had very poor communication skill. Example were grammatical errors, wrongly spelt words, wrong identification of characters and text, and poor punctuation which detracted the quality of analyses.... Answers to questions were mostly generalized having no bearing on the questions asked.... Failure to use material from text to support points made.

As a way of addressing the problem of students' poor performance in Literature-in-English, scholars have carried out varieties of research ranging from effective strategies to method of teaching Literature-in-English. Although most of these studies came up with good contributions to the teaching and learning of prose Literature-in-English but with little emphasis on correlation among study habit, self-efficacy and students' attitude to prose literature. Therefore, it means there are more to be done to the problems of teaching and learning of prose literature than improving teaching methods and strategies. Obemeata (1995) stressed that improving teaching methods and strategies alone cannot solve the problem of poor performance in schools.

Study habit contribute to better learning and educational achievement (Olowolabi, 2017). Study habit is learning tendencies that enable students to work privately. It is a well organised and deliberate pattern of study which reached a form of heights on the part of the students towards understanding academic subjects and passing examination. Azikwe (1998) describes study habit as the adopted way and manner a student plans his private readings, after classroom learning so as to attain mastery of the subject. Study habits are good assets to learners because habits assist students to attain mastery in areas of specialization and consequent constraints to learning and achievement leading to failure.

Good (1998) is of the view that a good study habit produces positive academic performance, while inefficient study habit leads to academic failure. Mark and Howard (2009) assert that the most common challenge to the success of students in all ramifications is a lack of effective or good study habit. If students can develop good study habit and with good discipline, they are bound to perform remarkably well in their academic pursuit. Hussain (2000) notes that lack of effective or good study habits is a critical study problem among students at all levels.

Grace (2013) maintains that the process of learning is still a little mysterious but studies do show that the most effective process for studying involves highly active behaviour over a period of time. In other words, to study effectively, one must read, draw, compare, memorise and test himself or herself over time. Study habits of students may be relevant to the prediction of grades because it is possible that student's grades may be related to their study habits. That is, students with poor study habits may obtain lower grades than those students with better study habits (Middleton, 1979). Study skills and learning approaches include: time management, using information resources, taking class notes, communicating with teachers, preparing for taking examination, and several other learning strategies.

According to Agba (2013), unserious students do study anyhow without specific techniques, and he submits that such students are most likely to perform below average. Marc (2011) asserts that students with learning problems may still have generally inefficient and

ineffective study habits and skills. Becoming aware of your learning habits or styles will help students that are below average. Good study habits help students to attend classes very often and do so on time. It also helps them to submit their assignments on time, read or prepare very well for tests and examinations, take down notes and develop the points independently, ask relevant questions in class; thereby having good grades at the end of the semester.

Monday (2008) maintains that developing good study habits in school will help students succeed in class and achieve educational goals. Good study habit through planning helps students prepare for what is ahead, and accomplish their academic goals. Thus, lack of study habit clearly puts students at a disadvantage and it is one of the main reasons why students need remedial classes, fall behind in coursework and drop out of school. Developing good study habits drastically lowers students' risk of academic struggles, and failure to complete a programme of study in the college (Bolling, 2000). He also notes that students who tend to perform excellently in most of their courses can be considered to have good study habits by being actively involved in their own learning process, continuous planning and carefully monitoring of the educational task that is required to complete.

Self-efficacy is the confidence a person has in his/her own ability to achieve intended results. It is the measure of one's own competence to complete tasks and reach goals (Ormrod, 2006). Bandura (1989) defined self-efficacy as a multidimensional construct that is fundamental to the social-cognitive approach and conceptualizes individuals as being energetic, purposeful, proactive, self-evaluative, and self-regulatory. Bandura views self-efficacy as one's belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks and challenges. It is a motivation for both learning and performance.

Students with high self-efficacy (people who believe they can perform well) are more likely to view difficult tasks as something to be mastered rather than something to be avoided. Self-efficacy beliefs affect what students do by influencing the choices they make, the effort they put in their work, the persistence and perseverance they exert in the face of adversity, and the anxiety they experience. A student's personal goal setting is influenced by self-appraisal of capabilities. The stronger the perceived self-efficacy, the higher the goal challenges people set for themselves and the firmer is their commitment to them (Bandura, 1991). Students with low self-efficacy generally avoid tasks and often develop anxiety when such tasks are given, but those with high self-efficacy undertake tasks with low or no anxiety. If self-efficacy is significantly beyond the actual ability of an individual such a person overestimates his/her ability to complete tasks without being anxious. In other words, when self-efficacy is significantly lower than actual ability, the individual's growth and skill development is hampered. Pajares and Miller (1994) view self-efficacy beliefs influence the amount of stress and anxiety that people experience as they engage in an activity and probably when students engage in a course.

Many studies have shown that study habit and self-efficacy are strong determinants of students' attitude to English Language, Mathematics and Economics but to the best knowledge of the researcher, these factors have not been significantly linked to prose literature. Therefore, this study investigated correlation among study habit, self-efficacy and students' attitude to prose literature in Ondo West Local Government Area, Ondo State.

### **Statement of the Problem**

Literature-in-English is an important subject in the senior secondary school curriculum, especially its three genres; drama, poetry and prose. However, reports from schools revealed that

students' performance in the subject is poor and it has been traced to their poor achievement in prose aspect of the subject. As a way of addressing this problem, many scholars have carried out numerous studies but with less research attention on relationship among study habit, self-efficacy among students' attitude to prose literature. Studies have shown that these variables strongly predict students' attitude to Economics, English language and Mathematics. However, the extent to which these variables correlate with students' attitude to prose literature has not received much research focus. Therefore, this study investigated correlation among study habit, self-efficacy and students' attitude to prose literature in Ondo West Local Government Area, Ondo State.

### Research Questions

The following research questions were raised to guide the study:

1. What relationship exists between the independent variables (study habit and self-efficacy) and students' attitude to prose literature?
2. What is the joint contribution of the independent variables (study habit and self-efficacy) and students' attitude to prose literature?
3. What is the relative contribution of the independent variables (study habit and self-efficacy) and students' attitude to prose literature?

### Methodology

The study adopted the survey research design of the correlational type. The population of the study comprised all senior secondary school students. Ten public senior secondary schools were randomly selected from public schools in Ondo West Local Government Area, Ondo State. Simple random sampling technique was used to select 30 SS II students from each school, making a total of 300 students. Three research instruments were used for data collection: Questionnaire on Study Habit ( $r=0.78$ ), Self-Efficacy Scale ( $r=0.74$ ) and Prose Literature Achievement Test ( $r=0.76$ ). For face and content validity, the instruments were shown to expert in Literature-in-English Education for their inputs. Their corrections were factored into the production of final copies. Data collected were analysed using Pearson product moment correlation and multiple regression analysis at 0.05 level of significance.

### Results

**Research Question One:** What relationship exists between the independent variables (study habit and self-efficacy) and students' attitude to prose literature?

**Table 1: Relationship between the independent variables (study habit and self-efficacy) and students' attitude to prose literature**

Variable	Attitude to prose literature	Study habit	Self-efficacy
Attitude to prose literature	1		
Study habit	.275* (.000)	1	
Self-efficacy	-.205* (.000)	-.039 (.500)	1
N	300	300	300
Mean	48.15	53.99	47.31
Standard Deviation	11.50	11.48	11.84

Table 1 shows the relationship that exist between the independent variables (study habit and self-efficacy) and students' attitude to prose literature. The result indicates that study habit has a positive relationship with attitude to prose literature ( $r=.275$ ;  $p < .05$ ) while self-efficacy has a negative relationship with attitude to prose literature ( $r = -.205$ ;  $p < .05$ ). This implies that study

habit is directly related to attitude to prose literature while self-efficacy is inversely related to attitude to prose literature.

**Research Question Two:** What is the joint contribution of the independent variables (study habit and self-efficacy) and students’ attitude to prose literature?

**Table 2: The joint contribution of the independent variables (study habit and self-efficacy) and students’ attitude to prose literature**

Model 1; R=.337; R <sup>2</sup> =.113; Adj. R <sup>2</sup> =.108; Std. Error of the Estimate = 10.86852						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4490.480	2	2245.240	19.007	.000 <sup>b</sup>
	Residual	35083.067	297	118.125		
	Total	39573.547	299			

Table 2 shows that the joint contribution of the two independent variables (study habit and self-efficacy) to students’ attitude to prose literature was significant ( $F_{(2; 297)} = 19.007$ ; Adj.  $R^2 = .108$ ;  $p = .000 < .05$ ). This implies that the two independent variables, when pulled together, significantly contributed to students’ attitude to prose literature. The result also indicates that Adj.  $R^2 = .108$  which implies that 10.8% variance in students’ attitude to prose literature was accounted for by the joint contribution of the independent variables and that other factors not included in this model may have accounted for the remaining variance of 89.2%.

**Research Question Three:** What is the relative contribution of the independent variables (study habit and self-efficacy) and students’ attitude to prose literature?

**Table 3: The relative contribution of the independent variables (study habit and self-efficacy) and students’ attitude to prose literature**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.658	4.005		10.651	.000
	study habit	.268	.055	.267	4.887	.000
	self-efficacy	-.189	.053	-.195	-3.566	.000

Table 3 shows the relative contribution of the independent variables (study habit and self-efficacy) using the standardized coefficient beta weight. The result indicates that study habit (Beta = .267) has more relative contribution to students’ attitude to prose literature than self-efficacy (Beta = -.195). This implies that study habit is the variable that is likely to individually contribute to students’ attitude to prose literature.

**Discussion of Findings**

Table I revealed that study habit has a positive relationship with students’ attitude to prose literature while self-efficacy has a negative relationship with students’ attitude to prose literature. This is similar to the studies of Ebele and Olofu (2017), Gilmary (1990); Fayle (1989) and Nneji (2002) who reported in their different studies that there was positive relationship between academic success and study habit. This is against the study of Agbeniga, Ayodele, Adeoye and Oyerinde (2015) who revealed that self-efficacy has a negative relationship with students’ academic performance.

Table II revealed that study habit and self-efficacy significantly contributed to students’ attitude to prose literature. This is in line with the study of Kristak and Nemeč (2010) who revealed that study habit and self-efficacy are very essential because they can make a subject

appealing to the learners. This is contrary to the finding of Oladipo and Oguniwin (2018) who reported that study habit and self-efficacy did not contribute to students' academic performance.

Table III revealed that study habit had more relative contribution to students' attitude to prose literature than self-efficacy. This is in line with the study of Ikegbunam (1998); Ikeotuonye and Bashmir (1996) revealed that good study habits contributed positively to students' academic performance. Also, Ansari (1994) found a positive correlation between study habit and academic achievement. This is against the study of Agbeniga, Ayodele, Adeoye and Oyerinde (2015) who reported that self-efficacy contributed negatively to students' academic performance.

### Conclusion

The study has shown that students' attitude to prose literature could be enhanced by study habit. Based on this finding, the study has provided a better understanding of study habit and self-efficacy that could affect students' attitude to prose literature in Ondo West Local Government Area, Ondo State.

### Recommendations

Based on the findings, it was recommended that necessary facilities that will facilitate teaching and learning of prose literature should be provided to schools. Seminars, conferences and workshops should be organised for teachers of prose literature on methods that can enhance students' study habit and self-efficacy. School counselors should counsel students on how they can develop good reading habit and also how they can enhance their self-efficacy.

### References

- Adegbite, A. (2003). The promotion of reading habits in Yoruba and English through the media literacy. *Literacy and reading in Nigeria*. 9 (2): 89-92
- Adija, O. (2002). Effects of language competence on students' achievement in literature in English in selected secondary schools in Ibadan. (Unpublished Master's thesis). University of Ibadan, Ibadan.
- Agba, R. (2013). Why students must develop study habits. Calabar: Rixmas publishing company
- Agbeniga, J, Ayodele, K.O, Adeoye, A.O and Oyerinde, O. (2015). Self-efficacy, emotional intelligence and achievement motivation as predictors of impulsive behaviour among secondary school students. *BABCOCK University Journal of Education*. Vol.1. 45-49
- Ansari, Z.A. (1994). Study habits and attitudes of students: development and validation of questionnaire measures Islamabad: National Institute of Psychology
- Ayanniyi, M.C. (2009). Effects of three modes of advance organizer on secondary school students' achievement in and attitude to poetic literature in Ibadan metropolis. PhD. Thesis, Department of Teacher Education, University of Ibadan.
- Azikwe, U. (1998). Study approaches of university students. WCCI region II forum, 2. Lagos, 106-114.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behaviour and Human Decision Processes*, 50 (2), 248-287. Retrieved from <http://search.proquest.com.ezaccess.libraries.psu.edu/docview/618100683?accountid=13158>
- Baduara, A. (1989). Social cognitive theory. In E. Barnouw (Ed.), *International encyclopedia of Communications* (vol. 4 pp. 92-96). New York: Oxford University Press.
- Bayo, O. (2003). What is Literature in English? In Olu Obafemi (ed). *New introduction to Literature*. Ibadan, Y books.

- Bolling, S. (2000). The advantages and disadvantages of study habits for college students. New Jessy: Prentice Hall Inc.
- Ebele, U.F and Olofu, P.A. (2017). Study habit and its impact on secondary school students' academic performance in biology in the Federal Capital Territory, Abuja. *Academic Journal*. Vol. 12 pp 583-588
- Fakeye, D.O and Amao, T.A. (2013). Classroom participation and study habit as predictors of achievement in Literature-in-English. *Cross-Cultural Communication*, 9(3), 18-25.
- Fakeye, D. O. (2015). School-related factors as predictors of senior secondary school students' literature in English achievement in Ibadan metropolis. *International Journal of Education* 7. Retrieved Nov. 08, 2020 from [https://www.researchgate.net/publication/281192011\\_School-Related\\_Factors\\_as\\_Predictors\\_of\\_senior\\_Secondary\\_School\\_Students'\\_literature\\_in\\_English\\_achievement\\_in\\_Ibadan\\_metropolis](https://www.researchgate.net/publication/281192011_School-Related_Factors_as_Predictors_of_senior_Secondary_School_Students'_literature_in_English_achievement_in_Ibadan_metropolis).
- Fayle, J. (1989). The case of inner city students and their study habits: The open school bulletin hall, University of Hull xxiv.
- Gilmery, D. (1990). Learners' characteristics in perspective and counselling in Quebec Universities: *Review of Educational Research* Vol. 29.
- Grace, F. (2013). Would group study improve your grades? Retrieved from [www. about.com](http://www.about.com).
- Good, T.L. (1998). Pymalion grows up: Studies in the expectation communication process. New York: Longman.
- Hussain, A. (2000). Developing study habits. Wikipedia, the free encyclopedia.
- Ibitoye, W.A. (2011). Creative reading. In Aleburu, V.I. (Ed) Basic studies in language and communication and skills IV. Lagos. Narthy: Publishers, pp 7-15.
- Ikegbunam, C.I. (1998). Enhancing students study habit through the PR4 approach WCCI Reg. II Forum\_ Vol. 2. Lagos pp 130-136
- Kramsch, C. (1993). Context and Culture in Language Teaching Oxford: Oxford University Press
- Kristak, I and Nemec, M. (2010). Modern methods applied in teaching Biology. *Communications: Scientific letters of the University of Zilina*, 12.3: 72-74
- Lawal, A. (2010). Values and limitations of using literary text for teaching ESL. Retrieved from <http://www.uniloring.edu.ng/journals/education>
- Marc, K. (2011). The importance of good study habits. Retrieved from [www.answer.com](http://www.answer.com)
- Mark, A and Howard, C. (2009). How to study. *Psychol. Sci.* 20 (4); 516-522
- Monday, M. (2008). Ten bad study habits you should resolve to avoid. Retrieved from [www.calnewport.com](http://www.calnewport.com)
- Middleton, M.A. (1979). An exploratory study of the relationship of study habits, expected grade and instructor effectiveness ratings to academic performance. Simon Fraser University.
- Nneji, L.M. (2002). Study habits of Nigerian university students. Nigerian educational research and development council, Abuja, Nigeria.
- Oladipo, A.J and Ogundiwin, O.A. (2018). Text anxiety and self efficacy as predictors of Biology pre-service university teachers' attitude towards diffusion and osmosis in southwestern Nigeria. *Journal of Science Education and Research*. Vol. 2. No1
- Nwachukwu, A. (2003). Literature I EFL/ESL classroom. *English language teaching* vol. 4 (1): 201-208
- Obemeata, J. O. (1998). The effect of language of instruction on school achievement. Nigeria. *Journal of Curriculum Studies*. VI (2). July, 1998.

- Olowolabi, S.O. (2017). Study habits, self-concept and students' attitudes as correlates of academic performance of secondary school students in Ondo state, Nigeria. Unpublished PhD thesis, Faculty of Education, AAUA.
- Ormroid, J.E. (2006). Educational psychology developing learners (5<sup>th</sup> edition). Marril: Upper Saddle River (Companion Website).
- Pajares, F and Miller, M. (1994). Role of self-efficacy and self-concept beliefs in mathematical Problem solving: A path analysis. of *Journal Educational Psychology*, 86, 193-203. doi:10.1037/0022-0663.86.2.193
- Pritchard, F.A. (2002). A harvest of literary terms. Ibadan. Extension Publications Ltd.
- Uwaifo, R.O. (1979). The teaching of prose in Nigerian schools. In E. Ubahakwe (Ed). The teaching of English Studies: Reading for colleges and universities. Ibadan: University Press.
- West African Examinations Council (WAEC) Chief Examiners' Report (2016).

## EFFECT OF GOOGLE CLASSROOM ON STUDENTS' ACHIEVEMENT IN COMPUTER STUDIES IN JUNIOR SECONDARY SCHOOLS IN IBADAN SOUTH-WEST OF OYO STATE

<sup>1</sup>Olasunkanmi, Israel Abayomi & <sup>2</sup>Ayoola, Oyindamola, Temitope

<sup>1</sup>Educational Technology Unit, Department of Science and Technology Education,  
University of Ibadan, Nigeria

olasunkanmi@ui.edu.ng, (+234) 8060480636

<sup>2</sup>Educational Technology Unit, Department of Science and Technology Education,  
University of Ibadan, Nigeria

ayoolaoyindamola4@gmail.com, (+234) 8133530927

### Abstract

*Computer studies is integrated into secondary education to enhance students' acquisition of competencies required in the digital world of competitiveness. However, it is imperative to explore how students' achievement in the subject could improve through innovative approaches capable of providing ubiquitous learning experiences. Therefore, this study examined effects of Google classroom, gender and students' computer literacy on junior secondary students' achievement in computer studies in Ibadan South-west, Oyo State. Two purposively selected public schools were randomly assigned into experimental and control groups. Instruments used were Computer Studies Achievement Test ( $r=0.76$ ) and Students' Computer Literacy Questionnaire ( $r=0.68$ ), and data collected were analysed using ANCOVA and EMM. Results showed that treatment and computer literacy have significant main effects on achievement in computer studies but gender does not. However, treatment, gender and computer literacy have significant interaction effect. It is recommended that teachers should adopt Google classroom to facilitate computer studies instruction.*

**Keywords:** Google Classroom, Learning platforms, Academic achievement, Computer Studies, Computer literacy

### Introduction

Globally, the knowledge and skills of using computers for carrying out tasks in various fields and endeavours are highly imperative in the digital era. The more tech-savvy individuals are, the more compliant and adaptable they become in fitting easily into working environment that demand technological expertise for career advancement and sustainable development. Thus, the efforts of curriculum planners to design and develop suitable content for computer studies and its inclusion in the curricula for adequate computer literacy at the various levels of the education system. In Nigeria, the government has integrated the subject, Computer Studies into junior secondary education to serve as means of exposing students to adequate fundamental knowledge of computer applications, areas of information and communication technology (ICT), basic computer operations, and presentation packages.

More specifically, the national policy on education (FRN, 2014) shows that the government of Nigeria introduced computer studies into the school curriculum with the aim of providing opportunities for every student to be well informed and become proficient in the use of modern technology, especially computer in promoting work-related skills and abilities, life-long learning and empowering people's participation in all socio-economic process for rapid transformation of the Nigerian nation. The implication of this provision is that students would

have opportunity to improve their quality of life. Students would have chances of developing ability to operate basic hardware and software tools including operating system and website browser. Typically, students would be able to understand technical concepts and how to apply them in different contexts, including learning.

However, as germane as computer studies is to acquiring, by implication, both problem solving and computational thinking skills which are relevant to coping capacity and technological expertise in the 21st century, students' performance in both internal and external examinations demand attention (Balaba, 2017; Akpan, 2018). The poor performance is traceable to factors like lack of teaching and learning resources, teacher's qualification, teaching experience, teaching method, students' age, and gender.

Interestingly, one of the breakthroughs of technology in education in the 21st century was the emergence of various media, tools and learning platforms which can be used to improve and enhance instructional delivery. Meanwhile, technology-enhanced instruction has been reported to have an impact on students' academic achievement and their attitude towards subjects in both science and arts based subjects. A typical example of such learning platform is the Google classroom (Olasunkanmi & Olumide, 2022).

Google Classroom is a free application designed to assist students and teachers connect and work together. This application can be as interactive as the teacher desires. Teachers are encouraged to take full advantage of the platform's features. Google Classroom incorporates media into the platform. Teachers who use this feature serve as facilitators by utilizing the numerous mediums at their disposal. The use of audio and visual media can aid in the learning process. Teachers can insert instructional videos, slides to deliver lessons. Students can also submit their own assignments in a variety of media formats. The platform, Google classroom, simplifies and streamlines discussion posts and communication, allowing teachers and instructors to communicate with one another in both directions (Subsandi, Choirudin, Mahmudi, Nizaruddin & Hermanita (2018).

In addition, the instructor and students can create posts and comments on the streaming page. In this case, the most recent posts and comments appear at the top of the page, users can follow along in chronological order. This privilege can be removed from students if the instructor so desires. Google Classroom is compatible with a variety of devices such as mobile devices and desktop browsers, making it easier for students and teachers to access (Heggart & Yoo, 2018). The authors added that classes can be organized with coloured banners to help students and teachers differentiate between multiple courses and add personalization, making it customizable. It is regarded as a positive user experience platform for a variety of reasons. For example, on the streaming page, announcements and discussion posts appear where videos, presentation slides, links and other documents can be attached and embedded.

Google Classroom has the added benefit of being compatible with other media applications such as Twitter, Facebook, and Kahoot (Ramadhani, Umam, Abdurrahman & Syazali (2019). However, students' previous computer literacy which entails their knowledge and proficiency in the use of computers and related technology is essential for them to efficiently use the platform for learning. This entails knowing and being able to use a wide range of technology tools for a variety of purpose (Mantiri, Hibbert, & Jacobs, 2019; Widana, 2020). Previous computer literacy is critical not only for assisting students in becoming independent, critical learners, but also for closing the gap between children's lived experiences inside and outside of school (Hague & Payton, 2011).

Truly, the integration of online based learning tools should take cognisance of computer literacy as this is capable moderating the effect such technological tools could have on the intervention. Educational institutions which intend to employ online based learning must maintain and monitor the availability of internet services and appropriate technology devices to ensure that all students have access to digital media outside of school hours. What quickly follows is the students' computer literacy which encompasses every aspect of our students' lives within and out of the classroom. Therefore, the study investigated previous computer literacy as one of the moderating variables.

Another moderating variable considered in this study is gender. Though, it seems reasonable that teachers should allow for equity in respect of gender, there has been inconsistency in various results as regard gender. While some studies found a significant difference between male and female academic achievement regarding the use of technological tools, others did not. In a study on the effects of Google classroom on the academic performance of business education students in cost accounting in federal colleges of education based on gender by Daramola and Umoru (2021), there was no significant gender effect on the academic performance of business education students taught Cost Accounting using the Google Classroom. In a similar study however, Berdousisa and Kordakib (2014) reports that female students have better average grades than their counterparts, but in other courses males perform better.

Some studies have treated the effect of Google classroom on students' academic achievement, but there seems to be dearth of research on gender as a moderating variable on its effect on students' academic achievement in computer studies especially at junior secondary school level (Daramola & Umoru, 2021; Olasunkanmi & Olumide, 2022). It is in this context that this study examined the effect of Google classroom supported instruction on junior secondary school students' academic achievement in computer studies in Ibadan South-West Local Government Area of Oyo State, Nigeria.

### **Statement of the Problem**

The relevance of the knowledge of Computer studies for sustainable development in education is immeasurable. Computer studies, as a subject is aimed at making students to acquire skills and competencies required in this digital world of competitiveness. So, it has become extremely important to receive quality computer education irrespective of what field one has chosen to pursue. However, the perceived lack of interest and poor academic performance of students in Computer studies have become a great concern to all. Researches have shown that students record low achievement in the subject. This is traceable to the traditional teaching method. Research efforts geared towards the problems have examined various teaching strategies, but there is need for improvement. More innovative teaching approaches which has the capability of providing ubiquitous learning experience that will engage students, spur their interest and consequently enhance academic achievement in Computer studies could be employed. Research reports have shown that technology learning platforms including Google classroom could be adopted. Therefore, this study examined the effects of Google classroom on junior secondary school students' academic achievement in computer studies in Ibadan South-west Local Government Area of Oyo State.

### Objectives of the study

The main purpose of the study was to examine the effectiveness of using Google classroom virtual platform to enhance the learning of Computer Studies. The specific objectives of the study are:

- i. To examine the effect of Google classroom on students' achievement in Computer Studies;
- ii. To determine the moderating effect of gender on the use of Google Classroom on students' achievement in Computer Studies;
- iii. To determine the moderating effects of Computer literacy on the use of Google Classroom on students' achievement in Computer Studies; and
- iv. To determine the joint moderating effects of the Treatment, gender, and Computer literacy on students' achievement in Computer Studies

### Hypotheses

The following hypotheses were formulated and tested at 0.05 of significance level:

**H<sub>01</sub>:** There is no significant main effect of treatment on students' achievement in computer studies;  $\theta$

**H<sub>02</sub>:** There is no significant main effect of gender on students' achievement in computer studies

**H<sub>03</sub>:** There is no significant main effect of students' previous computer literacy achievement in computer studies

**H<sub>04</sub>:** There is no significant interaction effect of treatment, gender and previous computer literacy on students' achievement in computer studies

### Methodology

The study was guided by Online Collaborative Learning (OCL) to provide a conceptual basis for understanding the relationship between Google classroom and students' achievement in Computer studies. Online Collaborative learning as a theory provides a model of learning in which students are encouraged and supported to work together to create knowledge: to invent, to explore ways to innovate, and, by so doing, to seek the conceptual knowledge needed to solve problems rather than recite what they think is the right answer.

In addition, the core part of this study deals with designing a learning management system lesson content for an online learning. Thus, the Smith and Ragan (2005)'s model of instructional design provided the framework. It comprises three major activities, namely, Analysis, Strategy development, and Evaluation.

This study adopted the pretest posttest control group quasi-experimental design of a  $2 \times 2 \times 3$  fractional matrix. Two (2) public secondary schools, with a total of fifty (50) students, in Ibadan South-West were purposively selected based on availability of resources to train research assistants, students' accessibility to technological devices, readiness to participate in the study and the schools' leadership acceptance for students to participate in the study. The instruments used for the study are; Computer Literacy Questionnaire (CLQ), Computer studies Achievement Test (CSAT), Google Classroom Lesson Plan Template (GCLPT), Control Group Lesson Guide (CGLG), and the Google Classroom Learning Manual (GCLM). In order to ensure the validity of the response instruments regarding the statement of the problem, purpose and research questions, the draft copies were given to experts in Educational Technology for scrutiny. The experts' comments were used to modify the instruments. The response instruments were trial tested on

participants outside the study and reliability coefficients of 0.68 and 0.76 were determined using Cronbach Alpha and Kuder Richardson 20, respectively.

The method of data collection was done in phases. The researchers sought for permission in using one of the teacher as a research assistant as well as some facilities in the schools. At each school, the instruments were administered as pre-test and collected personally by the researcher from the respondents in their respective classes. Thereafter, treatment commenced and lasted for three weeks. At the end of the treatment, the test items from the instruments were re-administered to the same students. The data collected were analysed using Analysis of covariance (ANCOVA) to determine the significance of the main effects and interaction effects of the independent variables. Estimated Marginal Mean (EMM) was used to find the direction of the differences among the groups with significant main effect.

## Results

**Hypothesis 1:** There is no significant main effect of treatment (Google classroom) on students' achievement in computer studies

**Table 1. Analysis of Covariance (ANCOVA) of Computer Studies Achievement Test scores by Treatment, Gender and Computer Literacy**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	464.107 <sup>a</sup>	11	42.192	22.483	0.000	0.837
Intercept	273.162	1	273.162	145.562	0.000	0.752
Pretest	0.021	1	.021	0.011	0.916	0.000
Treatment	109.844	1	109.844	58.533	*0.000	0.549
Gender	.673	1	.673	0.359	0.552	0.007
Treatment * Gender * Computer Literacy	3.008	1	3.008	1.603	0.212	0.032
Error	90.077	48	1.877			
Total	12119.000	60				
Corrected Total	554.183	59				

R Squared = .843 (Adjusted R Squared = .797) \* Denote significant difference at 0.05 level of significance

Table 1 shows that there is significant main effect of treatment on students Computer studies Achievement Test scores in ( $F_{(1,48)} = 58.533$ ;  $P < 0.05$ , partial  $\eta^2 = 0.55$ ). The effect size is 55.0%. This indicates that 55.0% of the variation in students' achievement is as a result of the significant main effect of the treatment. Thus, hypothesis 1a was rejected. Therefore, there is significant main effect of treatment on students' achievement in Computer studies.

In order to determine the magnitude of the significant main effect across treatment groups, the estimated marginal means of the treatment groups was calculated and the result was presented in Table 1.

**Table 2: Estimated Marginal Means for Post-test by Treatment (Control and Experimental group)**

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Control (Conventional teaching)	11.96	0.28	11.40	12.53
Experimental (Google Classroom)	15.69	0.27	15.15	16.22

Table 2 revealed that the students in Experimental group (Google classroom) had the highest adjusted post- Computer Studies Achievement Test mean score (15.69) while the Control group (Convention Strategy) had the least adjusted post- Computer-Studies Achievement Test mean scores (11.96).

**Hypothesis 2:** There is no significant main effect of gender (male and female) on students’ achievement in Computer studies

Table 1 shows that there is no significant main effect of gender on students’ Computer-studies Achievement Test Scores ( $F_{(1,48)} = 0.79, p > .05, \text{partial } \eta^2 = 0.032$ ). This means that gender has no significant effect on the mean post Achievement Test scores of students. Thus, hypothesis 2 was not rejected.

**Hypothesis 3:** There is no significant main effect of Students’ Computer literacy on students’ achievement in Computer studies

Table 1 shows that there is significant main effect of Computer literacy on students’ Computer-studies Achievement Test Scores ( $F_{(2,48)} = 12.15, p < .05, \text{partial } \eta^2 = 0.34$ ). The effect size is 34%. This indicates that 34.0% of the variation in students’ achievement is as a result of the significant main effect of the Computer literacy. Thus, hypothesis 3 was rejected. In order to determine the magnitude of the significant main effect across the groups, the estimated marginal means of the computer literacy groups was calculated and the result was presented in Table 1.

**Table 3: Estimated Marginal Means for Post-Achievement by Computer Literacy.**

Computer Literacy	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
High	14.56	0.36	13.84	15.28
Medium	14.20	0.33	13.53	14.87
Low	11.73	0.32	11.08	12.38

Table 3 revealed that the students with a high level of computer literacy had the highest adjusted post-achievement mean score (14.56) while students with a medium level had (14.20) and students with a low level of computer literacy had the least post achievement mean score of (11.73). Therefore, there is a significant main effect of computer literacy on students’ academic achievements.

**Hypothesis 4:** There is no significant interaction effect of treatment, gender and computer literacy on students’ achievement in computer studies

Table 1 shows that there is no significant interaction effect of treatment, gender and computer literacy on students' Computer studies Achievement Test Scores ( $F_{(1, 48)} = 1.60, p > 0.05$ , partial  $r = 0.032$ ). This means that treatment, gender and computer literacy have no interaction effect on students' achievement in computer studies. Therefore, hypothesis 4 was not rejected.

## Discussions

The findings of the study revealed significant differences in the achievement scores of students in the experimental and control group. Students in the Google classroom had higher achievement scores than students in the control group. The findings showed that the experimental platform (using google classroom) is more effective than the conventional teaching strategy in improving students' academic achievement in computer studies. The result is in support of the findings of Oyarinde and Komolafe (2020) which showed that Google classroom platform positively affected students' academic achievements. In addition, the results is in tandem with the Nigerian government position that teaching of subjects in schools should be IT supported and should be geared towards acquisition of functional skills and competences necessary for self-reliance (FRN, 2014). This finding could be that the students found the Google classroom useful and easy to use as a support tool for the learning of the Computer studies concepts treated in the study.

In the study, gender was found to have no significant effect on students' achievement to computer studies. The findings is in support of Sam, Othman & Nordin, 2005 and Roussos (2004), which showed no significant difference between males and females. Therefore, gender has no influence on the use of technology-driven techniques to improve academic achievements of students in computer studies. This could be that both males and females born in the digital era possess are tech savvy. They find use of technology for learning and other engagements equally interesting, useful and easy to use. Their digital nativity as revealed in the friendliness and addition to use of technology may account for the equality students at the junior secondary level.

The findings of the study also revealed significant main effect of previous computer literacy on the academic achievement of students in computer studies. Students who had a high level of computer literacy had the highest post achievement mean scores while students who had a low level of computer literacy had the least post achievement mean score. The findings showed that the level of computer literacy had a positive influence on the academic achievement of students in computer studies. This suggests students come in to the computer studies class with diverse level of knowledge and competency as regards computer literacy. The computer studies teacher should endeavour to employ strategies that could help learners to collaborate during which they will have opportunities to freely share ideas and put themselves through relevant skills with no constraints, in both physical and virtual environments.

The findings of the study revealed that there is no significant interaction effect of treatment, gender and computer literacy on the academic achievements of students in computer studies. This implies that there is no joint influence of treatment, gender and computer literacy on students' academic achievements. This finding suggest that irrespective of students' gender and level of computer literacy, achievement in computer studies is not influenced. The major agents of change in teachers' use of Google classroom to facilitate the learning of Computer studies concepts are the knowledge and skills possessed by the students in relation to the features of the technology.

## Conclusion

The results of the study have shown that using Google classroom is more effective in enhancing students' level of achievement in computer studies than the traditional lecture method. Based on the result of the study, using Google Classroom allows students and teachers connect and work together, teachers can post lecture notes, create assignments, make announcements, set due dates for assignments. Google Classroom also makes learning student-centred and it also allows collaboration between students which in turn arouses learners' interest. Teacher can also upload materials and can give feedback to students, and the students also can upload materials and make personal comment. All these features make a positive impact in the academic achievement of the students in computer studies. The study equally shows that the level of computer literacy has an effect on the academic achievement of students in computer studies. Students who were computer literate performed better in Computer studies than students who were not computer literate. Finally, from the study, gender was seen to have no effect on the academic achievements.

### Recommendations

Based on the findings of the study, the following recommendations are made:

1. Teachers taking computer studies in secondary schools should adopt the use of Google classroom as collaborative platforms
2. Teachers should act as guides on the side and allow learners to take control of their learning; this will enhance their participation thereby increasing their academic achievement.
3. Seminars and workshops should be organized by the school management to train teachers on how to use Google classroom.
4. Students should be trained on the use of Google collaborative platform for learning.
5. Computers and ICT tools should be provided and made available for students to access and use learning tools.

### References

- Akpan, I. F. 2018 Computer Anxiety, Computer Self-Efficacy and Attitude toward Internet among Secondary School Students in Akwa Ibom State, Nigeria. *American Journal of Educational Research*. 2018; 6(11):1455-1459:10.12691/education-6-11-2.
- Federal Republic of Nigeria FRN (2014). *National Policy on Education*. 6<sup>th</sup> Edition. Lagos: NERDC. ISBN: 978-054-216-7.
- Berdousisa, I. and Kordaki, M. (2014). Gender Differences and Achievement in Computer Science: Selection and peer-review under responsibility of the Organizing Committee of WCES 2014. *Elsevier Ltd.* (<https://creativecommons.org/licenses/by-nc-nd/4.0/>).
- Hague, C. and Payton, S. (2011). *Digital literacy across the curriculum: A futurelab handbook*. Available at: [http://archive.futurelab.org.uk/resources/publications\\_reports\\_articles/handbooks/Handbook1706](http://archive.futurelab.org.uk/resources/publications_reports_articles/handbooks/Handbook1706).
- Heggart, K. R., and Yoo, J. (2018). Getting the most from Google Classroom: A pedagogical framework for tertiary educators. *Australian Journal of Teacher Education*, 43(3), 9.
- Mantiri, O., Hibbert, G. K., and Jacobs, J. (2019). *Digital literacy in ESL classroom*. *Universal Journal of Education Research* 7(5), 1301-1305. Retrieved from <http://www.hrpub.org> DOI: 10.13189/ujer.2019.070515
- Olasunkanmi, I. A. & Olumide, E. (2022). Effect of EasyClass virtual classroom on junior secondary school students' achievement, attitude and social interaction in basic

- technology in Ibadan metropolis. Being paper presented at 47<sup>th</sup> Annual International Conference of Educational Media and Technology Association of Nigeria (EMTAN). *Trends in Education and technology integration in the future learning. Faculty of Education, Federal University, Lokoja, Niger State, Nigeria. October, 16-19, 2022.* <https://www.aace.org/confedmedia>
- Oyarinde, O.N. & Komolafe, O.G. (2020). Impact of Google Classroom as an Online Learning Delivery during COVID-19 Pandemic: The Case of a Secondary School in Nigeria October 2020 *Journal of Education Society and Behavioural Science* DOI: 10.9734/JESBS/2020/v33i930259
- Ramadhani, R., Umam, R., Abdurrahman, A., & Syazali, M. (2019). The effect of flipped-problem based learning model integrated with LMS-google classroom for senior high school students. *Journal for the Education of Gifted Young Scientists*, 7(2), 137-158.
- Subandi, S., Choirudin, C., Mahmudi, M., Nizaruddin, N. & Hermanita, H. (2018) Building interactive communication with Google classroom. *International Journal of Engineering & Technology*, 7(2.13), 460-463.
- Widana, I. (2020). The effect of digital literacy on the ability of teachers to develop HOTS-based assessment. *Journal of Physics: Conference Series*. 1503.012045. 10.1088/1742-6596/1503/1/012045.

## THE USE OF CLOUD COMPUTING SERVICES IN THE NATIONAL OPEN UNIVERSITY OF NIGERIA LIBRARY FOR INFORMATION ARCHIVING AND RETRIEVAL

<sup>1</sup>Okwoli, Mercy Enefu & <sup>2</sup>Okpala, Angela Ebele

<sup>1</sup>The University Library, National Open University of Nigeria, Abuja  
mokwoli@noun.edu.ng/okwoli.mercy@yahoo.com, 08033173383/09026008086

<sup>2</sup>The University Library, National Open University of Nigeria, Abuja  
aokpala@noun.edu.ng, 08136260702/08052495259

### Abstract

*This study investigates the use of cloud computing services in the National Open University of Nigeria (NOUN) Library for information archiving and retrieval. Issues related to specific cloud computing services are being utilised, how cloud computing services compare to traditional methods of information archiving and retrieval help in enhancing efficiency and effectiveness were investigated, and the potential drawbacks of utilising cloud computing services for information archiving and retrieval in NOUN library setting. Qualitative research method was adopted. Focus group method with University Librarian and four IT staff were used as sample size of the study. Guided interview constituted the instrument for data collection, while descriptive method was used to analyse the collected data. The findings revealed that National Open University Nigeria (NOUN) Library uses cloud computing services for information archiving and retrieval in cataloguing, metadata storage, retrieval, and generation. The study went further to reveal that cloud computing services are more efficient and effective than traditional methods of information archiving and retrieval in NOUN library. Conclusion were drawn and recommendations were made that to improve the efficiency and effectiveness of information archiving and retrieval, the federal government and the university management should work to develop core system components such as search and retrieval tools, user interfaces, user profiling services, and user authentication and authorisation services that work across individual collections and services. They should also devote more resources to cloud services, as it provides benefits over traditional library services such as increased flexibility, scalability, and cost savings, among other things.*

**Keywords:** Utilisation, Cloud Computing Services, Information Archiving and Retrieval.

### Introduction

The cloud storage system provides online storage for users' data for extended periods, possibly indefinitely. This can be used as a component of a fully digital archival service, Cloud storage includes a comprehensive management function that oversees storage services, supporting infrastructure, and, most likely, the preservation of user data. This is the most in-demand advanced technology in today's world. Companies such as Amazon, Google, and Microsoft use cloud technology to accelerate business. The cloud storage system is accessed via the Internet. Cloud storage can assist in lowering server maintenance costs, simplifying IT management, and allowing employees to work and collaborate from remote locations. The increased network bandwidth and flexibility of network connections enable users to access cloud systems and obtain high-quality services from data transfer or storage on remote data centers.

According to the studies by Wainaina (2020), cloud storage system is used by all archiving service providers, the use of cloud storage for archiving is still in its early stages, and researchers are still investigating proper guidelines on how to develop best practices for archiving. The instructions are aimed at the cloud. Archival systems are frequently used by librarians and information specialists in libraries. An archival system that integrates with a cloud storage system is designed to securely organize, index, search, and retrieve data. Monitoring systems in cloud storage are usually automated. The development of an archival system always begins with precise information that clearly identifies the information's object. To maximise efficiency in modern IT environments, most libraries use online storage. Cloud computing, on the other hand, is organised in a much more abstract manner. Users of the service are unconcerned about the hardware on which it is stored. One is aware that the server and data exist somewhere in the cloud, but it is unimportant where they are located. Automation and virtualisation allow for the timely delivery of services and resources.

Using a cloud storage system saves both time and money and to run the cloud system, both a subscriber and a provider are required. Cloud storage is a critical tool for sharing data and interacting with various users and applications all over the world. The use of innovation and technology in storage, industry technology, and service is a critical component of cloud storage. The person who uses the service is referred to as a subscriber. When compared to traditional storage systems, cloud storage systems present challenges in terms of data security, reliability, and data management.

Data centres are modernising their technology today, the most active and useful technological deviations are those that enable affordable, long-term online data access. Users nowadays use cloud storage systems as archival storage to ensure that their data is safe and easy to access whenever they want. The main benefit of using a cloud storage system as an archive is that it helps to reduce maintenance costs such as tape, disk, and so on. The primary goal of archiving is to save money by moving the least interesting or old data from primary storage to a location where it is less expensive to keep the data. As a result, the amount of active data that must be backed up is reduced. Instead of using various archiving tapes/storage, it is far more effective to use cloud technology as a modern archive system. An archiving system can store various types of data using modern tools, including files, databases, unstructured data such as logs, and many others. No archived data Instead of storing these services and resources on local servers, nodes, or personal devices, cloud computing technology allows them to be shared, resources, and services to be accessed via the internet (Zhang & Xie, 2020).

Despite the appearance of real servers or hardware, cloud-based services are delivered by virtual servers or hardware that are emulated by software running on one or more real machines. Because virtual services or automation do not exist mystically, they can be moved around and scaled up and down without affecting the utility to the customer. The most important aspect of archiving is identifying the important content that the user needs to archive. To remember the context of the content that needs to be archived, the user must create descriptive metadata about the archiving plan. There are three types of deployment models in cloud archival infrastructures, which are as follows: software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS). In practice, most cloud implementations focus on either SaaS or IaaS methods or features. It is sometimes advantageous to combine SaaS and IaaS. PaaS is rarely used because it is restricted to specific users, such as software developers (Abdelaziz, & Alhelali, 2019).

According to Abdallah's (2020) studies, many libraries are taking advantage of archiving solutions provided through the software-as-a-service (SaaS) model. Most libraries expect to meet their targets by archiving quickly. Most archiving applications have seen solid selection, especially given the current retreat. The development of a cloud-based archiving system is, in many ways, an extension of the archiving SaaS system. The ease of use of the technology is better upkeep multi-tenancy, improved client access and capacity frameworks adjusted to store and oversee a massive data to a low value, making the model attractive for the users that had not deliberated it previously. The understanding between the user and the archiving service providers should reveal storage capacity, uptime, maintenance policies, access to the data, and finally the data migration.

According to Oyelekan (2008), the National Open University of Nigeria (NOUN) was established in an attempt by the Federal Ministry of Education and its agencies to incorporate Information Communication Technology (ICT) into the Nigerian education system. NOUN is an Open and Distance Learning (ODL) institution that was formally resurrected on April 12, 2001. As an ODL, it offers its services online. For lectures and notes, NOUN, for example, uses learning content management system on e-learn platform. It also runs a digital library called INFORMATION GATEWAY, which provides multimedia tutorials.

### **Statement of the Problem**

The ability of library automation to maintain and expand robust and fully functional online services and collections while keeping up with the rapid pace of technological development is dependent on a small number of appropriately skilled employees. The library is sometimes overextended in both directions, which clearly often has negative consequences. Because it lacks the resources to develop core system components such as search and retrieval tools, user interfaces and user profiling services and user authentication and authorization services that work across individual collections and services, library automation takes a more ad hoc approach to development work to meet the most urgent demands.

Despite its short-term viability, the strategy threatens to severely undermine a position over which the library has only a tenuous grip a of trusted provider of high-quality information services. This information must be easily and affordably accessible when required. According to the discovery of Wainaina (2020), cloud computing technology allows a library's technology budget and employees to focus less on tasks that require essential but routine support for library operations and more on developing strategic or creative services. Cloud computing is an Information Technology (IT) effort to help libraries carry out their responsibilities more quickly, accurately, and virtually.

In the studies of Abdallah (2020), he discovered that cloud architecture allows libraries to transition from owning and running their own servers to powering their main automation application to acquiring equivalent capabilities through web-based services. He also stated that, while the use of the cloud has altered the concept of data storage and resource management in the commercial environment, it is still not widely used in the field of libraries. Hence, there is a need to investigate the use of cloud computing services in the National Open University of Nigeria Library for information archiving and retrieval.

### **Research Questions**

1. What are the specific cloud computing services that are being utilized by the National Open University of Nigeria Library for information archiving and retrieval?

2. How does National Open University of Nigeria Library use cloud computing services compare to traditional methods of information archiving and retrieval in terms of efficiency and effectiveness?
3. What are the potential drawbacks of utilising cloud computing services for information archiving and retrieval in National Open University of Nigeria library setting?

### **Scope of Study**

This study aims to investigate the use of cloud computing services in the National Open University of Nigeria Library for Information Archiving and Retrieval

### **Review of Literature**

#### **Information Services Provided via Cloud Computing in Libraries**

Libraries can now access an affordable infrastructure or environment thanks to cloud computing. It has drawn a lot of interest from the fields of academics, business, government, the military, and libraries to address storage and computerization issues. According to Zhang & Xie (2020), an increasing number of library vendors started offering cloud-based solutions for the Integrated Library System (ILS) and discovery tools starting in 2011. They emphasized further that although many suppliers provide choices to host the traditional ILS as a cloud solution, some are creating a new generation of ILS specifically for the cloud. A review of the literature on cloud computing and libraries shows that these technologies can be used by libraries to create digital libraries or repositories, host websites, search scholarly information, store files, increase processing capacity, and automate library tasks.

#### **Building of Digital Library/Repositories**

It has been noted that cloud computing is really an adaptation of pre-existing technologies and paradigms rather than a wholly new technology. In this sense, a digital library is not a byproduct of cloud computing; rather, it is a chance for libraries to leverage an affordable platform to create a useful and effective digital library. These authors see virtual libraries as being one step away from digital libraries. It has some shortcomings; which cloud computing can help with. The issues with a digital library maintained locally by the library and hosted on a server were emphasized by Wainaina (2021) that data resources of various libraries are relatively independent and therefore lead to building of redundant projects. Uneven economic development in different regions causes DL's resources to be relatively short. The cost of procuring, maintaining, installing and so on is high to solve this problem; they advocated an improvement in the user services model in libraries which includes the adoption of cloud technology in digital library. Cloud computing provides library the opportunity of building digital library in the cloud. Digital libraries built in the cloud makes resources, information, and services, at an efficient level, accessible via the network.

#### **Look Up Library Data**

Users can search a pool of library data using any device with Internet connectivity thanks to a unified search function offered by digital libraries built on cloud infrastructure. It is believed that cloud computing offers integrated library resources. Abdallah (2020) posited that Online Computer Library Center (OCLC) is among the best instances of leveraging cloud computing for data sharing among libraries. The statement went on to emphasize that OCLC provides a range of cloud-based services, including web share management system, acquisition, cataloging, and circulation, among other library-related functions. Each library can share its resources, services,

ideas, and issues with the cloud-based library community using a web share management system, which promotes an open and collaborative platform.

### **Hosting websites**

In the studies of Abdallah (2020) pointed out that a lot of libraries depend on institutional or commercial hosting services for their websites. This means that the library's online presence is provided by its parent organization rather than the library itself. Libraries can use cloud computing to host their own websites on the servers of third parties, absolving them of the responsibility for hosting and maintaining their own websites. One example of a website hosted outside of a library's servers is Google Sites, which permits multiple editors to access the site from different locations.

### **Automation of Libraries**

The term "library automation" describes the shift from traditional libraries, which gathered, arranged, and supplied materials and services in hard copy, to computerized libraries. Cataloguing, circulation, acquisition, and other library operations are all computerized in an automated library. Additionally, clients can access pooled resources through cloud computing, which are often located in remote data centers. Services can be scaled up or down, and clients are invoiced based on how often they utilize them (Al-Issa *et al*, 2019).

### **Infrastructure-As-Service (IaaS)**

In the studies of Zhang (2019) who explained that the IaaS model supplies merely the hardware and network; the customer (Library) installs or creates its own operating systems, software, and applications. The hardware and other fundamental functions are delivered through virtual machines accessible through a Wide Area Network or the Internet. In this approach, the client library usually pays on a per-use basis, while the IaaS service provider owns the equipment and oversees housing, operating, and repairing it.

### **Software-as-a Service**

A pre-made application, together with any necessary operating system, hardware, software, and network, are delivered in the Software as a Service model. SaaS uses a multitenant architecture to provide a single application via the browser to thousands of users. It eliminates the need for customers to make an upfront investment in servers or software license, and it saves providers money because all they must maintain is the app, as opposed to traditional hosting (Kumar, 2021).

### **Platform-as-a-Service**

In PaaS, an Operating System, Hardware, and Network are provided, and the customer installs or develops their own software and applications. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application (Zhang, 2019).

## **Research Design**

This study adopted descriptive survey research design. This design was chosen because it allows the researcher to collect data or information from sampled elements and provide a generalised description of the variables of study and inferred results for quick decision making. It was also chosen because data collected can be qualitative and quantitative, it gives a holistic understanding of a research topic. The choice of the design was also based on the definition given by Zhang (2019) who stated that a research design is a procedural plan applied to validly, objectively, accurately, and economically respond to questions in a study.

### Population of the Study

The population of this study consists of five (5) members of National Open University of Nigeria Library. The target population of the study includes the University Librarian and the (4) staff of the Information Technology (IT) unit of the National Open University of Nigeria Library who are responsible for the administration of cloud computing technology.

### Sample and Sampling Techniques

Purposive sampling technique was used to select four (4) staff of the Information Technology unit and the University Librarian of the National Open University of Nigeria Library who personally involved in administration of cloud computing technology. According to Setta (2019)' a purposive sampling is very useful for situations where you need to reach the targeted sample quickly and the sampling is not proportional in nature". Therefore, the subject of the study is made up of our (4) Information Technology (IT) staff and the University Librarian of the National Open University of Nigeria Lagos Main library.

### Instrument for Data Collection

The instruments used to collect data for this study were direct observations, semi-structured, unstructured interviews with the focus group and the use of digital recorder to record the interview process. The semi-structured interview involves the researcher personally interviewing staff of the Information Technology (IT) unit, based on a structured set of questions that have been prepared before the interview. This enabled the researcher to explain or elaborate on any question that is not well understood by the respondents.

### Method of Data Analysis

The data collected from the research instruments was first organised for analysis and transcribed into different types, depending on the source of information. The data was then tabulated and discussed descriptively.

### Results and Findings

#### Response Rate

The entire five (100%) target respondent in the Information Technology unit and the University Librarian of NOUN library participated in the semi-structured and structured interviews. This represented 100% response rate. Table 4.1 shows the response rate.

**Table 1: Response Rate**

S/N	National Open University of Nigeria Library	Category of Staff	Sample Size	Response Rate
1.		University Librarian	1	1
		Staff of Information Technology unit	4	4
Total			5	5

A hundred percent response rate was achieved for the structured and semi-structured focus group interviews. This high response rate was achieved because the population was very small. And the researcher had to formally seek for permission from the University Librarian, who instructed the staff of the Information Technology unit to give the researchers all the necessary support and cooperation in the data collection exercise. The entire five (100%) target respondent in the



It is interesting to find out what has been revealed in the above table via the cloud computing services compare to traditional methods of information archiving and retrieval in terms of efficiency and effectiveness in NOUN library. National Open University of Nigeria library has saved cost, staff time, electricity, maintenance of library services, scalability, cost reduction, anywhere-anytime access, on-demand self-service, resource pooling, and flexibility. The finding agrees with Al-Issa, Ottom, & Tamrawi (2019) studies, which stated that with cloud computing, information archiving and retrieval in terms of efficiency and effectiveness will help libraries may prevent financial waste, better track staff activities, and avert technological headaches such as viruses, system crashes, and loss of data among others. The findings imply that service delivery in NOUN library will be robust and efficient.

**Table 4: Potential drawbacks of utilising cloud computing services for information archiving and retrieval in a university library setting.**

Potential drawbacks of utilising cloud computing services for information archiving and retrieval in a university library setting	Indications
Downtime	√
Security and privacy	√
Vulnerability to attack	√
Limited control and flexibility	√
Vendor lock-in	√
Cost concerns	X
Fear of using the data for market campaigns	√
Usage Restrictions	√
Sustainability	√
Country Policies	√
Technical Issues	√
Obsolescence (hardware, software, file format media).	X
Legal Issues	√

Key: √ = Applicable

x = Not Applicable

Table 4 indicated the potential drawbacks of utilising cloud computing services for information archiving and retrieval in a university library setting as downtime, privacy and security, vulnerability to attack, limited control and flexibility, vendor lock-in, fear of using the data for market campaigns, usage restrictions, sustainability, country policies, technical issues, and legal issues. On the other hand, cost concerns and obsolescence (hardware, software, file format media) are not applicable in the potential drawbacks of utilising cloud computing services for information archiving and retrieval in a university library setting. This finding supports the studies of Ahmat (2015) who pointed out that one of the major benefits of cloud computing is its potential to reduce costs for libraries. Cloud computing can reduce costs associated with server maintenance, software licenses, and energy usage. Additionally, it can help to streamline library processes, saving time and money.

### Major Findings

1. The National Open University of Nigeria Library uses cloud computing services for cataloging, metadata storage, retrieval generation, the creation of a digital library, scholarly content search, file storage, community power development, and, of course, library automation for information archiving and retrieval.

2. In terms of efficiency and effectiveness, cloud computing services have saved cost, staff time, electricity, library service maintenance, scalability, cost reduction, anywhere-anytime access, on-demand self-service, resource pooling, and flexibility in the National Open University of Nigeria library.
3. Downtime, privacy and security, vulnerability to attack, limited control and flexibility, vendor lock-in, fear of using the data for market campaigns, usage restrictions, sustainability, country policies, technical issues, and legal issues are some of the potential drawbacks of using cloud computing services for information archiving and retrieval in the National Open University library setting.

### **Recommendations**

1. The Federal Government and the university management should work to develop core system components such as search and retrieval tools, user interfaces, user profiling services, and user authentication and authorisation services that work across individual collections and services, to improve the efficiency and effectiveness of information archiving and retrieval. They should also devote more resources to cloud services, which offer advantages over traditional library services such as increased flexibility, scalability, and cost savings.
2. University management should consider partnering with cloud computing service providers that specialised in information management and retrieval to take advantage of their expertise and experience in this area.
3. National Open University Library and the IT units should continue to monitor developments in cloud computing technology and evaluate new services and tools as they become available, to stay up to date with the latest trends and best practices in information management and retrieval.

### **Conclusion**

Conclusively, this study provides insights into the current state of cloud computing adoption in NOUN library and highlights the potential benefits of cloud computing, such as cost savings, scalability, and accessibility. It also identifies some of the setbacks and risks associated with cloud computing, such as security concerns and data privacy issues. Overall, the study provides a useful guide for NOUN library and other libraries considering the adoption of cloud computing services for information management and retrieval. This work has contributed to knowledge by providing insights into the use of cloud computing services for information archiving and retrieval in NOUN library. The study explores the benefits and risks of cloud computing adoption in the National Open University of Nigeria Library and provides a useful guide for NOUN library considering the adoption of cloud computing services for information management and retrieval. The study also highlights the potential cost savings, scalability, and accessibility benefits of cloud computing, as well as the challenges and risks associated with cloud computing, such as security concerns and data privacy issues. In conclusion, this research provides valuable information and insights into the use of cloud computing services for information management and retrieval in NOUN library which can help to inform future research and guide decision-making in this area.

## References

- Abdallah, N. (2020). Issues in Cloud Computing: Challenges, Threats, and Security Concerns. *Al Dar Research Journal for Sustainability*, 4(2), 3-64.
- Abdelaziz, A., & Alhelali, H. M. (2019). Security of cloud computing in libraries: Issues and solutions. In *2019 2nd international conference on new paradigms in teaching and research* (NPTR-19). DOI: 10.15224/978-1-63248-179-8-27
- Ahmat, K. A. (2015). *Emerging cloud computing security threat*: University of New York New York.
- Al-Issa, Y., Ottom, N.A. & Tamrawi, A. (2019). eHealth Cloud Security Challenges: A Survey. *Journal of Healthcare Engineering*, 23, 1-15.
- Kumar, R. (2021). Application of cloud computing technology for library re-designing: Moving beyond desktop applications. *Library Philosophy and Practice (e-journal)*. 5290. Retrieved on 11th of March 2024. <https://digitalcommons.uni.edu/libphilprac/5290>.
- Oyelekan, O. S. (2008). An Overview of the Status of Information and Communication Study on security strategy research, learning Technology (ICT) in Nigerian Education System in The African Symposium 82(3), 9-10.
- Setta, Y. (2019). Research on information security of digital library under the cloud computing environment library, Atlantic press. Jiangxi University of Science.
- Wainaina, F. (2020). Harnessing the power of cloud computing in Kenya. Retrieved March 25, 2022, Available at <https://www.itnewsafrika.com/2020/09/harnessing-the-power-of-cloud-computing-in-Kenya>.
- Zhang, H. (2019). *Study on security strategy research, learning*. Library of digital library under the cloud platform.1 (3). 42 44.
- Zhang, J., & Xie, K. (2020). Security concerns and solutions for cloud computing Adoption in libraries. In Proceedings of the 2020 10th International conference on cloud computing, data science & engineering (Confluence) (pp. 358-362). IEEE. DOI: 10.1109/confluence50645.2020.9049538
- Zoltan, B. & Milan, T. (2019). Modeling of data security in cloud computing. University of oregon: *applied information management journal*. 3 (2), 54.

## EDUCATION, POVERTY AND ECONOMIC GROWTH IN NIGERIA (1990-2022)

<sup>1</sup>Adeagbo, Joseph Olusegun, <sup>2</sup>Gbadebo Salako & <sup>3</sup>Oludele. A. Ojediran

<sup>1</sup>Department of Educational Management and Library and Information Science  
Emmanuel Alayande University of Education Oyo, Oyo State Nigeria.  
adeagbojo@eauedoyo.edu.ng /olusegunadeagbo63@gmail.com, +2348035857820

<sup>2</sup>Department of Economics, Emmanuel Alayande University of Education Oyo,  
Oyo State Nigeria

salakog@eauedoyo.edu.ng, +2348035738686

<sup>3</sup>Department of Economics, Emmanuel Alayande University of Education Oyo,  
Oyo State Nigeria

ojediranoa@eauedoyo.edu.ng, +2348058045854

### Abstract

*This study examined the relationship among education, poverty and economic growth in Nigeria between 1990 and 2022. Data were collected through secondary sources. Augmented Dickey Fuller (ADF) Unit Root Test, Co-integration Test, ECM Method, Granger Causality Test were employed for analysis. The Unit Root Test revealed that the data were stationary at  $I(0)$  and  $I(1)$  while the co-integration result confirmed the existence of long-run relationship among the variables. The ECM result showed that Total School Enrolment (TSE) and Life Expectancy Rate (LER) influenced RGDP positively at 5% significant level while Total Expenditure on Education (TEE) and Unemployment Rate (UNR) were inversely and significantly related to RGDP. The Granger Causality test revealed Uni-directional causality from TEE to UNR. Based on the findings, the study recommended that Government should formulate policies that will not only encourages more investments in education, but will also reduce poverty.*

**Keywords:** Education, Poverty, Economic Growth, Unemployment Rate, Life Expectancy Rate.

### Introduction

Education is a multidimensional process which no country can undermine because of its lofty roles in increasing literacy levels, supplying human capital and equipping human capital with needed knowledge and skills. Education contributes to national development by fostering literacy; developing programmes to achieve national objectives; eliminating imbalances in the educational system; reducing unemployment in the economy and enhancing judicious utilization of available resources (Ehigiamusoe, 2013). Education is regarded as exceptionally substantial constituent of economic growth and expansion (Salako, Ogunbunmi, & Adejumo, 2014); Ali and Jabeen, 2015). However, Nigeria's budgetary expenditure to education is not sufficient to suppress the broadening gap where only seven percent of Nigeria's \$24 billion 2018 budget is set aside for education, and it seems that new policies to improve expenditure on education is still improbable (VOA NEWS, 2018).

Poverty is complex, multidimensional and multifaceted with manifestations in the economic, social, political, environmental and all realms of human existence and has remained a major threat and challenge to humanity. (UNESCO, 2015). Poverty and its relationship with GDP have been paradoxical, because poverty is also increasing alongside economic growth in Nigeria. Corroboratively, Atuanya (2013) and Ademola-John (2019) observed that 45% of

Nigeria's population lives on less than US\$2 per day despite the abundance of natural and human resources in the economy.

The yearly Gross Enrollment Ratio (GER) as captured by (UNESCO, 2019) shows that the ratio of Out-of-School Children (OSR) in Nigeria is by far greater than the ratio of children in school due to poverty. Poverty is not only a constraint to educational development and achievement, it is also a constraint to economic growth and development (Dollar and Kraar, 2002; Alvaredo and Gasparini, 2015). Comparatively, while education is a potent instrument of poverty reduction and inevitable driver of economic growth (Lawal and Wahab, 2011; Salako et al, 2014) findings revealed that poverty exacerbates education and retard economic growth. Interestingly, while there is an inverse relationship between economic growth and poverty as revealed above, increase in economic growth, has been found to be an instrument of poverty reduction (Rodriguez, 2018)

However, despite the giant strides witnessed in the education sector in Nigeria in the last two decades, economic growth has not been inclusive and poverty rate has been on the increase (Varshney, 2019). Giving the aforementioned postulations, this study is motivated by the need to investigate the relationships among education, poverty and economic growth in Nigeria between 1990 and 2022. Most previous studies have focused mainly on the relationship between education and economic growth or between poverty and economic growth without taking into cognizance the forward and backward relationships among education, poverty and economic growth. These constitute the major gap which this study intends to fill.

## **Empirical Review**

### **Education, poverty and Economic growth**

Hofmarcher (2021) investigated the causal relationship between education, education level and different dimensions of poverty in 32 European countries. His finding revealed that any additional year of education reduces the chance of being under poverty line and of considering oneself as being poor. Oyegoke and Wasiu (2018) explored the effect of economic growth on poverty reduction in Nigeria using a time series data spanning 1980 to 2016. Unit Root, Johansen Co-integration and Vector Auto-regression estimation (VAR) were used for data analysis. The result revealed a negative relationship between economic growth and poverty incidence, while unemployment relates positively to poverty reduction.

Adeagbo and Abiola (2015), Aigbedion and Anyanwu (2016) examined the impact of public education expenditure on inclusive growth in Nigeria from 1995 to 2016. The study used time series data and adopted unit root test, causality test, co-integration analysis and error correction model analysis to estimate the data. From the findings, government education expenditure has a strong and positive impact and relationship with inclusive growth in Nigeria. Bakare (2012) examined the demand for education and economic growth in Nigeria. He applied Spearman Rank correlation approach for data analysis. His findings revealed that there is positive correlation between demand for education and economic growth.

Lawal and Wahab (2011) studied the relationship between education and economic growth in Nigeria. Time series data were collected between 1980 and 2008. Ordinary least squares technique was used to estimate the model. The result revealed that the achievement of rapid economic growth through boosting and rapid investment in education is a decision in the right direction.

Afzal, Malik, Begum and Sarwar (2019) explored the relationship among education, poverty and economic growth in Pakistan. Time series data from 1971 – 2009 was used in the

study. Auto-regressive Distributive Lag (ARDL) and Toda-Yamamoto Augmented Granger Causality (TYAGC) method of data analysis were adopted. The findings of the study confirmed that at both the short-run and long-run, physical capital has positive and significant effect on economic growth. Education affects economic growth positively and significantly only in the long-run. The results of Toda-Yamamoto Augmented Granger Causality (TYAGC) test confirmed bi-directional causality between education and economic growth, and between poverty and education.

Kibrom and Nagaraja (2017) explored the empirical analysis of the relationship between poverty and economic growth in Ethiopia between 1995 and 1996. This study estimated the fixed effect models (FEM) using panel data from four household income, consumption and expenditure (HICE) surveys. Result from this study indicated that the substantial decline in poverty incidence in Amhara region for the period between 1995/96 and 1999/00 and between 2004/05 and 2010/11 was attributed to increase in real household per capita expenditure while the reduction in inequality contributed to the reduction in poverty more than the contribution of rising per capita expenditure for the period between 1999/00 and 2004/05.

Stephanie (2017) explored the relationship between economic growth and poverty in Nigeria between 1980 and 2015. Findings revealed that the initial level of economic growth is not prone to poverty, while an increase in economic growth is prone to poverty. Angelique and Nicholas (2017) examined the causal relationship between poverty and economic growth in Swaziland during the period 1980-2011. The study used ARDL bound testing approach to Co-integration, and the ECM-based Granger Causality method. The finding revealed that economic growth does not Granger-cause poverty in Swaziland.

Edeh and Obi (2018) investigated the impact of education spending on poverty in Nigeria using a time series data for the period of 1999-2017. The study adopted Ordinary Least Square regression analysis. The findings revealed that education expenditure does not have impact on poverty over the sampled period. Nwamaka and Onyinyechi (2015) examined poverty and income inequality in Nigeria between 1991 and 2012. The study adopted Granger Causality technique. The study finds out that there was direct line causality between poverty and inequality as well as indirect channels through unemployment. On the other hand, Muniba, Saima, Shafique, Fareeha and Syed (2022) work on education, poverty and economic growth in Pakistan using generalized method of moments (GMM) confirmed that education has statistically significant and positive impact on economic growth but negative impact on the economic growth. Binuyo (2014) explored the effect of poverty on economic growth evidenced from Nigeria using a time series data from 1980-2010. Ordinary Least Square technique was employed to measure the incidence of poverty. The findings revealed the existence of overall significant effect of poverty on economic growth in Nigeria.

## Methodology

### Sources of Data and Estimation Techniques

Secondary method of data collection is used in this study. The time series data were collected from 1990-2022 on economic growth, educational expenditure and poverty rate in Nigeria. The data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics (NBS) and World Development Indicators (WDI).s This study applied Augmented Dickey Fuller (ADF) unit root test to hedge against spurious regression and co-integration technique to confirm the long-run relationship among the variables. Error Correction Model

(ECM) is used for estimating the parameters while Granger-Causality test is used to analyze the causal- relationship among the variables.

### Model Specification

This study drew from the combination of Oyegoke and Wasiu (2018) and Aigbedion et al (2017) models. According to Oyegoke and Wasiu (2018):

$$PovI_t = \alpha + \beta_0 RGDP + \beta_1 LER + \beta_2 UNR + \mu \quad (i)$$

However, according to Aigbedion et al (2017):

$$RGDP = f(TE, PSER, SSER, TSE, TPS, TSS, TTI) \quad (ii)$$

Deriving from equations ( i ) and (ii) above, the model for this study is derived and specified as:

$$RGDP = a_0 + a_1 (TE) + a_2 (TSE) + a_3 (LER) + a_4 (UNR) + \mu \quad (iii)$$

Where:

RGDP = Real Gross Domestic Product: TE = Total Expenditure on Education

TSE = Tertiary School Enrolment: LER = Life Expectancy Rate

UNR =Unemployment rate:  $\mu$  = error or disturbance term

$a_0, a_1, a_2, a_3$  and  $a_4$  are the parameters to be estimated

RGDP is a proxy for economic Growth while LER and UNR are proxy for Poverty. TE and TSE are proxy for Education.

## Results and Discussion

### Descriptive Statistics of the variables

Data collected for this study were analyzed using descriptive and regression methods. The Mean values of RGDP, TEE, TSE, LER and UNR are 24.4005, 178586.2, 2028753, 51.75313 and 17.44031 respectively while the Median of the variables are 24.56897, 85044.81, 2120428, 52.60000 and 16.20000. The Maximum values of the series are 36.96508 for RGDP, 651200.0 for TEE, 2819744 for TSE, 61.10000 for LER and 31.74000 for UNR while the Minimum values are 19.99025, 291.3000, 1078713, 26.90000 and 10.20000 respectively. The Measure of dispersion of each of the variables is 3.771836 for RGDP, 182768.4, for TEE, 495442.5 for TSE, 5.853920 for LER and 6.134188 for UNR. The Measure of asymmetry of the distribution of the series around its mean i.e skewness of all the variables are positive suggesting that all the variables in the model are positively skewed towards normality.

The Kurtosis that measures the peakness of the distribution of each of the variables are 5.761950 for RGDP, 2.465836 for TEE, 2.077441 for TSE, 12.07269 for LER and 2.315307 for UNR. These values are greater than 3, exhibiting that all the variables are leptokurtic in nature. The Jarque-Bera for the series are 21.99065 with a p-value of 0.000017 for RGDP, 3.659126 with p-value of 0.160484 for TEE, 1.539435 with a p-value of 0.463144 for TSE, 147.9590 with a p-value of 0.0000 for LER and 3.156060 with a value 0.206381 for UNR. The p-value for all the variables are significant at 5% level meaning that all the variables are normally distributed. (Gujarati and Poter, 2009).

**Table 1.1: Descriptive Statistics of the Variables**

	RGDP	TEE	TSE	LER	UNR
Mean	24.40005	178586.2	2028753	51.75313	17.44031
Median	24.56897	85044.81	2120428.	52.60000	16.20000
Maximum	36.96508	651200.0	2819744.	61.10000	31.74000
Minimum.	19.99025	291.3000	1078713.	26.90000	10.20000
Std. Dev.	3.771836	182768.4	495442.5	5.853920	6.134188
Skewness	1.488675	0.784062	-0.275437	-2.676547	0.688883
Kurtosis	5.761950	2.465836	2.077441	12.07269	2.315307
Jarque-Bera	21.99065	3.659126	1.539435	147.9590	3.156060
Probability	0.000017	0.160484	0.463144	0.000000	0.206381
Sum	780.8016	5714759.	64920086	1656.100	558.0900
Sum Sq.Dev.	441.0291	1.04E+12	7.61E+12	1062.320	1166.476
Observations	32	32	32	32	32

Source: Authors Computation (2023)

**Unit Root Test**

Augmented Dickey-Fuller (ADF) and Phillip Perron tests were used to test for the stationarities of the variables. The results showed that the variables were stationary at I (0) and I(I)

**Table 1.2: Result of Unit Root Tests**

VARIABLE	ADF TEST		PHILLIP-PERRON TEST		ORDER OF INTEGRATION	
	LEVEL	1 <sup>ST</sup> DIFF.	LEVEL	1 <sup>ST</sup> DIFF	LEVEL I(0)	1 <sup>ST</sup> DIFF I(1)
RGDP	-1.9634I(0) (0.3005)	-6.3356I(1) (0.0000)	-2.4247I(0) (0.1432)	-6.6742I(1) (0.0000)	I(0)	I(1)
LER	-3.5970I(0) (0.0117)	-4.8104I(1) (0.0006)	-2.6594I(0) (0.0922)	-10.2854I(1) (0.0000)	I(0)	I(1)
TEE	-3.3943I(0) (0.0210)	-1.1412I(1) (0.6820)	-1.2108I(0) (0.6575)	-6.9827I(1) (0.0000)	I(0)	I(1)
TSE	0.5810I(0) (0.9840)	-3.8074I(1) (0.0124)	-3.6997I(0) (0.0094)	-18.2005I(1) (0.0001)	I(0)	I(1)
UNR	-0.5859I(0) (0.8569)	-2.5111I(1) (0.1254)	-0.6988I(0) (0.8330)	-5.1579I(1) (0.0002)	I(0)	I(1)

\*Significant at 5% level. Source: Authors Computation (2023)

**Long-run relationship among the variables**

Following the approach of Johansen and Juseline (1990), two likelihood ratio test statistics, the maximum eigenvalue and trace tests were utilized to determine the number of co-integrating vectors. The co-integrating tests results revealed that long-run relationship existed among the variables.

**Table 1.3 Johansen Co-Integration Test**

HYPOTHESISED NO OF CE(S)	EIGENVALUE	TRACE STATISTIC	0.005 CRITICAL VALUE	PROB.**
None*	0.643780	63.88967	69.81889	0.1357
At most 1	0.468639	34.98791	47.85613	0.4486
At most 2	0.299247	17.28315	29.79707	0.6191
At most 3	0.195483	7.326347	15.49471	0.5400
At most 4	0.043182	1.235979	3.841466	0.2662

Trace test indicates there are no co-integrating equations at the 0.05 level, \*denotes rejection of the hypothesis at the 0.05 level

Source: Authors Computation (2023)

**Result of Regression Analysis**

**Table 1.4: Result of Error Correction Model (ECM)**

VARIABLE	CO EFFICIENT	STD. ERROR	T- STATISTIC	PROB.
C	17.52965	5.563416	3.150880	0.0055
LER	0.211769	0.121575	1.741883	0.0986
TEE	-1.63E-05	4.85E-06	-3.363350	0.0035
TSE	1.69E-07	2.06E-06	0.082248	0.9354
UNR	-0.017282	0.163849	-0.105476	0.9172
ECM (-1)	-0.385318	0.484631	-0.795076	0.4369

R-squared= 0.512110; Adjusted R-squared =0.376585; F-statistic= 3.778709, Pro (F-statistics) =0.016268: Durbin-Watson stat= 1.808487.

Source: Authors Computation (2023)

From Table 1.4 above, the coefficient of Life Expectancy Rate (LER) is 0.2118 and statistically significant at 10% level. The positive coefficient value of Life Expectancy Rate (LER) implies that 1% increase in Life Expectancy Rate (LER) will result in 2.12% increase in Economic growth. Total Expenditure on Education (TEE) showed a negative relationship of 1.63E-05 with RGDP. It showed that a one percent increase in Total expenditure will lead to 1.63% reduction in RGDP. Hence, Total Expenditure on Education is not an important determinant of Real Gross Domestic Product (RGDP) in Nigeria.

Total School Enrolment (TSE) showed a direct relationship with economic growth in Nigeria. From the result, 1% increase in Total School Enrolment will lead to about 1.69% increase in RGDP. The result is also significant at 5% level since the probability value is less than 0.05. Unemployment Rate (UNR) result from the table also conformed to a-priori expectation. The result revealed a negative relationship with RGDP. It indicates that a 1% increase in unemployment rate will lead to about 1.7% reduction in RGDP. Furthermore, the significance of the Error Correction Model (ECM) is consistent with the result of co-integration among variables. The coefficient of Error Correction Mechanism (-0.385318) measured the speed of adjustment with which the variables are returning to long run equilibrium position when there is innovations in the economy.

The R-square from the result showed that RGDP is explained by about 51.21% of the explanatory variables. The F-statistics which showed the overall significance of the model showed a value of 3.778709 with  $p = 0.016268$ . This indicates that the overall model is significant since  $p < 0.05$ . The Durbin Watson value at 1.808487 indicates the absence of serial correlation. The model selection criterion which involves the Akaike Information Criterion and Schwarz Criterion showed a value of 5.403422 and 5.897936. These indicate that the model selection is good.

### Result of Granger Causality Test

Table 1.5 indicated the presence of no causality either from one variable to another respectively, except from TEE to UNR. This suggested that TEE can Granger caused UNR.

**Table 1.5: Result of Granger Causality Test**

Null Hypothesis:	Observations	F-Statistic	Prob.
TEE does not Granger Cause RGDP	31	2.24819	0.1257
RGDP does not Granger Cause TE		0.48356	0.6220
TSE does not Granger Cause RGDP	28	0.55875	0.5795
RGDP does not Granger Cause TSE		0.06830	0.9342
LER does not Granger Cause RGDP	31	0.35107	0.7072
RGDP does not Granger Cause LER		0.92452	0.4094
UNR does not Granger Cause RGDP	31	0.43137	0.6542
RGDP does not Granger Cause UNR		0.03952	0.9613
TSE does not Granger Cause TE	28	0.28504	0.7546
TEE does not Granger Cause TSE		1.55020	0.2336
LER does not Granger Cause TE	31	0.24563	0.7840
TEE does not Granger Cause LER		0.70143	0.5050
UNR does not Granger Cause TEE	31	0.18281	0.8340
TEE does not Granger Cause UNR		5.15519	0.0130
LER does not Granger Cause TSE	28	0.47044	0.6306
TSE does not Granger Cause LER		0.06527	0.9370
UNR does not Granger Cause TSE	28	2.63810	0.0930
TSE does not Granger Cause UNR		0.46963	0.6311
UNR does not Granger Cause LER	31	0.83195	0.4465
LER does not Granger Cause UNR		0.32641	0.7244

Source: Author's Computation (2023)

## Discussion of Findings

Results of the analysis from Table 1.5 above revealed that Total Expenditure on Education (TEE) exhibited negative relationship with economic growth while Total School Enrolment (TSE) had positive relationship with economic growth. The result of TEE is in consonance with the results of Omodero and Nwangwa (2020) but contradicted the results of (Salako et al,2014; Inimino et al (2017) which revealed positive relationship between educational expenditure and economic growth and the finding of Muniba et al (2022) that education has positive impact on economic growth. TSE which is another proxy for education showed positive relationship with economic growth, but negated the findings of Omodero and Nwangwa (2020). LER revealed a positive relationship with economic growth, while Unemployment Rate (UNR), exhibited negative relationship with economic growth. This result of UNR aligned with the finding of Adelowokan et al (2019). The causality result of this study contradicted the study of Angelique and Nicholas (2018) who posited that there existed a bi-directional causality between education and economic growth, between economic growth and poverty, but aligned on the relationship between poverty and education.

## Conclusion

Investing in education is one of the keys to economic growth process in Nigeria. This is revealed in the positive relationship between TSE and RGDP. Poverty and RGDP are also inversely related to each other. The co-integration results confirmed the existence of long-run relationship among education, poverty and economic growth while causality flows from TEE to UNR. Thus, it can be concluded that quality and better education can be an effective tool for reducing poverty and enhancing economic growth in Nigeria. Poverty must be reduced to accelerate economic growth and also, economic growth must be re-invigorated to reduce poverty.

## Recommendations

Based on these findings, it is recommended that Government should formulate policies that will not only focus on educational development through adequate funding, but will also reduce poverty and enhance economic growth through implementation of improved techniques to boost economic progress and subsequent reduction of poverty in Nigeria.

## References

- Adeagbo, J. O. and Abiola, B. A. (2015) Human capital development as a recipe for sustainable growth in Nigeria. *International Journal of Recent Research in Commerce Economics and Management*, 2(3), 86-105
- Adegboyega, (2014). Economic growth, poverty and inequality link: Nigeria experience. Ago Iwoye. *Journal of Social and Behavioral Sciences*, 3(2).
- Adelowokan, O. A., Babasanya, A.O., Maku, O.E.&Adesoye, A.B. (2019). Unemployment, poverty and economic growth in Nigeria. *Journal of Economics and Management*, 35(1), 5-17.
- Ademola-John, I. C. (2019). Trends and patterns of education, poverty and economic growth in Nigeria (1986-2015). *Dutse Journal of Economics and Development Studies*, 8, 58-64
- Afzal, M., Farooq, M. S., Ahmad, H. K., Begum, I & Quddus, M. A. (2019). Relationship between school education and economic growth in Pakistan: ARDL bounds testing approach to co-integration. *Pakistan Economic and Social Review*, 1(48), 39-60.
- Aigbedion I. M. & Anyanwu, J. C. (2016). Government education expenditure for inclusive

- growth in Nigeria: An error correction model. Selected Papers of the Nigerian Economic Society 56 Annual Conference, October 12-15, 2015 Sheraton, Abuja-Nigeria.
- Aigbedion I.M., Iyakwari A.D. & Gyang J.E. (2017). Education sector and economic growth in Nigeria: An impact analysis. *International Journal of Advanced Studies in Economics and Public Sector Management*. 5(3)
- Alli, H.& Jabeen, A. (2015). Effects of education on economic growth: Evidence from Pakistan, *American Journal of Economics, Finance and Management*, 1(6), 579-585
- Alvaredo, F.& Gasparini, L (2015). Recent trends in inequality and poverty in developing countries. In Handbook of income distribution. Amsterdam, Elsevier
- Atuany, P. (2013). Nigeria's economy largest in Africa as rebasing boots GDP to \$405bn. Retrieved on 19<sup>th</sup> June, 2014 from [bussinessdayline.com/2013/12/niger](http://bussinessdayline.com/2013/12/niger)
- Bakare, A. S. (2012). The growth implication of human capital investment in Nigeria: An Empirical Study. *Journal of Economics and Social Studies*, 5(2).
- Binuyo (2014). Effect of poverty reduction programmes on economic development: Evidence from Nigeria. *Arabian Journal of Business and Management Review*. 4(1)
- Dollar, D & Kraay, A (2002). Growth is Good for the poor. *Journal of Economics Growth*, 7, 195-225.
- Edeh, C.E., Obi, A. & Obi, C.O. (2018). Impact of education spending on poverty reduction in democratic dispensation in Nigeria. , [www.iiardpub.org](http://www.iiardpub.org)
- Ehigiamusoe, U. K. (2013). Education, economic growth & poverty rate in Nigeria: Any nexus? *Journal of Social and Development Sciences*, 4(2), 1-7.
- Gujarati, N. & Porter, D. (2009). Basic Econometrics, U.S, McGraw Hill, 3<sup>rd</sup> Edition.
- Hofmarcher, T. (2021). The effect of education on poverty: A European perspective. *Economics of Education Review*, 83, <https://www.sciencedirect.com/science/article/abs/pii/S0272775721000431>
- Inimino E.E., Tubotamuno, B & Shaibu, D. O. (2017). Public education expenditure and Economic growth in Nigeria. *International Journal of Economics and Business Management*, 3, 42-57.
- Johansen, S. & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration-with application to the demand for money. *Oxford Bulletin of Economics and Statistics*, 52 (169-210. doi:10.1111/j.1468-0084.1990.mp52002003.x
- Kibrom & Nagaraja (2017). Empirical analysis of the relationship between poverty and economic growth in Ethiopia: Micro-Panel Data Evidence from Amhara Region.
- Lawal, A. & Wahab, T. I. (2011). Education and economic growth: The Nigerian experience. *Journal of Emerging Trends in Economics and Management Sciences*, 2 (3), 225-231.
- Muniba, A, Saima, S., Fareeha, R and Syed, A, A. S (2022). Education, poverty and economic growth in Pakistan. *Journal of Public Value and Administrative. Insight*. 5(1) 4-12. Doi:<https://doi.org/1031580/joval.v5i1.2461>
- Nwamaka, E.& Onyinyechi, D. (2015). Poverty and income inequality in Nigeria: Any Causality? *Asian Economic and Financial Review*, 5(3), 439-452.
- Oyegoke, O. E .and Wasiu, A.Y. (2018). Effect of economic growth on poverty reduction in Nigeria. *Journal of Economics and Finance (IOSR- JEF)*, 9.
- Rodriguez-Garza, J. (2018). Poverty and economic growth in Mexico, *Social Sciences*, 7, 183.
- Salako, G., Ogunbunmi, S. T.& Adejumo, M.O. (2014). Education and economic growth in Nigeria between 1980 and 2010. *International Journal of Economics and Development Issues*, 13 (1&2), 14-34.

- Stephanie, G. (2017). Relationship between Economic Growth and Poverty Reduction in Nigeria.
- UNESCO (2015). Inclusive education: The way of the future. In Conclusions and recommendations of the 48th session of the International Conference on Education (ICE), 25-28. Geneva.
- UNESCO Institute for Statistics (2019). Nigeria-School enrolment, tertiary (% gross). Available online at <http://uis.unesco.org/>

## ATTITUDE OF PREGNANT MOTHERS TOWARD ANTENATAL CARE SERVICES IN NORTH-WEST ZONE, NIGERIA

<sup>1</sup>Murtala Mohammed Jangebe, <sup>2</sup>Mubarak Umar, <sup>3</sup>Fatima Zubairu, <sup>2</sup>Bashir Abdullahi

<sup>1</sup>School of Health Technology, Tsafe, Zamfara State  
Jangebe2013@gmail.com, 08034580231

<sup>2</sup>Department of Human Kinetics and Health Education  
Ahmadu Bello University, Zaria  
mubfta@gmail.com, 07066660066

<sup>3</sup>Zamfara State College of Art and Science  
fatimazubairuone@gmail.com, 08030886320

### Abstract

*The purpose of this study was to assess the attitude of pregnant mothers toward antenatal care services in North-West zone of Nigeria. To achieve this purpose, an ex-post facto research design was used. The population for the study comprised of pregnant mothers in the seven (7) states of North-west one of estimated at one million two hundred and twenty-three thousand, five hundred and seventy-one (1,223,571). The sample size for this study consisting of 768 respondents were drawn from three sampled state in the North-west zone of Nigeria. The participants were selected using multi-stage sampling techniques. For the purpose of data collection, a close-ended questionnaire was used to obtain responses from the respondents. The 768 copies of the questionnaire were distributed and 763 (99.5 %) copies of the questionnaire were duly filled and returned. Descriptive statistics of frequencies, percentages, means and standard deviation were used to describe the demographic characteristics of the respondents and to answer the research question. One sample t-test was used to test the formulated hypothesis. Major finding revealed that: attitude of pregnant mothers in North West zone of Nigeria towards antenatal care services was significant negative ( $p = 0.13$ ). Thus, it was concluded that the attitude of pregnant mothers in North West zone of Nigeria towards antenatal care services was negative. On the basis of the conclusion the following recommendations were made: There is need for the antenatal talk to be more of an interactive session between the nurses and the pregnant mothers, so that the pregnant mothers, can discuss their doubts about any confusing matter and also ask questions regarding the aspects of the talk that is not clear to them.*

**Keywords:** Attitude, pregnant mothers, antenatal care services, north-west zone

### Introduction

Antenatal care is a therapeutic and overall care that is delivered to pregnant women during prenatal period and it is a programme provided with the goal of meeting both psychosomatic and curative necessities of pregnant women within the framework of health care system. Main goal of antenatal care is to safeguard the mother to reach the end of prenatal period as fit as, or even better than she was before the pregnancy (Federal Ministry of Health {FMOH}, 2014). Pregnancy and child birth is a natural process which in most cases comes to good end even without any intervention; however, in a relatively high proportion of pregnancies there are complications and some of which are very serious and of a life threatening nature (Igbokwe, 2012). Complications associated with various maternal issues are indeed major contributors to reproductive health concerns among millions of women worldwide. Most of the women between 15-49 years of age are not aware of health care services, therefore, this group is highly

vulnerable to pregnancy-related problems. Death and illness from pregnancy-related causes are highest among poor women everywhere in societies who are disproportionately poor, illiterate and politically powerless (Ocholla-Ayayo, 2014). Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviours and parenting skills. The World Health Organization (2017), recommends a minimum of eight ANC visits for every pregnant woman and to have their first contact in the first twelve weeks' gestation with subsequent contacts taking place at 20, 26, 30, 34, 36, 38 and 40 weeks of gestation.

Park (2015) views attitude as acquired characteristics of an individual which predisposes him or her to respond in some preferential manner. In the present context, an attitude refers to pregnant mothers' affective feelings of likes and dislikes to focused antenatal care services. According to Ojo (2014), attitude of pregnant mothers towards antenatal care services are greatly influenced by level of knowledge on antenatal care services, the pregnant women's personal experience to focused antenatal care services can be positive or negative which has a significant influence on the attitude of pregnant women to antenatal services. Pregnant women with basic knowledge on antenatal care services usually manifest positive attitude (Hala, El-Borgy, & Huda, 2014).

United State Agency for International Development {USAID}, (2016), reported that North West zone of Nigeria like other geo-political zones in Nigeria has formulated strategies such as primary health care program, which, however, faces tremendous challenges in achieving national wide coverage on maternal and child birth care. In North West zone, hospital records indicated that 70% of maternal deaths are directly attributable to complications of pregnancy, labor & delivery, while 30% are from infections occurring during pregnancy.

The high rate of maternal and infant mortality in the world is worrisome, the trend as revealed in many literatures including WHO (2013), shows that, worldwide nearly 600,000 women aged between 15 and 49 die each year as a result of complications arising from pregnancy and child birth. It is observed that in some states in North West zone of Nigeria, an estimated 200,000 babies die as stillbirths during their last twelve weeks of pregnancy. It is estimated that babies who die before the onset of labour, or ante partum stillbirths, account for two-thirds of all stillbirths in some states where the mortality rate is greater than 22 per 100 births – nearly all states in Nigeria (Medical Center Health System {MCHS}, 2015).

The majority of morbidity and mortality among pregnant mothers are avoidable through timely good attitude toward antenatal care services. Regrettably, seeking of skilled care remains low in Nigeria, especially in the North West zone of Nigeria where home-based birth is the norm. Based on the field experience of the researcher, it was observed that pregnant women were not regular in attending antenatal care clinics in Shinkafi, Bukuwyyun, and Zurmi, which perhaps is caused by some factors such as; lack of knowledge of antenatal care services and/or poor attitude towards antenatal care services. Invariably, all of these may contribute to still birth, asphyxia, eclampsia, maternal and child mortality among others. Given the above the researchers decided to find out why pregnant Mothers were not regular in attending antenatal care services, could it be their attitude towards antenatal care services. The study therefore the attitude of pregnant mothers towards antenatal care services in North West zone of Nigeria.

### **Objective**

The main purpose of this study was to assess the attitude of pregnant mothers towards antenatal care services in North West zone of Nigeria.

## Research Question

What is the attitude of pregnant mothers towards antenatal care services in North West zone of Nigeria?

## Hypothesis

Attitude of pregnant mothers towards antenatal care services in North-West zone of Nigeria is not significantly positive

## Methodology

Survey research design was adopted for this study, Njodi and Bwalla (2010) pointed that Survey is the systematic way of action which provides necessary information to a specific population on current status of the population one or more variables.

The population for this study comprised of all pregnant mothers in the seven (7) states of North-West zone (Jigawa, Kebbi, Kano, Kaduna, Katsina, Sokoto and Zamfara), estimated to one million two hundred and twenty-three thousand, five hundred and seventy-one (1,223,571) (National Bureau of Statistic, 2017)

The sample size for the study consisted of 768 pregnant mothers drawn from the population. Sample size selection was guided by Morgan and Kreychie's (1970) table to determine sample size.

**Stage I:** The already existing three (3) zones were considered as strata. This stratification was done by FMOH (2017), on the basis of proximity, in which a stratum consisted of two (2) states with the exception of the 3<sup>rd</sup> stratum which consisted of three (3) States. Namely: Jigawa and Kaduna as first stratum, Kano and Katsina as second stratum, while Sokoto, Kebbi and Zamfara as third stratum.

**Stage II:** in this stage, three (3) states were selected from each strata using simple random sampling technique. To select a total of nine (9) senatorial districts and nine (9) local government areas, one (1) from each senatorial district, the same simple random sampling technique was used, as the same technique was used to select two healthcare facilities from each of the selected local government area for the study. Hence, a total of eighteen (18) health care facilities were selected from the nine (9) LGAs and used for this study.

**Stage III:** To determine the number of respondents in each selected LGA and healthcare facility, a proportionate sampling procedure was used. This technique was used to give equal chance of being selected to each respondent. It is calculated as follows:

$$\frac{N_i}{N} \times n$$

Where:  $N_i$  = Sub population of various category

$N$  = Total population

$n$  = Simple size

**Stage IV:** In this stage systematic sampling technique was used in which odd numbers were selected. For example, participant number one (1) who sat in a row was given a copy of the questionnaire and number three (3), number five (5), number seven (7) and so on until the required numbers of participants per health facility were obtained. This distribution was done in the all selected health facilities by the researcher and his research assistants using the same technique.

**Table 1: State, Local government Areas, Health facilities and Numbers of Respondents**

State	LGA	Population of Pregnant mothers per LGA	Health Facilities	No. of Register Pregnant mothers	Respondent
<b>Kano</b>	Bichi	15004	G/hospital Bichi.	53	20
			Badime PHC.	58	22
	Fage	23287	Murtala Specialist hospital.	189	71
			Fagge PHC.	172	65
	Wudil	16092	G/Hospital Wudil.	72	27
			Darki PHC.	63	24
<b>Katsina</b>	Bokori	34679	PHC Bokori.	211	79
			CHC Tsigi.	311	117
	Daura	1758	G/Hospital Daura.	48	18
			Daura PHC.	22	8
	Dutsin-Ma	14871	PHC Dt/Ma.	52	20
			CHC Dt/Ma.	60	23
<b>Zamfara</b>	Gusua	24158	Specialist Hospital.	201	76
			G/Hospital Gusau.	187	70
	Talata Mafara	19693	G/Hospital T/M.	103	39
			Yanhudu PHC T/M.	98	37
	Tsafe	17896	Bildis PHC Stafe.	66	25
			G/Hospital Tsafe.	78	29
<b>Total</b>		<b>167438</b>		<b>2044</b>	<b>768</b>

### Instrument for Data Collection

The research instrument used for this study was a closed ended questionnaire titled “Attitude of pregnant mothers toward antenatal care services in North-West zone, Nigeria”. The questionnaire consists of two (2) sections: Section A contained three (3) statements on personal data of the respondents. Section B contained ten (10) statements on attitude towards antenatal care service among pregnant mothers in North-West zone. To score the responses of the respondents, as based on how they felt towards a particular item, the 4-point Modified Likert scale was used as follows: Strongly Agree (SA) =4; Agree (A) =3; Disagree (DA) =2; Strongly Disagree (SD) =1. Therefore, any mean score of response that is 2.5 and above were considered acceptable or positive and any mean score of response that is below 2.5 was not acceptable but regarded as negative.

In order to ascertain the reliability of the instrument used in this study, a pilot study was conducted. Two health facilities were randomly selected because they formed part of the population of the health facilities in North West zone, Nigeria. In each of these selected sampled health facilities, twenty (20) questionnaires were purposively administered to 20 pregnant mothers who attended two health facilities on Tuesday and Thursday. Hence, a total of 40 questionnaires were purposively administered to 40 respondents. The copies of questionnaire were retrieved on the spot and processed for reliability through Cronbach Alpha.

The results revealed that Cronbach Alpha reliability on, attitude toward antenatal care services was 0.86. This was a confirmation of test of reliability which according to Spiegel (1992), revealed that, the instrument is considered reliable if it's reliability coefficient lies between 0 and 1, and that the closer the calculated reliability coefficient is to zero, the less reliable is the instrument, and the closer the calculated reliability co-efficient is to 1, the more reliable is the instrument. Based on the result shown, the instrument could be considered reliable for this study, since an acceptable reliability of an instrument is 0.50.

Introduction letter was collected from the Head of Department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria, and submitted to State Ministries of Health and clinics. To collect data for this study, 768 copies of the questionnaire were distributed to pregnant mothers attending antenatal clinic in the nine (9) sampled LGAs; three (3) in each state. The researcher employed the services of six (6) instructed research assistants (two research assistants in each of the sampled States) for the distribution and collection of the questionnaire. In each local government area, the researcher and his two (2) research assistants administered the questionnaire to the respondents on Tuesdays and Thursdays as these are their visiting days for antenatal clinics. The researcher and his research assistants retrieved the filled questionnaire on the spot. The procedure for data collection lasted for six weeks, at least 2 weeks per state.

Descriptive statistics of frequency, percentages, mean score and standard deviation were used to describe the demographic characteristics and to answer the research question. Inferential statistics of one sample t-test was used to test the null hypothesis, the hypothesis was tested at 0.05 level of significance.

## Results

**Research Question:** What is the attitude of pregnant mothers towards antenatal care services in North West-zone of Nigeria?

**Table 2: Mean Scores of Responses on attitude of pregnant mothers towards antenatal care services in North-West zone of Nigeria**

S/no	Statements	Mean	SD
1	Screening of pregnant mothers for HIV should be done during antenatal care clinic in the hospitals.	2.47	1.19
2	Pregnant mothers should be glad to stand on weighting scale and any other measuring devices during antenatal care in the hospital	2.18	1.15
3	Regular checking for blood pressure should be encouraged during antenatal care clinics for the pregnant mothers	2.51	1.20
4	There should be need for respiratory rate checking for the pregnant mothers during antenatal care clinic services	2.49	1.21
5	The prefer to go for hepatitis B virus screening during antenatal care	2.38	1.21
6	I think there are immunization with tetanus toxoid vaccine in antenatal care	2.54	1.19
7	I prefer checking my blood sugar level when I am pregnant	2.44	1.22
8	I prefer doctor taking my blood for malaria screening when I am pregnant	2.48	1.20
9	I like ultrasound scanning during pregnancy by pregnant mothers at antenatal care	2.33	1.22
10	I like pregnant mothers accept urine test for protein and glucose during antenatal care visit	2.50	1.19
	<b>TOTAL</b>	<b>2.43</b>	<b>1.20</b>

Concerning attitude of pregnant mothers towards antenatal care services, Table 2: shows that the respondents showed negative attitude towards most of the antenatal care services as most of the mean scores of responses were less than 2.50, except items 6, and 3 whereby the means score of responses were all more than 2.5, which means that the participants agree that

immunization with tetanus toxoid vaccine during antenatal care visit and regular checking for blood pressure was encourage during antenatal clinics (2.54, and 2.51). The respondents did not like standing on weighting scale and any other measuring devices during antenatal clinic in the hospital as is revealed by (2.18; SD. 1.15) which is the lowest mean score of the responses shown in the Table. The aggregate mean score of 2.43 indicates that pregnant mothers in North West zone of Nigeria has negative attitude towards antenatal care services.

**Hypothesis:** Attitude of pregnant mothers towards antenatal care services in North-West zone of Nigeria is not significantly positive.

**Table 3: One sample t-test Analysis on Attitude of Pregnant mothers towards antenatal care services in North-West zone of Nigeria.**

Variable	Mean	Std.	Df	t-value	P-value.
Attitude	2.432	1.197	9	70.812	0.13

$t(9) = 1.833$   $P > 0.05$ .

Table 3 above shows result on the attitude of pregnant mothers towards antenatal care services, observed t-value of 70.812 at 9 degree of freedom (df) and P-value of 0.13 which is greater than 0.05. This shows that attitude of pregnant mothers towards antenatal care services in North West zone of Nigeria is not significantly positive. The null hypothesis is hereby retained.

## Discussion

The outcome of this study revealed that pregnant mothers in North West zone of Nigeria do not have positive attitude towards antenatal care services with a p-value of 0.13. This finding is in line with Igbokwe (2012), whose study showed that a woman's attitude towards her pregnancy has been found to influence preventive healthcare utilization and the author noted that women with few or no prenatal care visits had more negative attitudes about being pregnant and the importance of antenatal care services than those who had adequate care. The author further noted that absence of illness and lack of awareness are among the reasons for not utilizing antenatal care service (such as prenatal care). Swedo (2012), revealed that lack of prenatal care is an important risk factor for maternal mortality, in urban India women with high levels of prenatal care were nearly four times more likely to seek antenatal care from trained assistants at delivery than women with low levels of prenatal care, providing a potential explanation for the importance of prenatal care in maternal pregnancy outcomes. Sadly, the author noted, many women learn about the importance of prenatal care through loss and personal tragedy. According to Swedo (2012), women who experienced prior foetal loss or newborn death were more likely to seek or receive prenatal care if complications were experienced during earlier pregnancies, women were more likely to seek early and have adequate prenatal care. Conversely, the researcher is of the opinion that pregnant mothers without previous obstetric problems were more likely to seek prenatal care lately. Anduallem *et al*; (2015), reported that 29.4% of the respondent had negative attitude towards antenatal care service. The result was lower than the result of Chidozie, *et al*. (2014) who reported that 61.9% of respondents had negative attitude towards Antenatal care and 16% of the pregnant mothers demonstrated negative attitude towards exercise in pregnancy. According to Ali, Akhtar, Muhammad and Ali, (2015), pregnant mothers in North West zone of Nigeria attitude towards antenatal services was negative. It reveals that attitude of pregnant mothers with secondary school and tertiary education was positive while pregnant women with no formal education and primary educations were negative respectively.

## Conclusion

The pregnant mothers in North-west zone of Nigeria have negative attitude toward antenatal care services.

## Recommendations

1. Primary Healthcare should organize house to house enlightenment campaign on the benefits of antenatal care services.
2. There is need for the antenatal talk to be more of an interactive session between the nurses and the pregnant mothers, so that the pregnant mothers can discuss their doubts about any confusing matter and also ask questions regarding the aspects of the talk that is not clear to them.

## References

- Ali, Y. A., Akhtar A. Q., Malik, M. A., & Hasan Ali. (2015). Comparative study of Knowledge, Attitude and Practices among Antenatal Care Facilities utilizing and non-utilizing women. *Journal of Public Health*, 55(2):74-78
- Andualem, G., Fagbamigbe, A., & Korter, G. (2015). Practice, knowledge and perception of ANC service among pregnant women and nursing mothers in South West Nigeria. *International Journal of Maternal Child Health*, 1(1), 7-16.
- Chidozie, E. M., Olubukayomi, E., Adebayo, A. B., Adeyemi, O. O., Arije, O. O., Dada, O. A., Akinwande, T. O., & Ibidun A. A. (2014). Knowledge and Attitude of Nigerian Pregnant Women towards Antenatal Exercise: A Cross-Sectional Survey. *Obstetrics and Gynecology*, 26 (5), 30-38.
- Federal Ministry of Health (2017). Health and health related indicator Addis Ababa, Ethiopia. *Journal of science*, 22(4), 77-75.
- Federal Ministry of Health (FMOH). (2014). saving newborn lives in Nigeria: Newborn health in the context of integrated maternal, Newborn and Child Health Strategy. Abuja: *FMOH Serve the Children*.
- Hala, I. K., El-Borgy, M. D., & Huda, O. (2014). Knowledge, attitude and practices of pregnant women towards antenatal care in healthcare centers in Banghazi, Libya. *Journal of the Egyptians Public Health Association*, 89(3), 119-126.
- Igbokwe, C. C. (2012). Knowledge and attitude of pregnant women towards antenatal services in Nsukka Local Government Area of Enugu state, Nigeria. *Journal of Research in Educational and Society*, 2(3), 1-6.
- Medical Center Health System System (2015). Utilization of antenatal care services in Ethiopia. Retrieved from: <http://www.leadershipeditors.com/ns/index.php?option=comcontent&view=article> Accessed on 29 April 2018.
- Morgan, D.W., & Kreycie, C. (1970). Educational and psychological measurements autumn. *Journal of Educational psychology*, 1(3), 12-17
- Ocholla-Ayayo, M. (2014). Knowledge, attitude, and practices of pregnant women towards antenatal care in primary healthcare centers in Benghazi, Libya. *Journal of Egypt Public Health Association*, 89(3), 119-126.
- Park, K. (2015). *Park's textbooks of preventive and social medicine*. (21st ed.), Jabalpur, India, Banarsidas Bhanot.

- Spiegel, M. (1992). Synthesizing evaluation perspectives, practices and evidences, proceedings of the American Evaluation Association: 92 *Extension evaluation Topical interest group, Seattle WA, 27-37.*
- Swedo, E. (2012). *Stemming the tide: A technical and perceived quality of care and their associations with maternal health determines* (Unpublished MPH Thesis). Rolling School of Public Health of Emory University.
- USAID (2016). *United state Aid for international development responds to HIV/AIDS.*
- World Health Organization (2013). Revised 1990 Estimates of Maternal Mortality: A New Approach by WHO and UNICEF. Geneva: WHO and UNICEF. In Shiffman J and Okonofua F. E. The State of Political Priority for Safe Motherhood in Nigeria. *Biology Journal of Gynecology*, 114:127-133.
- World Health Organization (2017). The health young peoples. *Challenge of promising Geneva.*

## GENDER AND SCHOOL LOCATION AS MODERATORS OF ENTREPRENEURIAL ASPIRATIONS AND MATHEMATICS ACHIEVEMENT OF SENIOR SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE, NIGERIA`

<sup>1</sup>Benson C. Ezeanyi, <sup>2</sup>Zephrinus C. Njoku & <sup>3</sup>Marcellinus C. Anaeke  
Department of Science Education, National Open University of Nigeria  
manaekwe@noun.edu.ng

### Abstract

*This study moderated the effect of entrepreneurial aspirations and mathematics achievement on gender and school location among senior secondary school students in Anambra state. Correlation research design was used for the study. Three research questions and three hypotheses guided the study. 2000 SS3 students were drawn using multi stage sampling technique. Entrepreneurial Aspiration Scale (EAS) and Mathematics Achievement Test (MAT) were used as instruments for data collection. Three experts validated the instruments. The reliabilities of EAS and MAT were established using Cronbach Alpha and Kuder Richardson 20 yielding coefficient values of 0.68 and 0.80 respectively. The instruments were administered to the students and the data collated for analysis. The data were analysed using simple and multiple linear regressions. Findings of the study revealed among others that when students' aspiration for a particular entrepreneurship increases by 1 unit, the likelihood is that those who aspire for automobile services, electrical/electronic services, building technology and entertainment industry will attain statistically significant higher achievement in mathematics. There is a significant relationship between entrepreneurial aspirations, gender and achievement in mathematics  $F_{(2,1997)}=71.670$ ,  $P < 0.05$ . Based on the findings, it was concluded that gender and school location moderated entrepreneurial aspirations and mathematics achievement among secondary school students. School administrators should therefore ensure that rural students have enough mathematics teachers and should conduct entrepreneurship seminars and exhibitions to acquaint them with the knowledge needed for their future engagements.*

**Keywords:** Entrepreneurial aspirations, Mathematics achievement, Gender, School location

### Introduction

Functional issues which revolve around a viable education, especially at the primary and secondary school levels in Nigeria led to curriculum revision at that level in 1968, 1982 and 2005. The National Policy on Education (NPE), reviewed the scope of secondary school curriculum to integrate technical and vocational studies intended to empower the individual for self-employment in accordance with the national objective of 'producing a self-reliant nation and a land of equal and bright opportunities for all citizens (FRN, 2014). In a bid to ensure that young school leavers from Nigeria's education system acquire appropriate vocational, technical and entrepreneurial skills for economic empowerment and national development, different systems of education (6-5-4, 6-3-3-4 and at present 9-3-4) have been adopted at different times. In addition, global changes in science curriculum as a result of knowledge explosion and new wave in science and technological development demand for quality science and mathematics teaching. This view identifies with those clearly spelt out in the objectives of science and mathematics teaching, (FRN, 2014).

Therefore, there is an urgent need to overhaul our education system to minimize the problems of graduate unemployment by inculcating and developing the right type of

entrepreneurial skills in them. STEM education has a lot of problems in Nigeria which affects the skill development of its graduates (Igere, 2017; Karen and Philip, 2018; Anaekwe and Apata, 2019). These problems include: lack of adequate human and material resources, inadequate funding of science education, mismanagement, bribery and embezzlement of public funds, lack of good policy implementation guidelines, poor attitude to work due to irregular salary payment and poor motivation, administrative problems and hindrances to advancement in science education. In view of the above stated problems, Nigeria's education system should be restructured towards developing entrepreneurial skills in its recipients. This is because Nigerian graduates can no longer rely on the Nigerian labour market to provide them jobs. Unemployment remains one of the most critical problems facing Nigeria today. The Nigeria Bureau of Statistics (NBS, 2018) recently put the number of unemployed as at the third quarter of 2018 at 90.5million and the underemployed at 18million. From this unemployed population, the youths constitute about 38 percent. They have to invent an alternative source of employment which is self-employment, *vis avi* entrepreneurship.

An entrepreneur according to Uzoka (2015) is a person who organizes and manages a business, undertakes and assumes risk for the sake of profit. He tends to start ventures that build on specific skills they have already acquired either through formal education or in a certain occupation or industry. The entrepreneur is the chief executive or leader of a one-man business (Uyiagbe, 2017). Nnamani (2018) and Jimngang (2018) see the benefits of entrepreneurship to include development of business awareness, economic empowerment, management acumen, ability to bear risk and self-reliance among others. Considering these importance of entrepreneurship, it becomes imminent that the inculcation of entrepreneurial skills in our youths can be improved through mathematics education.

Mathematics education would undoubtedly provide an entrepreneur with the opportunity to engage in abstract thinking, which is necessary for the growth and development of entrepreneurship. Mathematics has the ability to improve an individual's reasoning abilities, which are essential for entrepreneurship. Furthermore, mastering mathematics provides the opportunity to accept what can withstand the test of logic and what is true and acceptable in real-life situations, which can help an entrepreneur flourish. This is because teaching mathematics necessitates accuracy and orderly presentation of outcomes, both of which are crucial elements for entrepreneurial success (Lyons & Beilock, 2012). Acquisition of mathematics abilities such as data analysis and test statistics may aid persons in learning how to discriminate between what is vital and what is not in order to make appropriate and critical selections in the face of numerous entrepreneurial development possibilities. Gender and school location are factors in determining the entrepreneurial aspirations of secondary school students,

Gender can be classified into masculine and feminine. It is defined by Bravo-Bauman (2012) as the social construction of male and female identity. Hyde, Lindbery, Linn, Ellis and Williams (2018) found that when it comes to mathematics achievement and interest, girls and boys are similarly capable. They reported that in children from grades two to eleven, there was no gender difference for mathematics achievement. They further added that while more boys than girls score higher in mathematics, gender gap has been closing over times. In fact, they reported that the gap is smaller in countries with greater gender equality. Owolabi and Etuk-iren (2014); Imoko (2018); Ezeanyi and Okigbo (2021) reveal that male students are academically superior to their female counterparts in mathematics achievement. Okigbo and Ezeanyi (2020) reported no significant difference in mathematics achievement based on gender. A few studies have however explored, whether gender differences in mathematics is mediated by

entrepreneurial aspirations of the students. Female students may aspire more towards hair dressing, fashion design while male students may aspire for upholstery making and building constructions. The entrepreneur who is a fashion designer requires critical mathematics knowledge much as the building constructor and upholstery maker. A hair dresser on the other hand may not need much mathematics like the upholstery maker. Thus, there may be gender-based entrepreneurial aspiration which invariably could affect achievement in mathematics.

School location refers to the particular place, in relation to other areas in the physical environment (rural or urban), where the school is sited (Moore, 2019). In Nigeria, rural life is uniform, homogenous and less complex than that of urban centres, with cultural diversity, which often is suspected to affect students' academic achievement. This is because urban centres are better favoured with respect to distribution of social amenities such as pipe borne water, electricity, healthcare facilities while the rural areas are less favoured. This is also true in the distribution of educational facilities and teachers. These prevailing conditions imply that learning opportunities in Nigerian schools differ from school to school. It would appear therefore that students in Nigerian urban schools have more educational opportunities than their counterparts in rural schools. While some studies (Ayanwoye, 2016; Oginni, 2013; Moore, 2019) have shown positive influence, others (Adeneye, 2014 and Ella, 2019) have shown negative influence of school location on the students' learning outcome. Students' entrepreneurial aspirations may also vary based on school location.

Students in the rural areas tend to have informally developed skills which they always explore as they grow and would like to use them as entrepreneurs. They can aspire to be seeders for farmers, transporters of farm produce to cities, producers of fish nets and baskets, fish farmers, reapers of seedlings and grains and makers of earthen vessels. It is different from what is obtainable in the urban areas where students' entrepreneurial aspirations may be directed to paint producing, printer of fancy wall-papers, upholstery makers, social media software designers, printing press business, photo-laboratory owners, automobile mechanics among others. Thus, differences across entrepreneurial aspirations which have the potency to affect mathematics achievement may exist due to school location.

### **Statement of the Problem**

Unemployment remains one of the most critical problems facing Nigeria today. The Nigeria Bureau of Statistics (NBS, 2018) recently put the number of unemployed as at the third quarter of 2018 at 90.5million and the underemployed at 18million. From this unemployed population, the youths constitute about 38 percent. They have to invent an alternative source of employment which is self-employment and this requires some knowledge of mathematics, entrepreneurial aspirations and skills. But they cannot be successful in any area of entrepreneurial endeavour without requisite skills and knowledge. Mathematics education is expected to equip students with relevant skills that will enable them to be self-employable and self-reliant on leaving school, especially helping them in the development of entrepreneurial aspirations for different fields of life. Students of all gender and locations are not left out in the menace of unemployment and therefore should be helped out of poverty. Understanding the relationship between entrepreneurial aspirations and mathematics achievement and how gender as well as school location can moderate them is the crux of this research.

### **Purpose of the Study**

The purpose of this study is to determine how gender and school location moderate the relationship between entrepreneurial aspirations and mathematics achievement among senior secondary school three (SS3) students in Anambra State. The specific objectives are as follows:

1. Find out the relationship between the different entrepreneurial aspirations (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students' achievement in mathematics.
2. Determine the relationship among entrepreneurial aspirations, gender and students' achievement in mathematics.
3. Determine the relationship among entrepreneurial aspirations, school location and students' achievement in mathematics.

### **Research Questions**

The study was guided by the following research questions:

1. What is the relationship between the different entrepreneurial aspirations (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students' achievement in mathematics?
2. What is the relationship among entrepreneurial aspirations, gender and students' achievement in mathematics?
3. What is the relationship among entrepreneurial aspirations, school location and students' achievement in mathematics?

### **Hypotheses**

The following null hypotheses were tested at 0.05 alpha levels.

1. There is no significant relationship between the different entrepreneurial aspirations (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students' achievement in mathematics.
2. There is no significant relationship among entrepreneurial aspirations, gender and students' achievement in mathematics.
3. There is no significant relationship among entrepreneurial aspirations, school location and students' achievement in mathematics.

### **Methodology**

This study adopted the Correlation research design. A correlation research design according to Nworgu (2015) is a family of research designs used to investigate relationship between variables without the researcher manipulating any of them. Such a design is useful for the study of causes where experimental assignment or manipulation is infeasible and unethical. The sample size used for the study was 2000 SS3 students in Anambra state, which were obtained using multi-stage sampling procedure. The stage by stage was as follows: first, four schools out of the six education zones in the state were selected through simple random sampling technique. Secondly, in each of the selected education zones, purposive sampling technique was used to select five co education schools, this was to take care of the gender variable in the study and that the schools are located in urban and rural areas. Again, purposive sampling ensured the selection of private and public schools to take care of school ownership. In each of the five schools selected, 20 students were selected using simple random sampling technique.

Entrepreneurial Aspirations Scale (EAS) and Mathematics Achievement Test (MAT) were used as instruments for data collection. Entrepreneurial Aspirations Scale (EAS) is a scale

developed by the researcher to determine the students’ entrepreneurial aspirations. The scale was developed to generate information on students’ entrepreneurial aspirations. Thirty-three entrepreneurial aspirations identified by the researcher were clustered into six groups. These groups are Food services, Automobile services, Electrical/electronics, Building technology, Fashion/Beauty services and Entertainment industry. Each of the groups has five different entrepreneurial aspirations, making a total of thirty. Mathematics Achievement Test (MAT) was a test adapted and modified from WAEC past questions for different years, to evaluate students’ achievement in mathematics. MAT is a 50 multiple choice objective questions test covering five different themes in mathematics. The instruments were validated by three experts in science education.

The reliability of EAS was established using Cronbach’s Alpha yielding a coefficient of 0.68 while that of MAT was established using Kuder-Richardson formula 20 (KR-20) yielding a reliability coefficient of 0.80. These were considered high enough to be used for this study. The instruments were administered to the students through the help of four research assistants. The research assistants were trained on data collection procedure and data collation. When administering the instruments, students were assigned serial numbers which were written on their copy of instrument, to ensure that the scores of EAS and MAT matched for each student. They scored the instruments and collated the data for analysis.

Data generated from this study were analysed using simple linear and multiple regressions.

**Results**

**Research question one**

What is the relationship between the different entrepreneurial aspirations (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students’ achievement in mathematics?

**Table 1: Relative contributory relationship between different entrepreneurial aspirations of senior secondary school students to mathematics achievement**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	62.227	.381		163.167	.000
1 Food Services	.003	.907	.001	.003	.998
Automobile Services	2.355	.910	.061	2.588	.010
Electrical/Electronic	2.566	.745	.083	3.444	.001
Building Technology	1.697	.719	.057	2.361	.018
Entertainment Industry	1.574	.746	.051	2.110	.035
Fashion/Beauty Services	.160	.927	.004	.172	

a. Dependent Variable: Mathematics Achievement

Table 1 shows the standardized beta coefficient which indicates correlation between variables. The unstandarsdized beta coefficient shows the predictive powers of each entrepreneurial aspiration which indicates their relative contribution to achievement in mathematics. Table 1 shows that aspiration for food services has a positive relationship (R = 0.001) with students’ achievement in mathematics, automobile services has a positive relationship (R = 0.061) with achievement in Mathematics, electrical/electronic has a positive relationship (R = 0.083) with achievement, building technology has a positive relationship (R = 0.057) with achievement while aspiration for entertainment industry has a positive relationship (R = 0.051) with achievement in

mathematics and aspiration for fashion/beauty services has a positive relationship ( $R = 0.004$ ) with achievement in mathematics. Table 1 also reveals that with a unit increase in the entrepreneurial aspiration for food services, achievement in mathematics increases by 0.003; with a unit increase in the aspiration for automobile services, achievement in mathematics increases by 2.355; and with a unit increase in the aspiration for electrical/electronics, achievement in mathematics increases by 2.566. Mathematics achievement increases by 1.697 whenever students' entrepreneurial aspiration for building technology increases by 1 unit and by 1.574 when aspiration for entertainment industry increases by 1 unit where mathematics achievement increases by 0.160 when aspiration for fashion/beauty services increases by 1 unit. The order of relative contribution to increment in mathematics achievement from the highest to lowest by students' entrepreneurial aspirations therefore is; electrical/electronic (2.566), followed by automobile services (2.355), building services (1.697), entertainment industry (1.574), fashion/beauty services (0.160) and food services (0.003).

### Research question Two

What is the relationship among entrepreneurial aspirations, gender and students' achievement in Mathematics?

**Table 2: Relationship among entrepreneurial aspirations, gender and students' achievement in mathematics**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Unstandardized coefficients (b)	Std. Error	Decision
Constant				56.666		
Entrepreneurial Aspiration	.259 <sup>a</sup>	.067	.066	.556	10.050	Positive relationship
Gender				4.962		

a. Predictors: (Constant), Gender, Entrepreneurial Aspiration

Table 2 shows that a positive relationship ( $R = 0.259$ ) exists between students' entrepreneurial aspirations, gender and their achievement in mathematics. The R-Square value of 0.067 indicates that 6.7% of the variance in mathematics scores is explained by students' entrepreneurial aspirations and gender.

### Research Question Three

What is the relationship among entrepreneurial aspirations, school location and students' achievement in mathematics?

**Table 3: Relationship among entrepreneurial aspirations, school location and students' achievement in Mathematics**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Unstandardized coefficients (b)	Std. Error	Decision
Constant				57.821		
Entrepreneurial Aspiration	.245 <sup>a</sup>	.060	.059	.534	10.088	Positive relationship
School location				4.643		

a. Predictors: (Constant), School Location, Entrepreneurial Aspiration

Table 3 shows that a positive relationship ( $R = 0.245$ ) exists between students' entrepreneurial aspirations, school location and their achievement in mathematics. The Adjusted R-Square value of 0.059 indicates that 5.9% of the variance in mathematics scores is explained by students' entrepreneurial aspirations and school location.

## Hypotheses

**H01:** There is no significant relationship between the different entrepreneurial aspirations (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students' achievement in Mathematics.

### ANOVA on Significance of relationship between students' entrepreneurial aspirations and achievement in Mathematics

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3985.070	6	664.178	6.239	.000 <sup>b</sup>
1 Residual	212180.689	1993	106.463		
Total	216165.759	1999			

a. Dependent Variable: Achievement in Mathematics

b. Predictors: (Constant), Fashion/Beauty Services, Food Services, Automobile Services, Building Technology, Electrical/Electronic

Table 4 shows that the relationship between entrepreneurial aspirations and achievement in mathematics is significant  $F(6, 1993) = 6.239, P(0.000) < 0.05$ . The null hypothesis was therefore rejected implying that there is a significant relationship between the different entrepreneurial aspiration (food services, automobile services, electrical/electronic services, building technology, entertainment industry, fashion/beauty services) and students' achievement in mathematics. Since the joint (overall) relationship between the different entrepreneurial aspirations and achievement in mathematics is significant, we examine the relationship between each entrepreneurial aspiration and achievement in mathematics as contained in Table 4.

Table 4 shows that the predictive correlation between entrepreneurial aspirations for food services and achievement in mathematics is not significant,  $t = 0.003, P > 0.05$ ; and also not significant for fashion/beauty services,  $t = 0.172, P > 0.05$ . However, the predictive correlation between entrepreneurial aspiration for electrical/electronic services and achievement in mathematics is significant,  $t = 3.444, P < 0.05$ ; and also significant for building technology,  $t = 2.361, P < 0.05$ , entertainment industry,  $t = 2.110, P < 0.05$  and automobile services,  $t = 2.588, P < 0.05$ .

Since the joint and individual association between the different entrepreneurial aspirations and achievement in mathematics is significant, the regression model ( $Y = a + bX_1 + cX_2 + dX_3 + eX_4 + fX_5$ ) for the prediction of achievement score in mathematics as can be derived from Table 4, where  $Y$  = achievement in mathematics,  $a$  (constant) = 62.227 and  $b$  value = 0.003,  $c$  value = 2.355,  $d$  value = 2.566,  $e$  value = 1.697,  $f$  value = 1.574 and  $g$  value = 0.160 is:

$$AM = 57.584 + (0.003) EAFS + (2.355) EAAS + (2.566) EAEE + (1.697) EABT + (1.574) EAEI + (0.160) EAFB$$

Where,  $AM$  = achievement in mathematics and  $EAFS$  = entrepreneurial aspiration for food services,  $EAAS$  = entrepreneurial aspiration for automobile services,  $EAEE$  = entrepreneurial aspiration for electrical/electronic services,  $EABT$  = entrepreneurial aspiration for building technology,  $EAEI$  = entrepreneurial aspiration for entertainment industry,  $EAFBS$  = entrepreneurial aspiration for fashion/beauty services.

**H02:** There is no significant relationship among entrepreneurial aspirations, gender and students' achievement in Mathematics.

**Table 5: Significance of relationship among students' entrepreneurial aspirations, gender and achievement in Mathematics**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	14476.787	2	7238.393	71.670	.000 <sup>b</sup>
Residual	201688.973	1997	100.996		
Total	216165.759	1999			

a. Dependent Variable: Achievement

b. Predictors: (Constant), Entrepreneurial Aspiration, Gender

Table 5 shows that the relationship between entrepreneurial aspiration and achievement in mathematics is significant  $F(2, 1997) = 71.670$ ,  $P(0.000) < 0.05$ . The null hypothesis was therefore rejected implying that there is a significant relationship between entrepreneurial aspiration, gender and students' achievement in mathematics.

**H03:** There is no significant relationship among entrepreneurial aspirations, location and students' achievement in Mathematics.

**Table 6: Significance of relationship among students' entrepreneurial aspirations, school location and achievement in Mathematics**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	12937.746	2	6468.873	63.566	.000 <sup>b</sup>
Residual	203228.014	1997	101.767		
Total	216165.759	1999			

a. Dependent Variable: Achievement

b. Predictors: (Constant), Entrepreneurial Aspiration, School location

Table 6 shows that the relationship between entrepreneurial aspiration and achievement in mathematics is significant  $F(2, 1999) = 63.566$ ,  $P(0.000) < 0.05$ . The null hypothesis was therefore rejected implying that there is a significant relationship between entrepreneurial aspiration, school location and students' achievement in mathematics.

### Discussion of findings

The study revealed that senior secondary school students in Anambra state have significantly higher achievement score in mathematics in general than those having other entrepreneurial aspirations. The study further revealed that gender (male and female) significantly moderated the relationship between senior secondary school students' entrepreneurial aspirations and achievement in mathematics. Male students with the entrepreneurial aspiration for food services and electrical/electronic had low mathematics achievement than their female counterparts whereas male students aspiring for automobile services, building technology, entertainment industry and fashion/beauty services had higher achievement than the females.

The terrains of investment in automobile services, building technology, entertainment industry and fashion/beauty services have been dominated by males over a fairly long period of time. In most cases, they would want to grow in their investment and would often make projections of the business growth while working to achieve them in due time. Such projections are otherwise known as predictions, probabilities and require great deal of mathematics. Male students with the entrepreneurial aspirations for food services, electrical and electronic, building technology and entertainment industry had higher mathematics interest scores than their female counterparts whereas female students aspiring for automobile services and fashion/beauty

services had higher interest scores than the males. Thus, such students' interest in mathematics is a strong influencing factor that motivates them to study harder as to attain higher achievement scores in the subject than the female counterparts.

The findings of the study further revealed that school location is a significant moderator of the relationship between senior secondary school students' entrepreneurial aspirations, achievement in mathematics. Urban students with the entrepreneurial aspiration for food services, automobile, building technology, entertainment industry and fashion/beauty services would attain significantly higher mathematics achievement than the rural students whereas rural students aspiring for electrical/electronic services would attain a significantly higher achievement than the urban students. In urban settings, students are exposed to a densely populated area which requires enough buildings and a means of transportation to convey the teeming mass to their various destinations.

Also, there is a likelihood that the demand for food is much in the urban than the rural areas as the rural areas produce some quantity of food and has a lower population to feed than in the urban areas. The students in the urban areas therefore see experts handling these entrepreneurial ventures and may not attach any further difficulty to engaging in such services which results in little or no change in the endeavour to learn mathematics more. This is not the case for the rural students who aspire for electrical/electronic services. They have little or no exposure on the service and some rural areas exist with little or no electrical infrastructure and therefore little or no electronics which require electricity. This is enough to drive further seriousness in mathematics education.

Again, urban students with the entrepreneurial aspiration for food and automobile services would have higher interest in mathematics than the rural students whereas rural students aspiring for electrical/electronic services, building technology, entertainment industry and fashion/beauty services had higher interest in mathematics than the urban students. The possible explanation for the observation could be that rural students are not well exposed to electrical/electronic services, building technology, fashion and beauty services and entertainment industry. Thus, by associating what they see in modern cities in urban areas with what obtains in the rural areas, they may associate as well some level of complexity to the practices or venturing into such business; the same complexity easily associated with mathematics learning. This may on the long run, influence them to have more interest in mathematics as they aspire for these entrepreneurship areas unlike students in the urban areas.

## Conclusion

It can be concluded from the findings of the study that gender and school location are significant moderators of senior secondary school entrepreneurial aspirations and achievement in mathematics. There exists a statistically significant positive relationship among senior secondary school students' entrepreneurial aspirations, gender and their achievement in mathematics.

## Recommendations

The following recommendations are made based on the findings of the study.

1. Government should organize workshops for mathematics on teaching skills that will help foster gender balance in learning.
2. School administrators should ensure that rural students have enough mathematics teachers and should conduct entrepreneurship seminars and exhibitions to acquaint them with the knowledge necessary to guide them into such ventures. Such seminars would expose them to

the place of mathematics in every aspect of human endeavour while arousing and sustaining their interest.

## References

- Adeneye, A.A. (2014). Effect of school location on senior secondary school students' academic achievement in Mathematics. *Journal of Educational Measurement*, 2(2), 289-296
- Anaekwe, M.C. & Apata, F.S. (2019). Infrastructural Provision as a Critical Element of Innovation in Science, Technology, Engineering and Mathematics (STEM) Education. *A paper presented at 60<sup>th</sup> Annual Conference of Science Teachers Association of Nigeria held at Kano, 19-24 August, 2019*
- Ayanwoye, M.B. (2016). Effect of school location and senior secondary school students' achievement in mathematics. *Journal of Science Education, University of Ibadan*, 18(3), 315-330
- Bravo-Bawuman, J.A. (2012). *Factors influencing career choice among male and female students*. Retrieved from [www.onlinecollege.org](http://www.onlinecollege.org)
- Ella, Y.E. (2019). Relationship Between School Location and Senior Secondary School Students Academic Performance in Mathematics in Ogoja Local Government Area. *Journal mathematics education*, 1(3), 18-28
- Ezeanyi, B.C. & Okigbo, E.C. (2021). Common Process Errors in Geometry committed by students from private and public secondary schools in Anambra state. *The International Journal of Humanities and Social Studies (TIJHSS)*. 9(7), 249-255
- Federal Republic of Nigeria (2014). *National Policy on Education*. Lagos: NERDC publications.
- Hyde, E.G., Lindbergy, M.O., Linn, C.M., Ellis, P.I., & Williams, N.B. (2018). Effect of Gender on College Students Achievement and Interest in High level Mathematics in Benin. *Journal of Social Science Studies (JSSS)*, 2(1), 001-018
- Igere, A. M. (2017). Career choice and its influence on academic performance of library and information science students in a Nigerian University *Journal of Information and Knowledge Management*, 8(2), 90-98.
- Imoko, T.S. (2018). Gender differences in mathematics achievement and retention by using Problem Based learning style. *Journal of Science Education*, 4(1), 101-115
- Jimngang, G.Y. (2018). *The culture of entrepreneurship*. Douala: Treasure Books Company Limited
- Karen, A.B. & Phillip., J. (2018). A study of the correlation between STEM career knowledge, mathematics self-efficacy, career interests, and career activities on the likelihood of pursuing a STEM career among middle school students. *International Journal of STEM Education*, 5 (22), 1-15. <https://doi.org/10.1186/s40594-018-0118-3>.
- Lyons, N.& Beilock, D (2012). The role of aspirations in the educational and occupational choices of secondary school students, NCVER, Adelaide. Briefing Paper, 29. Retrieved from <https://www.ncver.edu.au/research-and-statistics/publications/all-publications/the-role-of-aspirations-in-the-educational-and-occupational-choices-of-young-people>
- Moore, B.A. (2019). School location as a predictor of secondary school students Achievement in Algebra *Journal Educational perspectives*, 25(3), 175-185
- Nigeria Bureau of Statistics (N B S) 2018
- Nnamani, A.B. (2018). Effect of Gender and Teaching Methods on Mathematics process skills Acquisition among senior secondary school students. *International Journal of Educational Research*, 1(1), 141-147.

- Nworgu, B. G. (2015). *Educational research: Basic issues and methodology*. Ibadan: wisdom Publisher Limited
- Oginni, C.N. (2013). School factor as a predictor of senior secondary school students' achievement in mathematics. *Journal of Science Teachers Association of Nigeria*, 3(4), 67-74
- Okigbo, E.C., and Ezeanyi, B.C. (2020). Game-based learning strategy as a measure of improving senior secondary school students' academic achievement in geometry in Anambra state. In E.C. Okigbo, N.R. Nnorom & E. Onwukwe (Eds), *Innovations in science, technology and mathematics (STM) education in Nigeria: classroom practices: Festschrift in honour of Profs E.O. Akuezuilo & S.O.C. Okeke*. Science Education Department, Nnamdi Azikiwe University, Awka, Nigeria
- Owolabi, J. & Etuk-iren, O.A. (2014). Effect of Gender, Age, and Mathematics Anxiety on College Students Achievement in Algebra. *American Journal of Educational Research*, 2(7), 474- 486
- Uyaigbe, E.C. (2017). Entrepreneurial cognition, entrepreneurial orientation and firm capability in the creative industries. *African Journal of Management*, 23(3), 415–432.
- Uzoka, F.S. (2015). Transforming Nigerian economy through integrative entrepreneurial curricular offerings in Nigerian higher education. *Research on Humanities and Social Sciences*, 2(8),120-129.

## SEXUAL FACTORS AND SCHOOL DROP-OUT AMONG SECONDARY SCHOOL GIRLS IN OYO CENTRAL SENATORIAL DISTRICT OF OYO STATE, NIGERIA

<sup>1</sup>Arogundade, Oladele, <sup>2</sup>Olatunde Funmilayo, <sup>3</sup>Sule Fatai O,  
& <sup>4</sup>Aribamikan Collins

Emmanuel Alayande University of Education, Oyo

<sup>1</sup>deleedifice@gmail.com, 08069018119

<sup>2</sup>fumsy51@yahoo.com, 08032903772

<sup>3</sup>fataiolatunji8@gmail.com 08036879299.

<sup>4</sup>Bamidele Olumilua University of Education, Science and Technology, Ikere Ekiti

aribamikan.collins@bouesti.edu.ng 0810339770

### Abstract

*The study determined the sexual behaviours and school drop-out among teenage girls in Oyo Central Senatorial District. The descriptive survey research design was adopted for the study. A total of 333 respondents comprising 300 girls and 33 secondary school principals comprised the sample for the study. The 300 school drop-outs were drawn from 11 Local Government area of the Districts using snowballing technique while schools were selected using stratification and intact group method was used to select the principals. The instrument used were a self structured on related sexual factors predicting drop-out and a 10-year retrospective record (2012-2022) of girls' suspension, withdrawer and expulsion from school as a result of sex related issue. Data obtained were analysed using simple percentage, chi-square and t-test. The results showed that over 85 % out of the 300 respondents exhibited such sexual related behaviour as multiple partnership, unprotected and indiscriminate sex casual relationship with male while less than 20% engaged in sex trade. Teen pregnancy ( $\chi^2=85.67$ ;  $P<0.05$ ) were found significant factors in school drop-out among teenage girls among others. There is significant difference between the rate of school drop-out for sexually related reasons among girls from rural and urban schools ( $t=20.25$ ;  $P < 0.05$ ) and girls from private and public school ( $t=5.45$   $P <0.05$  It was concluded that the rate of school drop-out for sex related reasons is higher in rural and public schools than urban and private schools. Family life and sex education in schools, employment of guidance and counsellors and school organised seminars and lectures were recommended as a means of modifying sexual behaviours of girls and eventually curbing sex –related activities that can result in non-completion of schools.*

**Keywords:** Sexual Factors, Dropout, School Girls, Secondary school

### Introduction

The social- cultural context in which adolescents in Nigeria find themselves has changed considerably in the past few decades. Adolescence is a crucial and transitional stage in life, from childhood to adulthood that is characterized by adventures, curiosity which often associated with heightened risk-taking, including premarital sex. (Adedigba, 2017). The smaller and slower-paced communities of the past provided clear guideline for young people in many aspects of their socialization including sex. In some ethnic groups, adolescence generally commenced with circumcision and other cultural rites that marked emergence from childhood to adulthood. Such cultural rights are required to raise a girl properly for and prepare her for adulthood and marriage.

However, Ayodele (2011) reported that traditions were by no means universal, as some ethnic societies were highly restrictive about sexual matters concerning their female children. For

example, the traditional Yoruba tribe expected a full proof of female virginity at marriage, demonstrated by a certain amount of blood proof of female virginity at marriage, demonstrated by a certain amount of blood on the consummation, otherwise, the bride family was put to public shame, whereas sexual activity for boys is tolerated to an extent. In confirmation, Afolabi (2021) revealed that a bride who was found virgo-intacta was the cause of much rejoicing and self-congratulation to her parents and relatives.

Such traditional restrictions placed on sex activities of adolescents and especially girls had marked influence on the rate and extent to which they engaged in sexual explorations. In support, Afolabi (2011) revealed that in the South-Western culture of Nigeria, sex before now was regarded as a sacred and limited only to adult males and females within marriage. Today, mere observations have shown that adolescents have become suddenly – sexually active to the point of promiscuity. The author observed that today's situation shows a sharp contrast to the traditional Nigeria societal context in which boys and girls that lost their virginity before marriage. In the same vein, Agbodo (2018) said that today the college years are years of sexual experimentation in which case, World Health Organization (2020) found that 67% of boys and 43% of girls aged between 14 and 19 years were sexually active. In their contribution, Macphial and Campbell (2011) said that young women have sexual relationship in exchange for favours, gifts, and cash. According to the authors, when adolescent receive money /gift from partners, the power dynamic implicitly in such transaction leaves no room to negotiate condom use or refuse sex thus increasing the girls' vulnerability to unwanted pregnancy or STI.

Aselon (2020) reported that adolescent and young adult in particular have been found to be the group of the highest risk of negative health consequences related to sexual risk-taking behavior, including unintended sexuality and sex information to the adventurous adolescents. He added that students who engaged in teenage relationships and sex also suffer socio-economic hardship especially when pregnant or expelled from school. Chigona and Cheety (2017) reported that when students are expelled or pregnant, such students are thrown into socio-economic hardship as their parents who sponsored their socio-economic and education needs may look the other way disappointed and anger, thus leaving them to suffer economically. Many reasons have been extended for early sexual exploration by adolescents. According to Ayodele (2011), high incidence of premarital sex is attributed to increasing moral attitude and slackening of traditional requirement for premarital chastity. The author added that early sexual exploration is attributed to unfortunate environmental influences such as poverty, ignorance, poor educational facilities depressing homes and emotional problems, which drive adolescents into compulsive sexual behavior based on unconscious needs to be accepted and loved. UNICEF, (2007) reported that although, other reasons including lack of finance could prompt the school girl to drop-out of school but sex-related issue is the troubling factor. Anene, Ojinaka and Nide, (2017) added that girls who dropped out of school as a result of pregnancy are less likely to continue schooling for fear of stigmatization, loss of interest in schooling and power of distraction that teen pregnancy has on academic pursuits.

Many reasons have been extended for early sexual exploration by adolescents. According to Moronkola and Adio –Moses (2013), high incidence of premarital sex is attributed to increasing moral attitude and slackening of traditional requirements for premarital chastity. Ayodele (2011) in her review, also attributed early sexual exploration to unfortunate environmental influences such as poverty, ignorance, poor educational facilities, depressing homes and emotional problems, which drives adolescent into compulsive sexual behaviour based on unconscious needs to be accepted and loved.

This researcher has observed that in Nigeria, dissemination of sex related information, which is supposed to be the main weapon for eradicating sexual and contraceptive ignorance and promoting reproductive health had not been met with societal favour. Many parents shy away from

discussing sex-related issues with their children, sexuality education rarely reflects as a core subject in the general school curriculum while many societies have vehemently kicked against the teaching of sex education in schools (Nwakwo,2017). These situations have left the teenagers to acquire sex-related information (which are oftentimes inadequate) from ill sources such as peers, pornographic pictures and literatures and subsequently, their sex behaviour are dictated by such incorrect information with resultant negative effects on their health and academic performance. No wonder why many teenage girls die of abortion, while other becomes academically backward and eventually impromptu school leaving as a result of teenage pregnancies.

The researcher observed that it is a common thing to see many un-kept teenage girls who are either pregnant or nursing babies and who are supposed to be in schools) in open markets, motor packs and along the streets, hawking, running other errands for elders, becoming cottage traders, housemaid and engage in filthy job that has little or no financial security and future academic pursuit is not encourage. Since mere observation are subjective and are not based on facts, this researcher felt that there is need to carry out a more scientific research to examine the sexual factors predicting school drop-out among girls in Oyo State.

Objective of the study

The specific objective of the study is to:

- a. Identify the sexual behavior (e.g multiple partnership, unprotected sex, casual relationship and teenage sex) of girls in Oyo Central Senatorial District of Oyo State.
- b. Identify sex-related factors (e.g) teenage pregnancy, sexual coercion, sexually transmitted infection, abortion and teenage motherhood) as underlying school-drop out among girls.

### Research Hypotheses

- (i) Sex-related issue (e.g) teen pregnancy, sexual coercion, abortion, contraction of ST1 and teenage motherhood) are not significant factors in school drop-out for school girls.
- (ii) There is no significant difference in the rate of school drop-out for sexual – related reasons among different categories of girls e.g girls from rural and urban public and private schools.

### Method

A total of 333 respondents comprising of 300 dropout girls and 33 secondary school principals from Oyo Central Senatorial District of Oyo State were sampled using multi-stage sampling technique. Stage one involved the intact sampling of all the 11 local government areas in the district. Stage two involved a systematic sampling of 3 schools from each of the 11 LGAs totaling 33 schools which is approximately 24% of the 137 secondary schools existing in the district as at the time of this study. Stage three was the sampling of 333 respondents, who were in two categories

The first categories of respondents were 300 school dropout selected using snowballing technique.

Snowballing is a non-probabilistic sampling that is appropriate to use research when members of a population one difficult to locate.

Snowballing requires that the researcher locates one or more respondent and asks them to provide information needed to locate other persons in their category that they know. Research assistants who also worked in their Local Government Area and neighboring ones followed the same procedures.

### Results

#### Research Question One

What sexual behaviour do girls in Oyo Central Senatorial District of Oyo State exhibits?

**Table 1: Percentage Distribution of Responses on Sexual Behaviors of Girls in Oyo Central Senatorial District.**

Behaviors	Responses (%) N = 300						Grand Total
	S.A (%)	A (%)	TOTAL SA+A	D (%)	S D (%)	TOTAL D+SD (%)	
a Having more than one partners(multiple partners)	125 (41.7)	131 (43.7)	256 (85.4)	22 (7.3)	22 (7.3)	44 (14.6)	300 (100.0)
b Don't use condom (Unprotected sex)	128 (42.7)	166 (55.3)	294 (98.4)	4 (1.3)	2 (0.70)	6 (2.0)	300 (100.0)
C Having sex with anybody (Indiscriminate sex)	102 (34.0)	122 (40.7)	222 (74.7)	60 (20.0)	18 (5.30)	78 (25.3)	300 (100.0)
D Having casual relationship with men	105 (35.0)	143 (47.7)	248 (82.7)	33 (11.0)	19 (6.3)	52 (17.3)	300 (100.0)
E Engage in sex trade (prostitution)	18 (6.0)	42 (14.0)	60 (20.0)	102 (34.0)	138 (46.0)	240 (80.0)	300 (100.0)

Table 1 data show that over 85% out of the 300 respondent agreed that they have more than one sexual partner at a time; do not use condom, engaged in indiscriminate sex and that they have causal relationship with men, while less than 20% respondents disagreed however, majority; 240(80%) of the 300 respondents disagreed that they engaged in sex trade while only 60 (20%) agreed.

### Research Question 2

What are the factors affecting sexual behaviors of girls in Oyo central senatorial district?

**Table 2: below presents the casual factors affecting sexual behaviors of girls' in Oyo senatorial district**

Casual factors	Responses % N= 300		
	Frequency	Patent	Rank
Poverty	103	34.0	1 <sup>st</sup>
Greed / lack of Contentment	28	9.0	5 <sup>th</sup>
Peer pressure	36	12.0	4 <sup>th</sup>
Parental pressure	16	5.0	6 <sup>th</sup>
Ignorance of effects	40	13.0	3 <sup>rd</sup>
Religion	1	0.04	9 <sup>th</sup>
Culture	3	0.10	8 <sup>th</sup>
Curiosity	14	4.7	7 <sup>th</sup>
Mass media / video / computer	59	19.7	2 <sup>nd</sup>
Total	30	100.0	

Table 2 data show that poverty: 103 (34.0 %), mass media: 59 (19.7%), and ignorance of effect of unwanted pregnancy: 40 (13.0 %) ranked first, second and third respectively as factors

affecting sexual behaviors of girls in Oyo Senatorial District, where as culture: 3 (0.1%) and religion: 1(0.04%) ranked eight and nine respectively.

**Table 3: Percentage Distribution of Responses on sexual factors underlying school Drop – out among girls in Oyo senatorial District.**

		Responses (%) N=300						
Sexual factors	S A (%)	A (%)	Total SA+A (%)	D (%)	S D (%)	Total D+S (%)	Grand Total	
a. Teenage pregnancy	96 (32.0)	130 (43.3)	226 (75.3)	43 (14.3)	31 (13.4)	74 (24.7)	300 (100.0)	
B Sexual coercion or harassment by teachers/co-students	33 (11.0)	68 (22.7)	101 (33.7)	119 (39.7)	80 (26.6)	119 (66.2)	300 (100.0)	
c Abortion	92	121	213	66	21	87	300	
d Death resulting from abortion	95 (31.7)	122 (40.6)	217 (72.3)	53 (17.7)	30 (10.0)	83 (27.7)	300 (100.0)	
e Teen motherhood	95 (31.7)	122 (40.6)	217 (72.3)	50 (16.7)	33 (11.0)	83 (27.7)	300 (100.0)	
f Sexual transmitted Infections/other Chronic diseases e.g. HIV/AIDS.	79 (26.3)	90 (30.0)	169 (56.3)	65 (21.7)	66 (22.0)	131 (43.7)	300 (100.0)	

Data on table 3 indicates that over 70% out of the 300 respondents in this study agreed that teenage pregnancy, abortion, teen motherhood, and death resulting from abortion are major sexual factors causing girls to drop out of schools, while less than 30% respondents disagree. However majority: 199 (66.3%) of the 300 respondents disagree. However majority: 199 (66.3%) of the 300 respondents disagreed that sexual coercion or harassment could cause girls to drop out of schools, while 101 (33.7%) respondents agreed.

**Hypothesis Two**

There is no significant difference in the rate of school drop-out for sexual factors reasons among different categories of girls (e.g. (a) girls from rural and urban schools.

To test hypothesis two(a), the ratios of girls that dropped-out of the 11 rural schools and 22 urban schools were used, the t - test summary of the result is presented below.

**Table 5: t-test Difference in the rates of drop-out between girls in rural and urban-school,**

Schools	N	SD	DF	Tcalc	T.tab	P
Rural	11	1.70	0.65			
Urban	22	1.07	0.21	31	20.2	51.70 <0.05(Sig)

From the above table, the mean rates of school drop-out of girls from rural and urban schools are 1.70 and 1.07 while their standard deviation are 0.65 and 0.21 respectively. The T – Test analysis calculated on these values yielded a t-ratio of 20.25, which is significant at five percent level (t=20.25, df=31, p<0.05). This leads to the rejection of null hypothesis, which implies that there is a significant difference in the rate of drop-out between girls from rural and urban schools.

**Hypotheses Testing**

Hypotheses are: Sexual factors e. g (a) teen pregnancy, (b) sexual coercion, (c) contraction of STI (d) abortion (e) teenage motherhood and (i) death due to abortion) is not a significant factor in school drop – out among teen girls

To test this hypothesis, data on table 3 was used.

**Table 4: Chi – square Table on Sexual Factors Predicting School Drop – out among girls,**

Variable	N	Df	X <sup>2</sup> Calc	X <sup>2</sup> Tab.	P – value	Decision
A Ten pregnancy		3	85.67*			Significant
B Sexual Coercion and Harassment		3	50.31*			Significant
C STI/other Chronic diseases	300	3	5.62	7.815	>0.05	Not significant
D Abortion		3	72.02*			Significant
E Death resulting from abortion		3	68.23*			Significant
F Teen motherhood		3	66.63*			Significant

Note \* means significant at 5% level.

Table 4 indicates that when item – by item responses on the sexual factors causing school drop – out among girls were subjected to X<sup>2</sup> – test, results indicated that the calculated X<sup>2</sup> value for variable A (85.67); B(50.31); D(72.02); E(68.23) and F (66.63) were greater than the tabulated X<sup>2</sup> value of 7.815, df : 3 at 0.05 level of significance whereas the calculated X<sup>2</sup>value for variable c(5.62) was less than tabulated X<sup>2</sup>value. Therefore, hypothesis 1a, b, d, e and f, which state that teen pregnancy sexual coercion and harassment abortion, death resulting from abortion and teen motherhood are not predictors of school drop – out among girls were rejected while 1c, which state that contraction of sexually transmitted infection is not a significant predictor of school drop – out among girls was retained.

**Table 5: The t–test difference in the rate of girls drop out from public and private schools**

Schools	N	$\bar{x}$	SD	Df	Tcale	T tab	P
Public	29	0.92	0.27				
Private	4	1.62	0.17	31	5.45	1.70	<0.05 (Sig)

From the table above, the mean rates of school drop out of girls from public and private schools are 0.92 and 1.62 with standard deviations of 0.27 and 0.71 respectively, the t–test analysis calculated on these values yielded a t–ratio of 5.45, which is significant at five percent level (t = 5.45, df = 31, p<0.05). This leads to the rejection of null hypothesis two (b) which means that there is a significant difference between the rates of girls drop – out in public and private schools.

### Discussion of Findings

The analysis of research question one revealed that the nature of sexual behaviours common among teenage girls that dropped out of school system were having more than one sexual partner at a time, engaging in indiscriminate sex and having casual relationship. This result confirms the submission of Uwaezuoke (2014) who affirms similar sexual misbehaviours among teenage girls in their studies. The findings showed that sexual misbehaviour is not only limited to girls from poor family as some girls from rich family engaged in lesbianism and prostitution due to peer group influence. Explanations therefore may not be unconnected to the general insensitive nature of some parent towards their girl child. Therefore, better and positive monitoring and supervision is highly expected from parents.

In the same vein, the result of the study on research question two which centered on casual factors affecting sexual behaviours of girls revealed that poverty ranked first while greed, lack of contentment and media played a significant role among casual factors affecting teenage girls. This result also reflected the submission of Olaseha and Alao (2013) who affirmed that

social media and greed played a significant role among factors affecting sexual behaviour of teenage girls.

The result of hypothesis one which revealed that teenage pregnancy, abortion and teenage motherhood are significant sexual factors in school drop –out was expected. Firstly, the school's decision about pregnant student is automatic expulsion which may lead to shame and stigmatization. In this study, the issue of motherhood found to be a significant factor in school drop- out among girls was corroborated by Ajuwon, Fawole and Osungbade (2014).The result of hypothesis two which showed that the rate of school drop-out due to sex related reasons among girls in the rural areas is higher than that of teenage girls at urban centers, could be due to the fact that most girls in the urban centers are exposed to sexuality issues such as contraceptive use through the media, seminal, films, campaigns and workshop which are often organized in rural schools.

The reason for high rate of drop-out among teenage girls in public secondary schools than in the private schools could be speculated. Most private schools monitor the activities of their students especially those in the boarding house than the public schools' students. This finding confirms the assertion Ogor (2020) assertion that there are well effected rules and regulation in private schools. Although there were cases of drop-out due to sex related reasons in some private schools, this is not as rampant as noticed in the public schools where girls are free and unguided

### **Conclusion and Recommendation**

Based on the results of this study, it was concluded that girls who dropped out of schools engaged in multiple partnership, unprotected and indiscriminate sex but not is sex trade. Teenage pregnancy and motherhood, abortion and sexual harassment in schools drop – out among girls in Oyo state, also, the rate of public school dropout among girls from ban and private rural and public school were higher than the drop – out rates in urban and private school

In view of the findings, the study recommended the following:

1. Family life and sex education should be made a core subject in the secondary schools. This will equip the students with relevant information on human sexuality which will help them behaviour modification.
2. Alternative worthwhile activities/programmers including sports should be mounted in schools to occupy the students' free period. This will be of great value to redirect the students' focus from indiscipline sexual behavior
3. Parent must give their children the right type of sex education. They should allow their children discuss their sexuality or any sexual issue that concerns them in a safe environment. Parent should neither judge or impose fear on their children. It is necessary for parent to have time for their children. They must share their experience with the children especially girls and most importantly provide for their needs.
4. School authority in collaboration with various social organization should help in organizing regular periodic seminars, talks, shows and workers shops on the effects of engaging in illicit sexual activities as well fashion out ways of curbing indecent sexual behaviors among students in schools.
5. The government at all levels should strive to improve the nation economy and raised the standard in homes so that poverty as the root cause of sexual misbehaviours as found in the study could be eradicated in the society.

- 6 Both parents and schools should encourage drop-out girls to go back to school by counseling them, showing care and love to for those that dropped out based on sexual reasons

### References

- Adedigba, A. (2017). Prevalence of violence against young female hawkers in three cities in south western Nigeria. *Health Education* 102(5): 230-231.
- Afolabi, A. (2021). Impact of family type on involvement of adolescent in pre-marital sex. *International Journal of Psychology and Counselling*. 3(1):15-19.
- Agbodo, J. A. (2017). Influence of news media on the sexual behavior of university Undergraduates in South East, Nigeria. An M.Sc. thesis submitted to the Department of Mass Communication, Ebonyi State University.
- Ajuwon, A.J., Fawole, I.O. and Osungbade, K.O (2003). Effect of Education on knowledge of contraceptives and social behaviour among young female hawkers in selected motorparks in Ibadan, Nigeria. Report submitted to the Union of Population Studies, Dakar, Senegal
- Ayodele, R.B (2011). *Sexual mistakes, Etiology of school dropout syndrome among Teen girls in Ile – Ife, Osun State*. An Unpublished Paper. ObafemiAwolowo University, Ile – Ife, Nigeria Pp 11 – 14.
- Aselon, V. (2020). Reasons for in-effective contraceptive use: antedating adolescent pregnancies: an indicator of gaps in family planning services and child health. *African Journal of Medicine and Medical Sciences*. 13(3) 295-300.
- Anene, J.O, Ojinaka, E P, and Nide, E.C (2017). Variables influencing premarital Sex among secondary school adolescents in Anambra State, *Nigeria Journal of Community and Public Health Nursing* 3(4) 300-310.
- Chigona C. and Cheety, R, (2007) Girls education in South Africa: Special consideration to teen mother as learners. *Journal of education for international development*.
- Moronkola, O.A. and Adio-Moses, R. O. (2013). Knowledge and attitude towards sexually transmitted infection among Nigeria female adolescent students. *African Journal of Nursing and Midwifery* 5(2):51-54.
- Macphail, C. and Campbell A. (2011). Condom use among adolescent and young people in a Southern African township. *Social Science and Medicine* 52(11):163-164.
- Nwakwo, N, (2017). Overcoming obstacles to educational access for Kenya girls: A qualitative study, *journal of international women studies*, 18(2), 260 – 274
- Olaseha, I. O., Alao, A., (2013). Knowledge, attitude and at-risk behaviours of adolescent students: towards AIDS prevention and control in Ibadan city, Oyo State, Nigeria. *Nigeria School Health Journal*, 7(2): 127-130.
- Ogoh, A. (2020). Adolescent reproductive health practices Nigeria. *African Journal of Reproductive health* 5(3):109-113
- Uwaezuoke S.C. (2014). Determinant of Teenage Pregnancy in Rural Communities of Abia State, South East Nigeria, *Journal of College of Medicine*. 9:28-30.
- UNICEF (2007), The rationale for sexuality education: International Technical Guidance on Sexuality Education: An evidence-informed approach for schools, teachers and health educators. *UNICEF Publication*.
- World Health Organization. (2020). Conselling skills training in adolescent sexuality and reproductive health. *A facilitator's Guide*

## KNOWLEDGE AND AWARENESS OF PRIMARY SCHOOL PUPILS ON ENVIRONMENTAL CITIZENSHIP IN ABEOKUTA SOUTH LOCAL GOVERNMENT AREA OF OGUN STATE

<sup>1</sup>Soluade, Zabur Olayiwola, <sup>2</sup>Bashiru, Muniru Adebayo, <sup>3</sup>Akapo, Tijani Abayomi & <sup>4</sup>Shekoni, Lateef Kehinde

<sup>1</sup>Department of Sociological Studies,  
College of Social and Management Sciences,  
Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria  
Soluadezo@tasued.edu.ng, +2348035754275

<sup>2</sup>Department of Sociological Studies,  
College of Social and Management Sciences,  
Tai Solarin University of Education, Ijebu-Ode, Ogun State, Nigeria.

<sup>3</sup>Department of Language Arts and Social Science Education,  
Lagos State University, Ojo, Lagos State  
Tijani.akapo@lasu.edu.ng, 08033827305

<sup>4</sup>Department of Language Arts and Social Science Education,  
Lagos State University, Ojo, Lagos State  
lashek8@gmail.com, 07037288861

### Abstract

*The paper assesses the knowledge and awareness of primary school pupils on environmental citizenship. The study adopted a descriptive survey research design. The population of the study consisted of all the seventy-six thousand six hundred and seventy-seven (76,677) primary four school pupils in Abeokuta south area of Ogun state. Two hundred and seventy (270) primary five pupils were selected for the study using the convenience sampling technique. A self-structured questionnaire tagged “Knowledge and Awareness on Environmental Citizenship Questionnaire” (KAECQ) ( $r=0.89$ ) was used to obtain information from the respondents. The data obtained were analysed using the mean, standard deviation and t-test. The result shows slight differences in the knowledge, disposition and perception of pupils based on school and gender differences in the disposition of the pupils towards environmental citizenship in favour of females. It was recommended that pupils be exposed to the same adequate content of environmental citizenship to ensure equal exposure to environmental knowledge and awareness.*

**Key Words:** Awareness, citizenship, environment, environmental citizenship, knowledge

### Introduction

Over the past years, there have been great concerns over the global environmental issues that have implications for the attitude of the citizen towards the environment, measurement of environmental consciousness and citizenship attainment of environmental citizenship. Individual patterns of consumption have contributed towards climate changes that are affecting the world and citizen consciousness about their roles in sustaining the environment needs to be re-assessed. The rise of temperature has been noticeable and this strengthens the arguments about the greenhouse effect. This has implications for citizen actions in sustaining or destroying the environment. The environmental concerns include carbon dioxide emissions by transportation, deforestation, open burning, excessive waste, river pollution and so on, all these are results of citizens' activities in the environment. These issues have raised the global need for enhancing

environmental citizenship. The issue of citizenship is nowadays topical among environmentalists as it has the potential to foster new ethics for consumers to change their behaviour into a more sustainable and responsible one (Seyfang, 2006). The increasing awareness of the human impact on the environment is having negative effects on all dimensions of contemporary societies, including the political spheres (Cao, 2013).

Over time, the concept of citizenship has been divided into three main types, namely, civic, political and social. Civic citizenship implies rights for free speech, religion, thought; political refers to the right to participate in the exercise of political power; while social citizenship draws on numerous social rights, like for economic well-being, education or health. However, in recent times, citizen environmental rights and responsibilities have been recognised as another form of citizenship, which implies citizenship for a natural and safe milieu, protecting individuals from polluted and degrading environments (Paehlke, 2008). Civic engagement depends on students and their motivation to participate in civic activities, their confidence in the effectiveness of their participation and their beliefs about their own capacity to become actively involved (Schulz et al., 2018).

In recent times, there has been a growing emphasis on environmental duties more than on rights. Citizen environmental citizen supports protecting soil, avoiding pollution of water and air, preserving and enriching biodiversity, and, of course, limiting consumption to a reasonable minimum. All world citizens need to play a number of roles if they are to protect and improve the quality of the environment effectively, also, they need to influence and catalyse behaviour change among themselves. The issue of sustainable behaviour must involve changes in the behaviour and attitudes of citizens (Dobson, 2007). One of the key elements of achieving the goals of sustainable development resides in environmental citizenship. Environmental citizenship is an important element in transition to sustainability (Barry, 2002). Environmental citizenship is a form of citizenship that emphasises the importance of the environment, environmental sustainability, and citizen roles in social and political aspects of life, both public and private. Environmental citizenship focuses on the need to have citizens who inhibit greater awareness of the environment and try to maintain and preserve the earth by participating in activities that encourage 'green' activities and saving the earth (Parra, 2020). Environmental citizenship is the responsible pro-environmental behaviour of citizens who act and participate in society as agents of change in all spheres of life through personal and collective actions with the goals of solving the environmental problem and achieving sustainable development (ENEC, 2018).

## Literature Review

Environmental citizenship refers to the obligation of each citizen belonging to that community to preserve the surrounding environment by engaging in pro-environmental behaviour and participating in sustainable policy (Dobson 2010, DARco & Marino, 2022). DARco et al., (2022) also stress that environmental citizenship also includes individual and collective action performed by individuals either in the public or private spheres (DARco & Marino, 2022). The exercise of environmental citizenship is associated with the citizens' capacity to act in society as agent of change (ENEC, 2018). Individuals in society have a responsibility to take actions that protect the environment (Schild, 2016). Reis (2020) therefore opined who people that are ready to serve as agents of change depend on a person's willingness and competence for a critical, active and democratic engagement in preventing and solving environmental problems.

The focus of education for environmental citizenship is to develop the disposition, and skills, competencies that will enable students to reach the levels of environmental awareness through a more civic participation raised students that will contribute to effective safeguarding the environment (Plotical, 2019). Education for environmental citizenship enhances the development of active environmental citizenship (Monte & Reis, 2021). Environmental citizenship education is the set of knowledge, skills, values and attitudes that an environmental citizen must have in order to act and participate as an agent of change (Hadjichambis & Reis, 2020). Educating and empowering pupils to become environmental citizens who are ready to serve as agents of change in the environment is crucial for addressing current environmental issues.

The experience in Nigeria today shows that young people's citizenship participation in the resolution of environmental problems is low. Nigerian society is facing constant environmental challenges and this call for the integration of environmental citizenship as an important element of democratic citizenship. Our public primary school pupils environmental behaviour is characterised by littering the compound with papers, plastics and nylon pollution and only a few of the pupils are willing to embrace the global community goal of solving the environment. Most of the time, Nigerian citizens feel unconcerned about their role in resolving environmental problems and sustaining our environment. Nigeria sees the cleaning of refuse as a government duty therefore, dump refuse indiscriminately in all places. Our idea of citizenship from this part of the world is seen from civic and social roles only and not much are said about the role of the citizen in sustaining the environment. Therefore, participation in the resolution of environmental problems is a right and, at the same time, should be viewed as a point of responsibility and a duty. Changes in the behaviour of citizens, institutions and organizations are a prerequisite for sustainable development (Dobson, 2007). In addition, in order to ensure the sustainability of the environment we live in, environmental citizenship consciousness needs to be acquired. It is important to determine the environmental citizenship levels of the new generation of pupils who will gain this awareness (Karatekin & Uysal, 2018).

Environmental citizens should be conscious of the fact that their activities in the environment have public environmental implications. In other words, environmental citizenship is a concept of the private sphere as well as the public sphere. Overall, the duty of the environmental citizen is to live sustainably so that others may live well (Dobson 2007). Szerszynski (2003) observed that environmental citizenship is a personal commitment to learning more about the environment and to taking responsible environmental action. Environmental citizenship encourages individuals, communities and organizations to think about the environmental rights and responsibilities we all have as residents of planet Earth (Szerszynski, 2003). Environmental citizens have the responsibility to support and foster future behavioural changes in different spheres (Plotical, 2019).

Education for environmental citizenship includes actions in the private and public sectors as well as organisational behaviour. Environmental citizenship helps to develop citizens' consciousness of their responsibilities in achieving positive changes and participation in environmental sustainability and decision making processes (Schild, 2016). Promoting effective environmental citizenship is one way to achieve sustainability - people should be encouraged to act to preserve the environment and the common good. It is therefore becoming increasingly important for citizens, agencies and Nigerian government to encourage individual citizens towards understanding and entrenching environmental citizenship in society. Environmental related education has become more critical and crucial over time, as environmental problems

have become more severe, thus, the need for environmental awareness and consciousness has increased (Kang & Hong, 2021). Most of the environmental problems currently experienced in our society are not the problems of the environment but problems created by human beings in the environment. There is therefore, the need to examine the knowledge of students about the environment and attitude towards the environment.

The influence of gender as related to environmental related issues has been a discourse among scholars over time. McCright (2010) and Ballewm-Marlon, Leiserowitz and Maibah (2018) have found women to convey greater knowledge of the environment, are more concerned about the environment and have more pro-climate opinions and beliefs than men. However, Bhartiya, 2017 and Kaur, 2017 do not record any difference in the perceptions of students on environmental issues based on gender. This showed inconclusiveness in the moderating roles of gender and thus necessitated the need to examine the moderating effects of gender on the knowledge, disposition and perception of pre-service social studies teachers on environmental citizenship.

The theoretical background for this study is found in the value-belief – norm theory by Stern, et al., (1995) which focused on the hierarchical inter-attitudinal structure of environmental attitudes. People tend to fall back on their values to develop a position when faced with a specific environmental dilemma. Stern, et al., (1995) stressed that people derive their attitudes towards specific environmental issues from their general values and internalised moral norms. Attitudes are often embedded in a complex network of relations between attitudes, beliefs, and values in which strongly held values are core, or central, elements in the sense that they are linked to many attitudes and beliefs as well as to other values (Feather, 1996). Most attitude-attitude linkages have featured the anchoring of attitude to values. This emphasis implies that attitudes that are linked to more abstract attitudes (values) in a hierarchical structure may be particularly strong (Eagly & Kulesa, 1997; Eagly & Chaiken, 1998). When environmental attitudes are deduced from values, they are in fact generalised from more abstract attitudes, people differ with respect to what values they use to justify their attitudes (Kristiansen & Zanna, 1988).

Hassan et al., (2021) studied environmental citizenship perception and behaviour among university engineering students in the Marmara region of Turkey. Significant difference was found among the students' environmental thoughts in terms of gender, the participation of voluntary environmental organization, voluntary in the family, education level of the father and students environmental behaviour interms of the education level of the mother. They also found significant differences between students studying in engineering faculties and environmental engineering students in terms of some environmental behvaiour Georgious, et al., (2021) reviewed teachers' perceptions of environmental citizenship. Findings show a relative decreased understanding of environmental citizenship, narrowed down to the local scale, individual dimensions and private sphere, multi-dimensional is defined by inter-related components and varies according to teachers educational / cultural backgrounds and personalities. DARco and Matino (2022) assessed environmental citizenship behaviour and sustainability. The result shows a significant positive relationship between awareness of consequences, ascription of personal responsibility norms, environmental citizenship behaviour in both the public and private spheres. The study also attested that sustainability app utilisation has a moderating effect on the prediction of environmental citizenship behaviours.

The issue of environmental citizenship has generated a lot of interest among stakeholders in the western world. This was targeted at achieving environmental sustainability and raising citizens who are conscious of their roles in their environment. Studies on environmental issues

within Nigeria have focussed on environmental problems, issues of environmental hazards, their effect on the populace, and environmental sustainability, but much has not been done on role of the citizens in causing environmental hazards and sustainability. On the citizenship spheres, studies on citizenship has been on political, economic and social rights and duties of the citizens with not much work carried on the relationship between citizen and the environment and citizen roles in sustaining the environment and guarantee continuous human existence. This study, therefore, assessed the knowledge and awareness of primary school pupils on environmental citizenship in Ogun state.

### **Objectives**

The objectives of this study is to:

1. Assessed the primary school pupil's knowledge, and awareness of environmental citizenship; and
2. Examined the knowledge of the primary school pupils on environmental citizenship based on gender.

### **Research Questions**

1. What is the primary school pupils' knowledge of environmental citizenship?
2. What is the awareness of primary school pupils on environmental citizenship?

### **Hypothesis**

**H<sub>01</sub>:** There is no significant difference in the knowledge of environmental citizenship of primary school pupil's based on gender.

### **Methods and Materials**

#### **Study Design**

The study adopted a descriptive survey research design. The design is appropriate because it helps gather information about the knowledge and awareness of pupils about environmental citizenship.

#### **Population of the Study**

The population for the study consisted of all the seventy-six thousand six hundred and seventy-seven (76,677) primary four pupil's in Abeokuta south local government area of Ogun state. The population is appropriate because the students are in the upper basic of the primary school level and they have been taken through lessons relating to environmental sustainability at the lower primary school level.

#### **Sample and Sampling Procedure**

Two hundred and seventy (270) primary four pupils are selected through convenient sampling technique (volunteer sampling procedure). This allows the researcher to make use of the pupils who are ready to participate in the study after they have been fully briefed.

#### **Instrumentation**

The major instrument for data collection in the study is a self-structured questionnaire tagged "Knowledge and awareness on Environmental Citizenship Questionnaire" (KAECQ). The instrument consists of 24-items questionnaire, which was drawn from the research questions that

were set to guide the study. The questionnaire is based on a five point Likert scale of Never, Rarely, Sometimes, Often and Always to assess pupils' knowledge and awareness of environmental citizenship.

### Validity and Reliability

The content and face validity of the questionnaire were established by presenting a copy of the draft questionnaire to two experts in the field of test and measurement for further scrutiny and modification. This was to ascertain the suitability of the instrument in terms of language, presentation, clarity and applicability. Based on their comments, the necessary modifications were made. Also, a field trial of the instruments was carried out on primary school pupils in another local government outside the study area. Split half was used to determine the reliability coefficient of the instrument, which was found to be 0.89.

### Data Analysis Procedure

The data collected were coded and analysed using descriptive statistics of mean and standard deviation to answer the research questions raised to guide the study, while inferential statistics of t-test was used to analyse the significant differences in the knowledge of environmental citizenship of primary school pupils based on gender.

### Results

**Research Questions 1:** What is the primary school pupil's knowledge of environmental citizenship?

**Table 1: Distributions on the primary school pupil's knowledge of environmental citizenship.**

Knowledge	N	Mean	SD
A	145	14.06	2.774
B	127	13.13	3.061

The table above shows the primary school pupil's knowledge of environmental citizenship. The students in A recorded higher mean score of 14.06 (SD =2.774) than the students in B who recorded a mean score of 13.13 (3.061). The standard deviation showed a moderate level of closeness between the two groups.

**Research Question 2:** What is the primary school pupil's awareness of environmental citizenship?

**Table 2: Distributions of primary school pupils' awareness of environmental citizenship.**

Disposition	N	Mean	SD
A	145	38.42	8.764
B	126	34.85	8.602

The table above showed the primary school pupils awareness of environmental citizenship. The students in A recorded a higher mean score of 38.42 (SD =8.764) than the students in B who recorded mean score of 34.85 (8.602). However, Standard deviation showed moderate level of closeness between the two group.

**H<sub>01</sub>:** There is no significant differences in the knowledge environmental citizenship of primary school pupil's based on gender.

**Table 3: T-test analysis of difference in the knowledge of environmental citizenship of primary school pupil's based on gender.**

Gender	N	Mean	SD	t	Df	Sig	Decision
Male	89	13.66	3.144	-198	268	.843	NS
Female	161	13.73	2.811				

The table 3: The table above shows that the male pupils recorded a higher mean score 13.66 (S.D = 3.144) than the female that has mean score of 13.73 (S.D = 2.811). This showed that both male and female are very fairly similar in the knowledge of environmental citizenship based on gender though the female pupils recorded highest mean score with margin of 0.7. The standard deviation is close. This implied that there is closeness in the performance of the students in the both male and female.

### Discussions

The study assessed the knowledge and awareness of primary school pupils' environmental citizenship in Ogun State. On assessing the knowledge of pre-service Social Studies teachers' based on types of schools. The findings showed that the performance of pupils' in school A is higher than the performance of pupils' in school B although, their performances were very close. This seems to support the result of Oloyede and Asaju (2016), who found no significant main effect between outdoor activities on students' environmental knowledge. They also revealed that, no significant interaction effect of outdoor activities and school location on students' environmental knowledge. The reason for this could be that pupils might be exposed to the same content of environmental citizenship. The pupils' performance could also be attributed to other school programmes and not necessarily the content they are exposed to during classroom teaching and learning. The implication of these findings is that pupils learning experience and knowledge acquisition are very close and school location doesn't differentiate their performance. However, the non-inclusion of the teachers and pupils in the study serves as a limitation of the study. Further study could absorb other levels and variables to assess the pupils' knowledge of environmental citizenship.

The awareness of primary school pupils on environmental citizenship varies depending on the type of schools. The study revealed that the pupils in school A have higher mean scores than the pupils in school B. Although, the performance differences is not much. This study negates the study of Schild (2018) whose study found significant difference between students' studying in engineering faculties and environmental engineering in terms of some environmental behaviour. This finding could be as result of similarities in the cultural background of the students' of the two schools. The awareness of students on environmental citizenship might be as a result of enlightening programme the pupils are exposed to through mass and social media. The implication of this findings is that despite differences in the location of pupils schools their experience is still very similar although with slight higher mean difference.

On Knowledge of primary school pupils on environmental citizenship based on gender. The findings on assessing knowledge of primary school pupils on gender revealed that both male and female mean scores are fairly close. Though, the female students recorded highest mean score with decimal margin than male student. The t-test obtained shown no significant difference between the knowledge of male and female. This is in contrast to the study of Oloyede and Asaju (2016) who recorder higher performance in favour of the male than female in their study on environmental knowledge. However, this finding is in contrast with the finding of Schild

(2018) who found significant difference among the students' environmental thought in terms of gender. This finding might be due to other sources that the pupils received environmental citizenship contents from which makes both male and female to have equal access to knowledge that is related to environmental knowledge and awareness. This finding might be due to the fact that culture place a lot environmental duties on female than male in our society.

## Conclusion

The study focused on the assessment of knowledge and awareness of primary school pupils on Environmental Citizenship. The assessment on knowledge and awareness of primary school pupils on environmental citizenship were found to be slightly different based on type of school. This suggested that student's experiences of the pupils are similar in terms of knowledge and awareness of environmental citizenship issues. Male and female primary school pupil's recorded similar scores across the schools. This suggested that both male and female are exposed to the same curriculum on environmental citizenship and also have similar environmental experience. There are differences in the mean score of pupils based on type of school in the area of their Knowledge and awareness on environmental citizenship issues. This suggested that school environment has relevance to how pupils will react to environmental citizenship related issues.

## Recommendations

Based on the findings the following recommendations are made.

1. primary school pupils should be exposed to the same adequate content of environmental citizenship to make them have equal knowledge of environmental issues
2. Both male and female should be exposed to the same content on environmental citizenship and society should give both gender equal roles to perform in the environment.
3. All schools should see environmental citizenship issues as paramount and no school should be left behind.
4. Government should increase awareness and re-orientation of citizens on need for environmental citizenship at any particular place they find themselves.

## References

- Barry, B. (2002). *Culture and equality: An egalitarian critique of multiculturalism*. Harvard University press.
- DArco, M., & Marino, V. (2022). Environmental citizenship behaviour and sustainability apps: An empirical investigation. *Journal of transforming government: People, Process and Policy*. <https://doi.org/10.1108TG-07-02021-0118>
- Dobson, A. (2003). *Citizenship and the Environment*. ULC Oxford university press.
- Dobson, A. & Valensia.S. (2005). *Citizenship, environment, economy*. Routledge.
- Eagly, A. H., & Kulesa, P. (1997). Attitudes, attitude structure, and resistance to change: Implication for persuasion on environmental issue. In M. H. Bazerman, D. *Environment Agency Corporate Plan 2004-2006*.
- European Network for Environmental Citizenship (ENEC) (2018). Defining education for environmental citizenship. <https://enec-cost.eu/our-approach>
- Feather, N. T. (1996). Values, deservingness, and attitudes toward high achievers. Research

- on tall poppies. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The Ontario Symposium: The psychology of values*, 8, 215-251.
- Georgious, Y., Hadjichambi, A., & Hadjichambi, D. (2021). Teachers perception of environmental citizenship: A systematic review of the literature. *Sustainability*, 13(5), 1-29.
- Hadjichambis, A.C. & Reis, P. (2020). Introduction to the conceptualization of environmental citizenship for twenty first century education in *Conceptualizing Environmental Citizenship for 21<sup>st</sup> Century Education*: Hadjichambis, A.C., Reis, P., Par-askeva-Hadjichambis, D., Cincera, J., Pauw, J.B., Gericke, N., Knippels, M.C., Eds: Springer. Charm, Switzerland, 17-28.
- Hassan, V.O., Ozgen, E., Yay, A.S & Hassan, S. (2021). Environmental development and sustainability: A multidisplinary approach to the theory and practice of sustainable development. *Springer*, 23(3), 3638-3652
- Kristiansen, C. M., & Zanna, M. P. (1988). Justifying attitudes by appealing to values: A functional perspective. *British Journal of Social Psychology*, 27, 247-256.
- Monte, T., Reis, P. (2021). Design of a pedagogical model of education for environmental citizenship in primary education sustainability. *Sustainability*, 13, 6000. <https://doi.org/10.3390/su13116000>.
- Reis, P. (2020). Environmental citizens sand you. Chapter in Hadjichambis et al., (Eds). *Conceptualizing Environmental Citizenship for 21<sup>st</sup> Century Education, Environmental Discourse in Science Education 4*. <https://doi.org/10.1007/978-3-030-20249-1-9>
- Schulz, W., Ainley, J., Frailon, J., Losito, B., Agrusti, G., & Friedman, T. (2018). Becoming citizen in a changing world: IEA International Civic and Citizenship Education Study. 2016 International Report. Amsterdam: IEA and Springer.
- Stern, P. C., Dietz, T., Kalof, L., & Guagnano, G. A. (1995). Values, beliefs, and Pro-environmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, 25, 1611-1636. \

## AN ASSESSMENT OF AWARENESS OF THE LIBRARY AUTOMATION CIRCULATION SYSTEM AMONG STAFF AND STUDENTS OF TAI SOLARIN UNIVERSITY OF EDUCATION

<sup>1</sup>Sulaimon Olawale, Nosiru & <sup>2</sup>Oluyemo Alade Abdullateef

<sup>1</sup>Science Education Department, Faculty of Education,  
National Open University of Nigeria, Abuja

snosiru@noun.edu.ng, +2347038448548, +2348055244804

<sup>2</sup>Educational Foundations Department, Faculty of Education,  
National Open University of Nigeria, Abuja

aoluyemo@noun.edu.ng, +2347031281829

### Abstract

*The study examined the awareness assessment of the library automation circulation system at Tai Solarin University of Education, Ijebu-Ode, Ogun State". Two research objectives and four research questions steered the study. The study embraced descriptive survey research design. The target population consists of 450 computer science students in the 200 level. Krejcie's Morgan's table was used to illustrate 200 students using simple random sampling techniques for this study. Structured questionnaire items with a five-point Likert scale measurement were designed as instruments for the study. The questionnaire comprised two main sections namely A and B with the former focusing on the respondents' socio-demographic characteristics comprising eight items including age, religion, and education, and the latter assessing the level of awareness of library automation among the study population. Face validity to generate logical validity of 0.74 index. The Cronbach alpha method was used to estimate a reliability coefficient of 0.72. The instrument was administered to students and staff in the library for reading and research purposes during examination. The relevant data harvested were analyzed using percentage and descriptive statistics of mean and standard deviations with Statistical Package for Social Sciences (SPSS) version 17.0. Findings from the study revealed that 86.8% of the respondents were aware that the university library is automated, 16.8 % of the respondents used applications presented by the library's automated services and the majority of the respondents who were 58.4% and 34.0% said they were content with the library's databases and book stock. Based on the findings, I therefore recommend that the government provide more funding to the university for the development of library automation to aid teaching and research. There is also a need for more awareness creation on the part of the university to encourage the use of the library with its diverse resources that are now automated.*

**Keywords:** Assessment, Awareness, Library Automation, Circulation

### Introduction

The library is well-thought-out and pivotal to any type of educational institution. A well-financed and braced library is the base of an informed educational system. In classic libraries, users need to capitalize a great deal of vigor in considering facts operating library staff. But in the present age of ICT, computer terminals are used for daily library processes, saving time evading replication of work, and generating flexible and well-organized library services (Sharma & Parasar, 2014). Library automation is a development of systematizing customary library roles/activities. Library facilities include, unlike services like "procurement, serial control,

system cataloging circulation," and other interrelated activities. Such automation not merely offers wide-ranging assistance to library staff for their normal work implementation but also gives offices, for instance, forthright responsibilities through the data set accessibility across features exploiting the Internet (Das & Chatterjee, 2015). Thus, the Library Automation outline prompts an unconceivable easiness of work and eco-friendly factors (Tabusum, 2013). It is imaginable when library heads associate with users and observe their data requirements. It is incessant in the created countries to lead the user contentment studies in libraries to check and advance the nature and level of library management presented to users. Such kind of indication can support them by looking at the strengths and concerns of libraries and permit an occasion for library administrations to advance user contentment. In undeveloped nations, the user's perceptions and contentment concerning library management have been ignored by essayists, scientists, and library specialists. Omeluzor and Oyovwe-Tinuoye (2016) opposed the osmosis of the suitable automation of library undertakings and events, authorizes the users of academic libraries to get admittance to their appropriate data each time and region. For instance, getting to the present statistics from automated information stations and getting a fast response from the two entomb library development and document transmission management over email made simple with the application of web and PCs.

### Review of Literature

A group of studies have been issued on users' awareness of library computerization in educational libraries. Library automation is very significant in improving the librarian's effectiveness because due to computerized library facilities staff can upsurge their output. It also makes likely, the growth of technology and makes easy access to any kind of information through the internet. Data from the library within their essential time just because of the automated library services produce faster and reliable services to library users. It is by Sudhamani (2010) also acquiesced to a report to the Rajiv Gandhi University of Health Sciences, India concerning Library computerization. Here he stated that library automation advances the value, speed, and efficiency of library management; increases the permission to distinct users; makes imaginable the dispersion of massive quantities of data items and managements, works with resources in-between libraries and its users, enhances the management of corporeal and financial resources and endows quick communication with diverse custodians. Nevertheless, despite the prominence of library automation in universities several lecturers and students do not care to use its services. They choose the use of physical techniques that are no longer suitable for finding information that is essential for growth and development due to steady changes and developments in technology. Bhatti and Asghar (2010) charted a study that exposed the contentment level of medical students of Quaid-e-Azam Medical College, Bahawalpur. The result revealed that as for users the library services and assets were not sufficient. The mainstream of plaintiffs were somewhat pleased with library orientation services, indexing and abstracting services, Selective Dissemination of Information (SDI) services, current awareness services (CAS), and circulation services but they were not gratified with Interlibrary loan (ILL) and workers learning and paraphrasing services Bhatti and Asghar (2010).

Hussaini, Vashistha, Jimoh, and Jimah (2017) highlight in their research that librarians can improve the contentment level of users by computerizing library processes like Circulation, Online Public Access Catalog, acquisition, and serial services. Pandya and Darbar (2016) led a study in which they discovered what users identified about the library's computerized system. Further, they identified that users were very contented with the fast facilities of the library after

computerization because they are receiving data very speedily which directly enhances the timely accomplishment of their assignment. Likewise, Mairaj and Naseer (2013) piloted research with the title of "Library Services and User Satisfaction in Developing Countries: A Case Study". The outcome discovered that vast statistics of users of the Punjab Institute of Cardiology (PIC) Lahore were contented with library orientation and transmission services, Circulation, library collection, and infrastructure.

### **Statement of the Problem**

Academic libraries are the "hub" of the learning community, providing a place for students and faculty members to do research and advance knowledge. In the age of manual operations, information services were processed at a slow pace. Books completely dominated the concept of libraries of that time, hence it was hard to find fault with those who conceived new libraries with the mind of automation. However, one major challenge has been that most lecturers and students are not aware of the usage of library automation that talks about the tastes of a time when valuable knowledge could easily be accessible. This study thus seeks to survey the level of awareness and content with available library automation and circulation systems in Tai Solarin University of Education e-library, Ijebu-Ode, Ogun State, Nigeria.

### **Aim and Objectives of the Study/ Purpose of the Study**

The purpose of this research is to assess the awareness of library automation in Tai Solarin University of Education, Ijebu Ode Ogun State, Nigeria. The specific objectives are:

- i. To assess the level of awareness in the use of Library facilities among the staff and students of Tai Solarin University of Education, Ijebu-Ode, Ogun State.
- ii. To assess the level of contentment in the use of Library facilities among the staff and students of Tai Solarin University of Education, Ijebu-Ode, Ogun State.

### **Research Questions**

- i. What is the percentage level of awareness of the use of Library facilities among the staff of Tai Solarin University of Education, Ijebu Ode Ogun State?
- ii. What is the percentage level of awareness of the use of Library facilities among the students of Tai Solarin University of Education, Ijebu Ode Ogun State?

### **Significance of the Study**

The outcome of this study will benefit students to get to know and be aware of the use of library automation facilities that will enhance their learning towards a better performance as a result of accessibility to information that is required of them. The study will help lecturers also to be familiar with and aware of the available automation facilities that will help their research work where the current discovery of knowledge and skills to enrich their students towards a better performance in academics as well as society at large. The general public including the government are the beneficiaries of the products from universities and as such, the result of the study will bring a better change to the society for better growth and development. It is expected that the findings of this study will enhance the knowledge of the researcher and the general public on the significance of library automation services.

### **Research Methodology**

This study used a survey research design. The target population consists of 450 computer science

students in the 200 level. Krejcie's Morgan table was used to sample 200 students using simple random sampling techniques for this study. Structure Questionnaire that have a five-point Likert scale measurement was designed as instruments for the study. The questionnaire comprised two main sections namely A and B. Section 'A' focused on the respondents' socio-demographic characteristics comprising eight items including age, religion, and education. Section B will assess the level of awareness of library automation among the study population. This section comprised of 20 items. Face validity was carried out by giving the instrument to two experts for vetting and scrutiny before proceeding to the field for data collection, one in the field of measurement and Evaluation and the other one in the computer science Department to generate logical validity of 0.74 indexes. The Cronbach alpha method was used to establish a reliability coefficient of 0.72. The instrument was pilot-tested on 30 students who were not part of the sample population that served as respondents. The instrument was administered in the form of a test to the students with the support of one lecturer in the computer science department of the university. The relevant data harvested were analyzed using percentage and Descriptive statistics of mean and standard deviations using Statistical Package for Social Sciences (SPSS) version 17.0.

**Data Analysis and Results of Analysis.**

This section presents the analysis and interpretation of data collected for the study.

**Table 1a: Percentage distribution of level of awareness of the use of Library facilities among the staff of Tai Solarin University of Education, Ijebu Ode Ogun State**

Parameter	Classification	Percentage
Aware that the university library is computerized	Yes	86.8
	No	13.2
	Total	100.0
Describe your level of satisfaction with the introduction of library automation in this university	Indifference	17.8
	Not satisfy	23.1
	Satisfy	34.9
	Very satisfied	24.3
	Total	100.0
Average use of library per semester	Less than a month	50.9
	Once a month	6.7
	Once every two weeks	3.0
	Twice or three times a week	22.4
	Daily	17.0
	<b>Total</b>	<b>100.0</b>
Library facilities often use	Books loaning	45.1
	Talking books	25.0
	Reference books	12.8
	Computer facilities	8.5
	Others	8.5
Used library computerization for	<b>Total</b>	<b>100.0</b>
	To support course of study	38.8%
	Leisure/general enjoyment	9.3%
	Independent learning/research	35.5%
	Looking for jobs	0.5%
	Keeping in touch with friends/others	15.8%
	<b>Total</b>	<b>100.0%</b>

Table 1a revealed that 86.8% of the respondents were aware that the university library is

automated as a result, the highest percentage 34.9%, and 24.3% said they were satisfied and very satisfied with the introduction of library automation in this university. Hence, the average use of the library per semester was investigated and the analysis thus revealed that under whatever situation, the majority of staff and students visit the library at least less than a month, others once a month 6.7%, once every two weeks 3.0%, twice or three times a week 22.4%, and daily 17.0%. Besides, 45.1% often visit the library for booking while 8.5% visit the library for computer facilities and others, 12.8% visit the library to use the reference materials and talking books 25%. The main use of these facilities as reported by the highest percentage of 38.8% was to support a course of study, 35.5% used the library facilities for Independent learning/research, 15.8% used the library to keep in touch with friends/others, 9.3% for Leisure/general enjoyment while 0.5% use the library to search for jobs.

**Table 1b: Percentage level of awareness of the use of Library facilities among the students of Tai Solarin University of Education, Ijebu Ode, Ogun State**

Parameter	Classification	Percentage
Application often used while in the library	Word processing	15.6%
	Spreadsheet	1.2%
	Open learning courses	16.8%
	CD ROM	1.7%
	Worldwide web	16.8%
	<b>Total</b>	<b>33.6%</b>
Reason for using this facility	Email	11.6%
	Reading	13.9%
	Recreation	21.4%
	Discussion	0.6%
	Knowledge sharing	0.6%
	<b>Total</b>	<b>48.1%</b>
How would the withdrawal of computer facilities from the library affect you	Research & information seeking	61.1
	No effect	22.2
	Affecting the browsing of the web	16.7
	<b>Total</b>	<b>100</b>
If you do not use the computer facilities in the library, could you please say why	No interest	3.1
	Don't know	13.4
	Have access elsewhere	36.1
	No one to help	40.2
	Other	1.2
	<b>Total</b>	<b>100.0</b>

As Shown in the table above the applications often used by the highest percentage 16.8% of the respondents while in the library were open learning courses and the World Wide Web, others include word processing 15.6%, spreadsheets 1.2%, and CD ROM 1.7% respectively. Other reasons for using the library facility include email, 11.6%, reading 13.9%, recreation 21.4%, discussion 0.6% and knowledge sharing 0.6%/According to the respondents' withdrawal of computer facilities from the library will affect the majority 61.1% in their research and information seeking, 16.7% others said it will affect their ability to browsing the web. Nevertheless, 22.2% said it would not have any effects on them. Yet, for those not using the

computer facilities in the library, 3.1% said because they do not have interest, 13.4% said because they were not aware, yet, 36.1 said because they have access to computer facilities elsewhere while the highest percentage 40.2% said because nobody to help them while in the library and 7.2% others said it was due to other reasons.

**Influence of Library Automation on Research and Learning.**

**Table 1c: To assess the mean level of contentment in the use of library automation among staff of Tai Solarin University of Education, Ijebu-Ode, Ogun State**

Library Resources	I don't use	Discontent	Content	Mean	SD
Book Stock	29.4	36.6	34.0	2.0	0.8
Print Journals	79.5	10.6	9.8	1.3	0.6
Electronic Journals	54.3	9.3	36.4	1.8	0.9
Electronic Full Texts (on CD-ROM etc.)	47.4	35.5	17.1	1.7	0.7
Databases	35.2	6.4	58.4	2.2	0.9

*Mean of 1 = I don't know, 2= discontent, 3 = content*

*Table 1c: Descriptive analysis of respondents' level of contentment with the automation of the university library with regards to:*

**Table 1c: To assess the mean level of contentment with the circulation service of the university library among staff**

**Table 1d: To assess the mean level of contentment with the circulation service of Library automation among the students of Tai Solarin University of Education, Ijebu Ode Ogun State?**

Library Resources	I don't use	Discontent	Content	Very contented	Mean	SD
Loan periods	78.1	17.9	2.0	2.0	1.3	0.6
Library instructions	28.5	2.0	56.3	13.2	2.5	1.0
List of new acquisitions	35.1	27.2	34.4	3.3	2.1	0.9
User-friendliness of the OPAC (Online Catalogue)	50.0	40.0	8.0	2.0	1.6	0.7
Library Webpage	47.1	13.5	14.2	25.2	2.2	1.3
Number of workplaces	37.1	14.6	35.1	13.2	2.2	1.1
Equipment of workstations	34.1	12.9	40.2	12.9	2.3	1.1
PC, Internet)	42.4	11.9	17.2	28.5	2.3	1.3
Working atmosphere (silence, lighting)	38.4	31.8	22.5	7.3	2.0	1.0
	57.3	10.7	30.0	2.0	1.8	1.0

*Mean of 1= I don't know, 2 = discontent, 3= content, 4= very content*

Table 1d: Descriptive analysis of respondents' level of contentment with the CIRCULATION services of the university library with regards to Tables 1c and 1d present the descriptive analysis of respondents' level of contentment about library

holdings and circulation services. As shown in the analysis, the majority of the respondents 58.4% and 34.0% said they were content with the library's databases and book stock. In other words, databases or online public access in the library as well as the status of books in stock were adequately sufficient for library users, and their level of contentment was rated above average. Considering the mean and standard deviation, the top library resources that the respondents were contented with were databases and book stock. Also, a good number of the respondents acknowledged a low level of awareness of other elements of library automation such as the electronic journal and full texts that were available in the library. Furthermore, of all circulation services, the service with the highest level of contentment was Library instructions (mean = 2.5) followed by equipment of workstations and several workplaces (mean of 2.3) respectively. Nevertheless, the majority of the respondents expressed some apprehension about the loan period of the book borrowed.

### **Discussion of Results**

This study assesses the awareness of library automation by staff and students of Tai Solarin University of Education, Ijebu Ode, Ogun State, Nigeria. A total of 200 respondents were analyzed for the objectives of the study. The study specifically assessed the level of awareness of library automation among the respondents of the university and ascertained the level of awareness of library automation in research. On the level of awareness, 86.8% were aware that the university library is computerized and as a result, most of the staff and students visit the library for their information needs and knowledge acquisition as well as learning and research. This is in agreement with the study of Pandya and Darbar (2016) that the user's observation concerning library automation, the outcome discovered that the bulk of library users were aware of the use of library automation services. This corroborates with Ossai-Ugbah 2010: Jayaprakash and Balasubramani, 2011: Anas, Iqbal, and Ahmad, 2014) who documented that awareness of library automation provides a very good stage for the use of computers in the library. Book loaning was the library facility often used by the majority 45.1% while most of the library users used the library to support courses of study and independent learning and research. Against this background, Aina (2012) has earlier argued for the development of library automation for enhanced library service. The respondents nevertheless acknowledged a low level of awareness of other elements of library automation such as the electronic journal and full texts that were available in the library.

Furthermore, the level of contentment with the automation of the university library with regards to book and non-book as well as circulation services was also investigated. The analysis thus revealed that databases and/or online public access in the library as well as the status of books in stock were adequately sufficient for library users and their level of contentment was rated above average. Additionally, the top library resources that the respondents were contented with were databases and book stock. The result corroborates with Omeluzor and Oyovwe-Tinuoye (2016) who contended that the osmosis of the appropriate automation of library activities and activities empowers the clients of scholarly libraries to get access to their applicable data. Nunekpeku (2019) conducted a study in which they tried to know the satisfaction level of library users. The result of this study showed that more than half of the consumers of Sam Jonah Library were fairly satisfied with the library's automation. Pandya and Darbar (2016) conducted a study in which they explored what users knew about the library's automated system.

Regarding the barriers associated with library automation services of the university and Nigeria at large, the top barriers include poor electricity supply and poor internet facilities with a (mean score of 3.2 each) on a scale of four. Others with a (mean of 3.0) include a lack of enabling law, inadequate qualified professionals to handle library automation, and award of contracts to novices. This is in complete agreement with Rhoe, Oboh, and Shelton (2010), who identified among others insufficient funding, unreliable power supply, low bandwidth, lack of skilled staff and inadequate computer stations, inadequate manpower, lack of reliable electricity, low political support, poor communication between library staff and faculty members and students.

### **Conclusion**

This study looked at the computerization of the library automation system at the Tai Solarin University of Education, Ijebu-Ode Ogun State, Nigeria through the use of questionnaire administration that was administered to 200 respondents comprising students, lecturers, and other professionals within the university covering four months respectively. The major focus of the study was to assess the level of awareness of the participants (the university community) about library automation, the influence of library automation as well as barriers associated with ineffective library automation in the university and Nigeria at large. The results of the findings revealed that the majority of the respondents were well aware of library automation and its relevance in academic pursuits. Specifically, the respondents agreed that nearly all services of the university library through its automation were relevant to their information needs. Particularly the use of an online public access catalogue was identified as a good means of accessing the university materials that were available online. Services at the circulation desk were also valued by the majority of the respondents.

The influence of library automation was experienced in the areas of book loaning and research and independent learning and studying. Finally, major identified barriers were poor internet facilities, lack of adequate electricity supply as well as poor funding, and a limited number of ICT professionals in the areas of library automation systems. It was concluded from the findings of this study that though majority of the respondents were adequately informed about library automation as well as its significant role in learning and teaching. There is still a need for more awareness creation within the university community on the available materials within the library that are available and accessible via the online public access catalog OPAC.

### **Recommendations**

Based on the results of findings of this study, the following recommendations can be reached:

1. The government should provide more funding to the university for the development of library automation to aid teaching and research
2. There is a need for more awareness creation on the part of the university community to encourage the use of the library with its diverse resources that are now automated

### **References**

- Anas, M., Iqbal, J., & Ahmad, P. (2014). Impact of automation on library services in selected management institutes at Aligarh. *The Electronic Library*.
- Aswal, R. S. (2006). *Library automation for 21st century*: Ess Publication
- Bhatti, R., & Asghar, M. B. (2010). *Library services to medical students Quaid-E-Azam Medical College, Bahawalpur: a case study*. *Pakistan Library &*

- Information Science Journal, 41(1).
- Das, D., & Chatterjee, P. (2015). Library automation: an overview. *International Journal of Research in Library Science*, 1(1), 1-7.
- Hussaini, S., Vashistha, R., Jimoh, A. O., & Jimah, H. (2017). Automation of library services for enhanced users' satisfaction with information resources in academic libraries in Nigeria. Paper presented at the International Conference on Recent Innovations in Science, Engineering, Humanities and Management, 150.
- Jayaprakash, M., & Balasubramani, R. (2011). Status of automation in university libraries of Tamilnadu: a survey. *European Journal of Scientific Research*, 53(1), 17-24.
- Mairaj, M. I., & Naseer, M. M. (2013). Library services and user satisfaction in developing countries: a case study. *Health Information & Libraries Journal*, 30(4), 318-326.
- Nayana, J. (2019). A Study on Library Automation Status among the Aided College Libraries in Bengaluru. *Library Philosophy and Practice*, 1-16.
- Nunekpeku, P. (2019). Establishing clients' satisfaction levels with automated library-based services: A case study at University of Cape Coast Library, Ghana. *Digital Library Perspectives*, 36(1), 8-20. doi: 10.1108/DLP-02-2019-0004
- Omeluzor, S. U., & Oyovwe-Tinuoye, G. O. (2016). Assessing the adoption and use of integrated library systems (ILS) for library service provision in academic libraries in Edo and Delta states, Nigeria. *Library Review*.
- Pandya, D. M., & Darbar, M. (2016). User's perception on library automation: A survey. *Indian Journal of Library Science and Information Technology*, 1(2), 42-45.
- Saini, P., Bhakar, R., & Singh, B. (2014). User satisfaction of the students of engineering college: a case study of engineering college libraries of Jaipur, Rajasthan. *International Journal of Emerging Research in Management & Technology*, 3(9), 16-26.
- Sharma, A. K., & Parasar, D. (2014). The impact of ICT in library automation in the selected libraries of Dehradun: a case study. *Library Philosophy and Practice*, 0\_1.
- Sudhamani, K. (2010). Assessment and evaluation of open source library automation software KOHA and newgenlib adaptable to RGUHS digital library operations and functions. RGUHS.
- Tabusum, S. (2013). Impact of Library Automation in the Development Era. *IOSR Journal of Humanities and Social Science*, 17, 20-26.

# SYNERGIES OF TECHNOLOGICAL ADVANCES IN TELEMEDICINE, SPORTS AND TOURISM

**Oluwasogo Ruth Ogunleye**

Department of Human Kinetics and Health Education  
National Open University of Nigeria, Abuja  
oogunleye@noun.edu.ng

## Abstract

*In recent years, rapid developments in information and communication technologies (ICTs) have revolutionized various sectors, including healthcare, sports, and tourism travel. In the realm of telemedicine, the advent of telehealth platforms, wearable devices, and artificial intelligence has facilitated remote patient monitoring, diagnosis, and treatment. This has not only improved access to healthcare services but has also transformed the patient-doctor relationship. The paper delves into specific case studies and technological applications that have shaped the landscape of telemedicine, highlighting the challenges and opportunities presented by these innovations. This review highlights the interconnectedness of technology, sports, and tourism, emphasizing the transformative power of technology in improving healthcare accessibility, optimizing sports performance, and enhancing tourism experiences. It emphasizes the need for policymakers, healthcare professionals, sports organizations, and the tourism industry to navigate the evolving landscape of technology integration.*

**Keywords:** Technological advances, Telemedicine, Sports, Tourism

## Introduction

Technological advances in telemedicine have become instrumental in reshaping healthcare delivery, particularly in the realms of sports medicine and tourism. Telemedicine, defined as the remote provision of healthcare services using digital communication technologies, has undergone rapid development, leading to innovative applications within sports-related healthcare and the tourism industry (Bashshur et al., 2016; Dorsey et al., 2017). This intersection of telemedicine, sports, and tourism holds promise for improving athlete care, enhancing performance, and influencing travel patterns.

In recent years, telemedicine technologies have been increasingly adopted in sports medicine to facilitate real-time communication between athletes and healthcare professionals. Remote consultations and monitoring allow for prompt assessment and personalized treatment plans, impacting injury prevention, diagnosis, and rehabilitation (Willick et al., 2021). Athletes, regardless of geographical location can access specialized medical expertise, contributing to the democratization of healthcare services in sports. The utilization of telemedicine in sports medicine is not only limited to injury management but extends to athlete wellness and performance optimization. Wearable devices, such as smartwatches and sensors, enable continuous monitoring of physiological metrics, providing valuable data for healthcare providers to tailor interventions and training regimens (Benedict et al., 2017).

The integration of telemedicine in sports has notable implications for sports-related tourism. Athletes and sports enthusiasts, who frequently engage in travel for competitions, training camps, and events, benefit from the flexibility and accessibility offered by telemedicine. Virtual consultations and remote monitoring reduce the need for physical presence, offering a convenient and efficient means of healthcare delivery for athletes on the move (Smith et al.,

2018; Anderson, 2021). Moreover, technological advances in telemedicine contribute to the evolution of sports tourism experiences. Virtual sports events, telerehabilitation programmes, and destination-specific health and wellness packages are emerging trends that cater to the preferences of modern travelers seeking a harmonious blend of sports, leisure, and healthcare (Brouder et al., 2021).

The positive effects that exercise has on mental well-being such as anxiety and depression is only now coming to the attention of mental health practitioners. There are enough evidences now to support the claim that exercise is related to positive mental health as indicated by relief in symptoms of depression and anxiety (Ajayi, Abayomi, and Ojo, 2013). Tourism can contribute to tourist wellbeing; and wellbeing has social and economic value, underpinning healthcare and health insurance. In particular, tourism takes people to parks and nature destinations, where contact with nature can improve their mental health.

Unlocking the full potential of these technologies and addressing the complex challenges that come with their integration requires an understanding of the complicated interplay between them. With a focus on sports organizations, policymakers, healthcare providers, and tourism industry stakeholders, this review seeks to offer a thorough understanding of these synergies while assisting them in navigating the rapidly changing landscape of technology integration in these vital industries.

### **Relationship Between Technological Advances and Telemedicine**

Technological advances have significantly transformed the healthcare landscape, with telemedicine emerging as a powerful application that leverages digital technologies to provide remote medical services. Telemedicine encompasses various modalities, including real-time video consultations, remote monitoring, and digital communication tools (Bashshur et al., 2016). The evolution of telemedicine has been closely tied to advancements in information technology and communication systems. Early telemedicine applications primarily involved telephone consultations, but with the advent of the Internet, more sophisticated platforms emerged, enabling richer interactions between healthcare providers and patients (Dorsey et al., 2017).

Modern telemedicine heavily relies on digital platforms, ensuring seamless connectivity between patients and healthcare professionals. Video conferencing technologies, secure messaging systems, and integrated health platforms enable a diverse range of medical services to be delivered remotely (Dorsey et al., 2017; Powell et al., 2017). The rise of mobile health (mHealth) technologies and wearable devices has further expanded the reach and capabilities of telemedicine. Smartphones and wearable sensors enable continuous monitoring of vital signs, facilitating remote patient management and enhancing the potential for preventive care (Wilhide III et al., 2018; Steinhubl et al., 2015).

Artificial intelligence (AI) is playing an increasingly vital role in telemedicine, offering capabilities such as image analysis, natural language processing, and predictive analytics. AI-driven tools enhance diagnostic accuracy, automate routine tasks, and enable more personalized and efficient healthcare delivery (Topol, 2019; Mehrotra et al., 2018). Technological advances in virtual reality (VR) and augmented reality (AR) are also influencing telemedicine. These immersive technologies contribute to enhanced telepresence, allowing healthcare providers to remotely guide procedures, facilitate medical education, and improve patient engagement (Iyawa et al., 2020; Kyaw et al., 2019).

Despite the numerous benefits, the integration of technological advances in telemedicine is not without challenges. Issues related to data security, regulatory frameworks, and disparities

in access to technology must be addressed to ensure the widespread and equitable adoption of telemedicine (Latifi et al., 2019; Bashshur et al., 2016). Telemedicine's success relies on strong governmental policies, rules, and protocols. However, weak regulatory frameworks and a lack of uniform policies in developing countries lead to confusion in designing services and implementation (Chinye-Nwoko & Momodu, 2021). Additionally, there is a lack of established international frameworks and an understanding of uniform standards for telemedicine practices.

### **Relationship between Technological Advances and Sports**

Technological advances have revolutionized the landscape of sports, contributing to enhanced athlete performance, training methodologies, and spectator experiences. From wearables to data analytics, these innovations have permeated various facets of the sports ecosystem, shaping how athletes train, compete, and recover. Wearable devices, such as fitness trackers and smartwatches, have become ubiquitous in sports. These technologies provide real-time data on athletes' physiological parameters, including heart rate, distance covered, and sleep patterns (Borgonovo et al., 2019). Athletes and coaches utilize this information to tailor training regimens, monitor fatigue, and optimize performance.

Advancements in motion capture and biomechanical analysis have provided unprecedented insights into athletes' movements. High-speed cameras, inertial sensors, and 3D motion analysis systems enable a detailed assessment of technique, gait, and posture. This information aids in refining athletic skills, preventing injuries, and optimizing training methodologies (Leardini et al., 2019). Big data analytics play a pivotal role in sports, providing comprehensive insights into team and player performance. Coaches and analysts use advanced statistical models to assess strategic decisions, game patterns, and player contributions. Predictive analytics also aid in injury prevention and recovery planning (Baca & Dufek, 2017).

Virtual Reality (VR) has found applications in sports training and simulation. Athletes use VR environments to simulate game scenarios, enhance decision-making skills, and visualize complex plays. VR is also utilized in rehabilitation and mental conditioning programs (Triberti et al., 2019). Robotics has made inroads into sports medicine, assisting in rehabilitation and injury recovery. Robotic exoskeletons and prosthetics aid athletes with mobility impairments, while robotic-assisted surgeries contribute to faster recovery times for sports-related injuries (Mooney et al., 2018).

### **Relationship Between Technological Advances and Tourism**

Technological advances have played a transformative role in the tourism industry, reshaping how individuals plan, experience, and share their travel journeys. From online booking platforms to immersive virtual experiences, technology has become an integral part of the tourism ecosystem, influencing various aspects of the traveler's journey.

Technological advances have revolutionized the way people book travel-related services. Online booking platforms, such as Expedia, Booking.com, and Airbnb, have simplified the reservation process for accommodations, flights, and activities, providing travelers with a convenient and efficient way to plan their trips (Xiang & Du, 2017). The widespread adoption of smartphones has given rise to a plethora of travel applications that cater for various travellers need. Mobile apps provide real-time information, navigation assistance, language translation, and personalized recommendations, enhancing the overall travel experience (Gretzel et al., 2015).

Augmented reality (AR) and virtual reality (VR) technologies have introduced new dimensions to the tourism experience. AR applications offer enhanced information and

interactive overlays on physical landscapes, while VR enables virtual tours and immersive experiences, allowing travelers to explore destinations from the comfort of their homes (Wang et al., 2019). Social media platforms have become influential tools in shaping travel decisions. User-generated content on platforms like Instagram, TripAdvisor, and Yelp allows travelers to share their experiences, recommendations, and reviews, influencing the choices of prospective travellers (Litvin et al., 2018). The use of big data analytics enables the tourism industry to gather and analyze vast amounts of information about travellers preferences. This data-driven approach facilitates personalized marketing, tailored recommendations, and improved customer satisfaction (Xiang et al., 2017). Blockchain technology is increasingly being explored for its potential applications in enhancing transparency and security in the tourism sector. It can be used for secure transactions, identity verification, and the creation of smart contracts, addressing concerns related to fraud and data privacy (Leng et al., 2020).

Healthcare providers face challenges due to inadequate infrastructure, including limited internet connectivity, power supply, and specialized medical tools. Technological know-how is crucial for successful telemedicine services, but resistance to change is hindered by rigid organizational structures, skilled professionals, and complicated change management systems (Obikunle, 2020).

### **Challenges of Technological Advances and Sports**

While technological advances in sports have brought about numerous benefits, they also come with a set of challenges that need to be addressed. Addressing these challenges requires a comprehensive and thoughtful approach that considers ethical, social, and practical aspects. Striking a balance between technological integration and preserving the core values of sports is essential for ensuring a positive impact on athletes, teams, and the sports community as a whole (Ogunleye, Ajala and Ajayi, 2023). Here are some key challenges associated with the integration of technology in sports:

1. **Cost Implications:** The acquisition and maintenance of advanced sports technology, such as biomechanics labs, wearable devices, and high-tech training facilities, can be expensive. This may create disparities between well-funded teams, athletes and those with limited financial resources.
2. **Ethical and Privacy Concerns:** Collecting and using personal and biometric data raises ethical and privacy concerns. Athletes may be hesitant to share sensitive information, and there's a risk of unauthorized access or misuse of data.
3. **Data Overload:** The abundance of data generated by wearable devices and sensors can be overwhelming for athletes and coaches. It may lead to information paralysis, making it challenging to extract meaningful insights and affecting decision-making.
4. **Dependency and Overreliance:** Athletes and teams may become overly dependent on technology for performance improvement. Overreliance may neglect the importance of fundamental skills, intuition, and the human element in sports.
5. **Resistance to Change:** Coaches, athletes, and traditional sports systems may resist adopting new technologies due to unfamiliarity or skepticism. This resistance can hinder the effective implementation of technological advancements in sports.
6. **Injury Risks:** The introduction of new training techniques and equipment can pose injury risks if not properly calibrated or used without proper supervision. Athletes may be exposed to injuries related to overtraining or improper use of technology.

7. **Standardization and Regulation:** Lack of standardized protocols and regulations for certain technologies in sports. Inconsistent use and interpretation of data can lead to unfair advantages or disadvantages among competitors.
8. **Accessibility and Inclusivity:** Not all athletes or teams may have equal access to cutting-edge technology. This could perpetuate inequalities, particularly in grassroots sports and less affluent sporting communities.
9. **Fan Experience and Commercialization:** The increased focus on technology may change the traditional fan experience. The commercialization of sports through technology could potentially alienate fans or alter the fundamental nature of certain sports.
10. **Technical Challenges:** Technical glitches and malfunctions in equipment and systems can disrupt training sessions or competitions, leading to frustration and potential performance setbacks.

### **Telemedicine Application in Africa**

Telehealth gained popularity in Africa in the 1980s as a solution to healthcare issues. Ethiopia, Sudan, Ghana, Nigeria, and Gambia participated in the HealthNet project. Other countries have implemented telehealth systems in international medicine, tele-pediatrics, dermatology, obstetrics, gynecology, and e-learning. Tanzania introduced tele-pediatrics, South Africa and Mozambique used telehealth for distance learning, and Botswana announced projects in 2017.

Telemedicine can provide access to scarce specialist care, improve the quality of care in rural areas, and reduce the need for rural patients to travel to seek medical attention. For this cause, it has risen to fill the gaps created by the inadequacies of the healthcare system in different parts of the world. It is known that more than 400 Million people live on the continent with limited access to healthcare facilities and predominantly reside in rural areas (Dodoo, Al-Samarraie and Alsswey, 2022). Some telemedicine services available in Africa include neonatal care; maternal and child healthcare, intensive care services, trauma care, occupational healthcare, especially for farmers and factory workers, mental health services, geriatric medicine, nutritional health, radiological services, and e-pharmacy services.

In Africa, Telehealth served as a viable answer to these problems (Mars, 2010). Despite the restrictive policies in place, Nigeria implemented telepsychiatry to provide mental health information and enhance access to mental health care. This helped reduce the backlog of consultations by leveraging the sparse mental health services in Nigeria. A virtual online training program in Kenya gave the country's few mental health practitioners the chance to obtain training in psychological first aid so they could effectively support people during lockdowns and beyond (Adepoju, 2020).

### **Telemedicine and Sports Rehabilitation**

The integration of telemedicine in sports rehabilitation offers numerous benefits, making it a promising approach for athletes recovering from injuries or undergoing rehabilitation. Here are some key aspects of the synergy between telemedicine and sports rehabilitation:

1. **Remote Consultations and Monitoring:** Athletes can consult with medical experts remotely through telemedicine, which makes it possible to have prompt conversations regarding the status of injuries, treatment options, and rehabilitation exercises.

2. **Access to Specialized Care:** Regardless of the location they live, athletes can get in touch with specialists in sports medicine and rehabilitation. Athletes who live in rural locations or have limited access to specialized healthcare services would specifically benefit from this.
3. **Home-Based Rehabilitation Programmes:** Healthcare professionals can create individualized rehabilitation plans via telemedicine that are specific to the demands and circumstances of athletes. After that, athletes can work out at home under the supervision of experts who are monitoring them from a distance. Better recovery results are facilitated by athletes adhering to their rehabilitation plans through virtual follow-up sessions.
4. **Time and Cost Efficiency:** Athletes can save time and avoid logistical difficulties by using telemedicine to replace the requirement for them to visit medical facilities for every consultation. A greater number of people can get sports rehabilitation due to remote consultations, which can be more affordable for healthcare systems and athletes alike.

## Conclusions

Technological advances continue to shape and redefine the landscape of telemedicine, offering innovative solutions for remote healthcare delivery. From digital platforms and mobile health technologies to artificial intelligence and immersive experiences, these advancements hold great promise for improving patient outcomes, increasing access to care, and transforming the way healthcare is delivered and experienced. Technological advances continue to shape the landscape of sports, offering new dimensions in performance enhancement, injury prevention, and fan engagement. The integration of wearables, biomechanics, data analytics, virtual reality, and robotics reflects a dynamic relationship between technology and sports, fostering innovation and pushing the boundaries of athletic achievement.

These advancements not only benefit elite athletes but also contribute to democratizing sports science, making data-driven insights accessible to athletes at various levels of proficiency. As technology continues to evolve, its role in sports will likely expand, presenting exciting opportunities for further innovation and advancement in the field. Technological advances continue to shape the tourism industry, offering new possibilities for travelers, businesses, and destination management. From the convenience of online bookings to the immersive experiences facilitated by AR and VR, technology has become a catalyst for innovation, enhancing the overall tourism experience. As the industry continues to evolve, a balance between technological integration and preserving the authenticity of travel experiences will be crucial for sustainable and inclusive tourism development. More so, telemedicine is a promising solution for improving healthcare services in Africa, and if Health Management Organizations, National Health Insurance Schemes, and government insurance services incorporate it into their health plans, it will become widespread.

## References

- Adebisi, A. (2021). Telemedicine: The untapped goldmine in Nigeria's healthcare system. Nigeria: Sydani Initiative for international development.
- Adepoju P. (2020). Africa turns to telemedicine to close mental health gap. *Lancet Digit Health* 2(11): e571–e572.

- Ajayi, O. A., Abayomi, A. O. and Ojo, O. R. (2013). Promotion of aerobic dance exercise for people with mental health problems. *Journal of Nigeria Association of Sports Science & Medicine* 14:138-143.
- Baca, A., & Dufek, J. S. (2017). Portable Force Platforms and Gait Analysis: Applications and Considerations in Biomechanics Research. *Gait & Posture*, 36(1), 1–5.
- Bashshur, R. L., Shannon, G. W., & Bashshur, N. (2016). The Empirical Evidence for Telemedicine Interventions in Mental Disorders. *Telemedicine and e-Health*, 22(2), 87–113.
- Benedict, R. H., Deluca, J., Philips, G., LaRocca, N., Hudson, L. D., & Rudick, R. (2017). Validity of the Symbol Digit Modalities Test as a cognition performance outcome measure for multiple sclerosis. *Multiple Sclerosis Outcome Assessments Consortium* 23(5):721-733. doi: 10.1177/1352458517690821.
- Borgonovo, S., Gatti, N., Gazziro, M., & Noè, C. (2019). Wearable Technologies in Sport: A Systematic Review. *European Journal of Sport Science*, 19(7), 1–16.
- Brodeur, A., Clark, A. E., Fleche, S. and Powdthavee, N. (2021). COVID-19, lockdowns and well-being: Evidence from Google Trends, 193 <https://doi.org/10.1016/j.jpubeco.2020.104346>. ISSN 0047-2727
- Chinye-Nwoko, F. & Momodu, N. (2021). Telemedicine is a quick cure for Africa’s healthcare ailments. South Africa: Mail & Guardian.
- Dodoo, J. E. Al-Samarraie, H. and Alsswey, A. (2022). The development of telemedicine programs in sub-Saharan Africa: progress and associated challenges. *Health Technology* 12(1):33–46.
- Dorsey, E. R., Topol, E. J., & State, M. W. (2017). Telemedicine 2017: I.T. Issues Expand Patient Access and Clinical Possibilities. *Annual Review of Medicine*, 68, 307–315.
- Gbolahan, O., Kokori, E., Osaghae, O., Doynsola, Z. and Olaogun, T. (2023). Telehealth in Africa: evolution and transformative impact before, during and after COVID-19: A narrative review. *Journal of Global Health Science* 5(2):e14. <https://doi.org/10.35500/jghs.2023.5.e14>
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart Tourism: Foundations and Developments. *Electronic Markets*, 25(3), 179–188.
- Iyawa, G. E., Herselman, M. E., & Botha, A. (2020). The Application of Virtual Reality in Medical Groups. *Computers in Biology and Medicine*, 120, 103672.
- Jaguga F. and Kwobah E. (2020). Mental health response to the COVID-19 pandemic in Kenya: a review. *International Journal of Mental Health System* 14(1):68.
- Kyaw, B. M., Saxena, N., Posadzki, P., Vseteckova, J., Nikolaou, C. K., George, P. P., ... & Car, J. (2019). Virtual Reality for Health Professions Education: Systematic Review and Meta-Analysis by the Digital Health Education Collaboration. *Journal of Medical Internet Research*, 21(1), e12959.
- Latifi, R., Doarn, C. R., Poropatich, R. K., Hadeed, G. J., & Weinstein, R. S. (2019). Telemedicine in the United States and Global Health System. *Telemedicine and e-Health*, 25(6), 421–424.
- Leardini, A., Chiari, L., Della Croce, U. & Cappozzo, A. (2019). Human Movement Analysis Using Stereophotogrammetry: Part 3. Soft Tissue Artifact Assessment and Compensation. *Gait & Posture*, 29(1), 50–59.
- Leng, P., Yang, K., Zhang, D. & Wang, D. (2020). Blockchain in Tourism: A Critical Literature Review and Implications. *Tourism Management*, 81, 104164.

- Litvin, S. W., Goldsmith, R. E. & Pan, B. (2018). Electronic Word-of-Mouth in Hospitality and Tourism Management. *Tourism Management*, 66, 166–176.
- Mars M. (2010). Health capacity development through telemedicine in Africa. *Yearb Medical Inform.* 19(01):87–93.
- Mehrotra, A., Ray, K., Brockmeyer, D. M. & Barnett, M. L. (2018). Rapidly Converting to “Virtual Practices”: Outpatient Care in the Era of Covid-19. *NEJM Catalyst Innovations in Care Delivery*, 1(3).
- Mooney, J. A., Zhang, J., Klassen, A. B., Leonessa, A. & Krebs, H. I. (2018). Robot-Assisted Rehabilitation of Ankle Plantar Flexors Spasticity: A 3-Month Study with Proprioceptive Neuromuscular Facilitation. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 26(4), 925–933.
- Obikunle, F. (2020). Successes, challenges of telemedicine adoption in Nigeria clinical settings. Nigeria: The Guardian.
- Ogunleye, O. R., Ajala, R. B. & Ajayi, O. A. (2023). Technological Challenges among Human Kinetics Distance Learning Students of Nigerian Universities: An Analysis of Academic Coping Strategies. *Zamfara International Journal of Education*, 3(3).
- Powell, R. E., Henstenburg, J. M., Cooper, G., Hollander, J. E., Rising, K. L. & Ashanti, M. (2017). Patient Perceptions of Telehealth Primary Care Video Visits. *Annals of Family Medicine*, 15(3), 225–229.
- Steinhubl, S. R., Muse, E. D., & Topol, E. J. (2015). Can Mobile Health Technologies Transform Health Care? *JAMA*, 314(12), 1235–1236.
- Topol, E. (2019). *Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again*. Basic Books.
- Triberti, S., Repetto, C. & Riva, G. (2019). Psychological Factors Influencing the Effectiveness of Virtual Reality-Based Analgesia: A Systematic Review. *Cyberpsychology, Behavior, and Social Networking*, 22(2), 81–94.
- Wang, D., Li, X. R., Li, Y., & Huang, D. (2019). The Effects of Virtual Reality on Consumer Learning: An Empirical Investigation. *Computers in Human Behavior*, 100, 105–116.
- Wilhide III, C. C., Peeples, M. M., Anthony, K. K., & Cashion, M. (2018). The Current State of Telehealth Use for Type 1 Diabetes Management in Adolescents and Young Adults: An Integrated Review. *Diabetes Spectrum*, 31(3), 279–287.
- Willick, S. E., Ehn, M., Teramoto, M., Klatt, J. W. B., Finnoff, J. T., Saad, K. and Cushman, D. M. (2021). The NICA Mountain Biking Injury Surveillance System: 40,000 Student-Athlete-Years of Data. *Current Sports Medicine Report* 20(6): 291–297.
- Xiang, Z., & Du, Q. (2017). From Brick-and-Mortar to Click-and-Mortar: A Review of the Online-Offline-Online Shopping Model. *Tourism Management*, 58, 51–65.
- Xiang, Z., Du, Q., Ma, Y., & Fan, W. (2017). A Comparative Analysis of Major Online Review Platforms: Implications for Social Media Analytics in Hospitality and Tourism. *Tourism Management*, 58, 51–65.

# LIFESTYLE CHARACTERISTICS ASSOCIATED WITH FIBROID TUMOR

**Oluwayemisi A. Makinde**

Department of Human Kinetics & Health Education, Faculty of Education

National Open University of Nigeria

omakinde@noun.edu.ng, 08023040419

## **Abstract**

*This study investigated the lifestyle characteristics associated with fibroid tumor. The descriptive epidemiological approach utilizing the case-control epidemiological study design was used for the study. Purposive Sampling technique was used to select 400 consenting women respondents (200 cases with fibroid and 200 control group, non-fibroid) out of the 3,374 in and out patients of the gynaecology unit of the Aminu Kano Teaching Hospital, Kano and Gwarinpa General Hospital Abuja, FCT within five months. A self-developed questionnaire, validated by experts was used and a reliability coefficient of 0.75 was obtained using the test-retest reliability method. Chi-square was used to test the formulated hypotheses at 0.05 level of significance. The findings revealed that lifestyle characteristics (physical activities and dietary pattern) significantly influence the development of fibroid tumor in this study. Blood pressure, alcohol and tobacco were not significant variables influencing the development of fibroid tumor. It was recommended that women engage in physical activities, eat healthy and take medical check-ups seriously.*

**Keywords:** Lifestyle characteristics, fibroid tumor, physical activities, sedentary, obesity

## **Introduction**

Uterine fibroids are benign smooth non-cancerous tumors of the uterus which affects many women of reproductive age. It is reported to be the most common gynecologic tumor affecting premenopausal women, and often associated with considerable morbidity. They occur in about thirty to eighty percent (30% to 80%) of women in their reproductive age depending on location, and race (Baird, Dunson & Hill, 2003). Fibroids also known as myoma or leiomyoma, are the most common benign tumors that develop in the smooth muscular walls of the uterus and are common in women of African origin (Yakassai, Abubakar, Ibrahim & Bappa, 2011). These abnormal growths can interfere with pregnancy, fertility, sex life, the woman's health and quality of life in general. The uterus otherwise called the womb is a hollow, muscular pear-shaped organ located in a woman's lower abdomen and usually serve as the first environment.

Many women who have fibroids don't have any symptoms (Barjon & Mikhail, 2023; Sefah et al. 2023) and for the symptomatic, uterine fibroid can go undiagnosed for years prior to symptom occurrence. This may be the reason most women with fibroid carry this condition for long before being diagnosed. This could also be as a result of variation in size; some tumors are so small that they are undetected by means of physical examination. It is also less invasive and less expensive than other types of diagnostic imaging. They may not cause similar problems or grow at similar rates, complicating conclusions about tumor characteristics and clinical outcomes. In those that do have symptoms, they can be influenced by the location, size and number of tumors. The number of uterine fibroid tumor present in one uterus can range from one single fibroid tumor to as many as 20 or more.

Uterine fibroids are the principal cause for heavy menstrual bleeding which could lead to anemia, absence from work, hospitalization, several reproductive problems such as hysterectomy, myomectomy, pregnancy loss, pelvic pressure, pressure on bladder, abdominal pains, uterine adhesions and semen spilling return. It is a widely held view that the problems associated with fibroid condition range from miscarriages, psychological trauma, poor sexual life, embarrassing situations of unexpected heavy menstrual flows to acute medical complications. Worthy to note is the fact that this condition is also a socio-economic burden affecting the quality of life of women.

Recent developments in the misconception of fibroid tumor, have led to herbalists and other spiritualists capitalizing on the prevalence of the condition to rip off women and families desirous of getting out of the problem. This has heightened the need for thorough knowledge and better appreciation on the part of the public by health educators, health workers, nurses and medical practitioners. The incidence of uterine fibroid increases with age, by age 50 years, up to 65% of women have uterine fibroids (Lawan, Yaro, Rabiou & Emmanuel, 2019). World Health Organization, WHO (2010) reported that fibroid affect between 20- 25% of women worldwide. Approximately 1 in 4 women have uterine fibroids that come to clinical attention (Terry, et al. 2007), and at least 1 in 4 women develop one or more fibroids in her lifetime (Khan, Shehmar & Gupta, 2014; Ross, 2017). Also worrisome is the fact that presently, younger ladies, girls are getting diagnosed with this condition. According to the Agency for Healthcare Research and Quality, AHRQ (2016), an estimated 26 million women between ages of 15 and 50 have uterine fibroid. A number of studies have shown that black women have fibroid at younger ages and have more hysterectomies and myomectomies at earlier ages than white women (Yakassai, Abubakar, Ibrahim & Bappa, 2011; Adegbesan-Omilabu, Okunade & Gbadegesin, 2014).

The mechanism of obesity development is not fully understood, there is supporting evidence that unhealthy eating habits such as, excessive sugar and high fat intake, increased portion sizes, coupled with physical inactivity have been playing major roles in the rising rates (Farhud, 2015; Krzyzanowski, Paszkowski & Wozniak, 2023). It was also revealed that ovarian hormones, estrogen and progesterone have been stated to aid in the promotion of the growth of fibroid and they also have a strong linkage with obesity (Ford, 2015). Flake, Andersen and Dixon, (2003) reported an association between an elevated BMI or obesity and the presence of uterine fibroid particularly in the United States. Hence, the body mass index and the waist-to-hip-ratio are methods that will be used in this study to assess if subjects are overweight or obese.

According to research by Harvard Medical School and School of Public Health, there is a strong and independent association between blood pressure and risk for fibroids in premenopausal women (Medscape Cardiology, 2005). Their findings indicate that hypertensive women were 24% more likely to report fibroids compared with non-hypertensive women. Another research showed that uterine fibroid was more frequent among hypertensive (42%) than non-hypertensive (37%) women (Luoto, Rutanen & Auvinen, 2001). Engaging in regular physical activity has its potential benefit of weight control, bone and muscle strengthening, reduced risk of cardiovascular diseases, some form of cancers and other diseases.

The study of Baird, David, Michael, Cousins and Joel (2006) on the association of physical activity with development of uterine leiomyoma, found that when looking at the factors that correlate to incidence of fibroid and trying to understand what preventive steps to take, exercise seems like a logical factor to explore for two main reasons; firstly, being overweight increases risk of developing fibroids, so a woman can reduce her risk by maintaining a healthy weight through exercise. Secondly, fibroid development and growth is a hormonal condition with

estrogen and progesterone playing a major role in the regulation of women's menstrual cycle. This is why fibroid may stop growing during menopause, because the body no longer produces large amounts of these hormones. Physical activities and exercise have been shown to reduce the amount of these circulating hormones (Ennour- Idrissi, Maunsell & Dioro, 2015).

Making healthy lifestyle choices, such as eating the right diet, eating fruits and vegetables, may play a role in reducing the risk of fibroid. Lifestyle characteristics such as dietary pattern, level of physical activity, smoking and alcohol consumption, have been linked by various studies to the development and growth of fibroid tumor (Ford, 2015; Farhud, 2015). In the same vein, World Health Organization, WHO (2004), posits that 60% of factors related to individual's health and quality of life are correlated to lifestyle.

Uterine fibroids may present symptoms which vary in severity, such as excessive menstrual bleeding, dysmenorrhea and inter-menstrual bleeding. Other symptoms include chronic pelvic pain, increase vaginal discharge, pain during intercourse, enlarged midridge and pressure symptoms such as sensation of bloatedness, increased urinary frequency and bowel disturbance. In addition, they may compromise reproductive functions, possibly contributing to subfertility, early pregnancy loss, and later pregnancy complications. Complications such as anemia, large uterine size, excessive bleeding could lead to a decision on hysterectomy. Fibroid tumor has become a public health concern, apart from its prevalence, the health, social and marital life of the woman is negatively affected.

The etiology of fibroid tumor is still not clearly understood. Exact data on predisposing factors in fibroid tumors are accumulating worldwide, but a markedly dearth of information about the Nigerian situation is presented and yet the prevalence of fibroid tumor in this country is alarming (Adegbesan-Omilabu, Okunade & Gbadegesin, 2014). What could be responsible for this prevalence among Nigerian women? It is against this backdrop that the researcher conducted this study to find out the lifestyle characteristics associated with the development of fibroid tumor.

### **Research Question**

What lifestyle characteristics are associated with fibroid tumor?

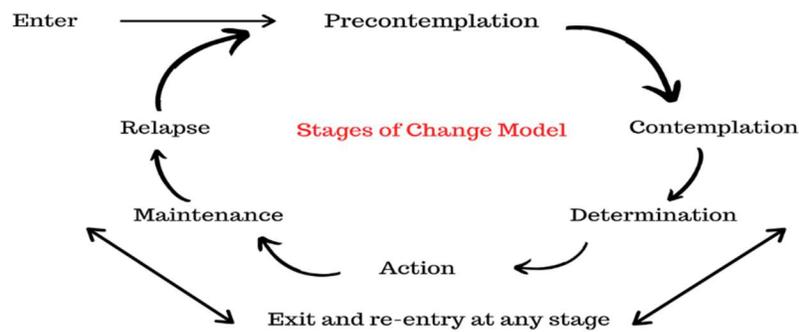
### **Hypotheses**

The following null hypotheses were formulated and tested

- i. Physical activities will have no significant influence on the development of fibroid tumor.
- ii. Dietary pattern will have no significant influence on the development of fibroid tumor.
- iii. Alcohol use has no significant influence on the development of fibroid tumor.
- iv. Fibroid tumor development is not significantly influenced by tobacco usage

### **Theoretical Framework**

The theoretical framework for this study is based on the Transtheoretical Model (TTM). The psychologists, Prochaska and DiClemente developed the transtheoretical model used to describe the process of change from one behaviour to a beneficial one (Prochaska, Redding & Evers, 2002). Transtheoretical model posits that health behaviour change involves progress through six stages of change (Prochaska, 2013). The model construes behaviour changes as an intentional process that unfolds over time and involves progress through these series of six stages of change: pre-contemplation, contemplation, preparation, action, maintenance, and termination.



**Figure 1:** Transtheoretical Model (Prochaska, Redding & Evers, 2002).

**Pre-contemplation-** In this stage, people care less about changing a behaviour. Not only are they not thinking about changing, but some may not even see what they are doing (or not doing) as a problem.

People do not intend to take action (in the next six months) because they are often unaware that their behaviour is problematic. Being uninformed about the consequences of one's behaviour may cause a person to be in the pre-contemplation stage. This stage is most likely as a result of women not knowing the factors predisposing them to fibroid tumor, the symptoms and risks involved.

DiClemente presented his reason why people are pre-contemplators. He called it the four R's:

**Reluctance:** Some people lack the knowledge needed to make a change.

1. Rebellion – These group of people are very resistant to making a change.
2. Resignation- People at this stage may have attempted to make a change but resign to defeat in the process.
3. Rationalization – This group can be described as the 'know-it-alls'.

**Contemplation-** During this stage, individuals are well aware that it is time to make a change. This stage takes so much time as the person processes the information or idea and comes to the realization that a change is needed. It is also characterized by chronic contemplation or behavioural procrastination where the Individual may be considering change, but may not take steps towards that direction. At this stage, change is expected in the next six months. Uterine fibroid can be asymptomatic, knowing the symptoms can enable women understand the condition so as to get early diagnosis, before it becomes life threatening. It is important to identify reasons for change/ risk of not changing basically to strengthen patient's self-efficacy for change of current behavior. A patient with severe anemia as a result of uterine fibroid should be informed of the risk of alcohol and tobacco consumption. Lastly, the researcher's information will increase the patient's confidence in their ability to change.

**Preparation-** At this point, individuals are ready to commit to a change in their behaviour. They are no longer in a stage of denial and are willing to take steps necessary to correct their problem. Women who are knowledgeable about susceptibility to uterine fibroid growth are prompt to adopt healthier behaviors. It is also a time of determination. Women will make up their mind by controlling certain tendencies. For example, controlling diet and taking part in physical activities. The patient can be helped through mentoring; with set out specific goals and develop an action plan and practical support. Training sessions on physical fitness can be held to help in weight loss and other behavioural lifestyle pattern that needs to be improved on to minimize the impact of fibroid predisposing factors. Further change in behavior entails patients making healthy food choices, avoiding junk food, smoking and alcohol consumption.

**Action-** In this stage, the individual has enough willpower to take on the task of modifying his/her behaviour. They actively do whatever it takes to make the change. This process can vary with time. Some people can take one hour, while some may take six months to effectively quit their old behaviour or change it. This variation in time depends on the strength of their willpower to change. Lifestyle affects women's anthropometric characteristics. Overeating for instance can affect weight, and excessive weight can lead to increased Body Mass Index (BMI). A high BMI, tending towards obesity could be a predisposing factor to fibroid growth and therefore life threatening. It complicates the fibroid condition. At this point, the individual understands the risks involved and is ready to make amends. It is the responsibility of the researcher to encourage the patient at this action stage. The patients will be helped to stick to their plan. Their diet, activity level and other adopted health behavior will be monitored and rewards will be provided for the completion of the change pattern.

**Maintenance-** In this stage, the individual has sustained their behaviour change for a while (defined as more than 6 months) and intend to maintain the behaviour change going forward. Maintenance is the stage in which people have made overt modifications in lifestyles and are working to prevent relapse; however, they do not apply change processes as frequently as people in the action stage. At this point, there must be conscious effort to maintain the healthy life style the woman has attained as a result of the behaviour change. The researcher will help the patients to identify strategies to prevent relapse, discuss possible obstacles that could prevent lifestyle modification (e.g. procrastination and laziness) and continues to provide support and positive reinforcement to ensure the patient sustains the behaviour until integrated into lifestyle.

**Relapse-** This stage is usually not considered in health promotion programmes. It is the stage where people have no desire to return to their unhealthy behaviours and are sure they will not relapse. Since this is rarely reached, people tend to stay in the maintenance stage.

### Method of the study

The descriptive epidemiological approach utilizing the case – control epidemiological study designs was used for this study. A case – control design involves diseased participants being carefully studied in conjunction with control participants in order to elucidate the presence or otherwise of illness predisposing. The population of this study comprised all the three thousand three hundred and seventy-four (3,374) in patients and out patients' women attending the obstetrics & gynecology clinic at the Aminu Kano Teaching Hospital, Kano (AKTH) and the Gwarinpa General Hospital, Abuja, Federal Capital Territory, for the period of five months, from February to July, 2021. Distribution of the three thousand three hundred and seventy-four (3,374) patients who attended the obstetrics & gynecology clinic within the period of study in the two institutions is stated below:

**Table 1: Distribution of the Population of in and out patients of the Obstetrics and Gynecology Clinics of the Aminu Kano Teaching Hospital Kano and Gwarinpa General Hospital Abuja from February- July, 2021.**

S/N	NAME OF HOSPITAL	NO OF WOMEN
1.	Aminu Kano Teaching Hospital, Kano	2,232
2.	Gwarinpa General Hospital, Abuja	1,142
3.	<b>TOTAL</b>	<b>3,374</b>

**SOURCE:** Aminu Kano Teaching Hospital, Gynecology Record Unit, 2021, Gwarinpa General Hospital Health Record Unit, 2021 Selection criteria

Cases were eligible to participate if they:

- are between the ages of 20- 50 years
- have been diagnosed as having only one uterine fibroid tumor by a specialist, not pregnant, not lactating at the point of recruitment and should be ambulant accepted written informed consent

Controls were included in the study if they:

- are between the ages of 20 – 50 years
- accepted written informed consent
- have not been diagnosed as having uterine fibroid

The sample for this study consists of four hundred (400) participants, purposively selected by the researcher after doctor's assessment of their present status and having given their consent by filling and signing a consent form to be included in the study. Women made up of one hundred (100) cases, diagnosed with fibroid tumor from the Gwarinpa General Hospital in the FCT and 100 cases from the Aminu Kano Teaching Hospital, Kano and two hundred (200) control group selected from the out-patients attending the Obstetrics and Gynecology unit of the above-named hospitals. Purposive sampling technique was adopted for the study.

The instrument that was used for this study was designed by the researcher after careful review of related literature and the WHO- STEPS instrument (Riley, Guthold & Bonita, 2016; WHO, 2020). The WHO STEPS instrument is a standardised procedure for collecting, analyzing, and disseminating specific data in WHO member countries for non-communicable diseases. It is made-up of core and expanded items. In this study both the core and expanded items were incorporated for use. The instrument assesses bio- data such as age, highest educational level, marital status and work status. Behavioural (lifestyle) measurements in the questionnaire included tobacco use, alcohol consumption, diet and physical activity. WHO- STEPS questionnaire has been reported to be reliable for Nigerian population with a Cronbach alpha of 0.83 suggesting high level of internal consistency (Akindele, Philip, Ehimario & Useh 2014). For the lifestyle characteristics, the physical activity behaviour was first scored in 3 categorical levels of Low physical activity level (1-4), Moderate physical activity level (5-8) and High physical activity level (9-12) before further classification into normal and abnormal category for analysis. In terms of the dietary pattern, the items were scored as follows, not at all (1), a little bit (2), somewhat (3), a great deal (4) and very great deal (5). The total composite score of 60 was derived. Participants that scored below 40 were regarded as having bad dietary pattern while those that scored 41 to 60 were regarded as having good (normal) dietary pattern. Tobacco and alcohol usage were scored Yes (1) and no (0).

To ensure the instrument measures what it was supposed to measure, content validity of the research instrument (questionnaire) was done by the researchers' two supervisors, two (2) specialists from the Department of Human Kinetic and Sport Science, and two professionals from the Department of Health, Safety and Environmental Education, University of Benin, Benin city, Edo State. Their suggestions and recommendations were incorporated into the final draft before use. The test – retest method of reliability was used to test the reliability of the instrument. The instrument was administered to twenty (20) cases in Modula Clinic and Maternity, Kano and Good Pasture Clinic, Kano, different from the one of the main study. After an interval of two weeks, the same instrument was administered to same group of cases. Scores obtained was subjected to Pearson Product Moment Correlation Coefficient and a coefficient of 0.75 was gotten. This was considered adequate to establish reliability of the instrument. Letters of introduction were obtained from Head of Department, Health, Safety and Environmental

Education, University of Benin, Benin city by the researcher. These letters stated the purpose and benefits of the research. This was required to obtain provisional ethical clearance from the Federal Capital Territory Health Research Ethics Committee, the Kano State Ministry of health and the Aminu Kano Teaching Hospital Ethics Committee. Two (2) nurses in the gynecological unit of both institutions were trained by the researcher as research assistants in the administration of the questionnaire. Data was recorded on Microsoft excel and subsequently exported to Statistical Package for Social Science (SPSS version 22.0). The exported data was analyzed using both descriptive statistics of frequency count, percentage and mean to answer the research question raised and inferential statistics from which the outcome of the study was examined. Chi-square was used to test the formulated four (4) hypotheses at 0.05 level of significance.

### ***Ethical consideration***

At the commencement of the study, ethical approval was sought from the Hospital Management Board, Federal Capital Territory, Health Research Ethics Committee (FHREC/2019/01/90/23-09-19), Department of Health and Human Services (FCTA/HHSS/GGH/GEN/027), Federal Capital Territory Administration (FCTA), the Kano State Hospital Management Board (MOH/OFF/797/II/586) and the Aminu Kano Teaching Hospital Ethics Committee (AKTH/MAC/SUB/12A/P-3/VI/2269). The researcher endeavored to increase the level of psychological satiation with all participants to increase their cooperation and sincerity.

## **Results and Discussion of Findings**

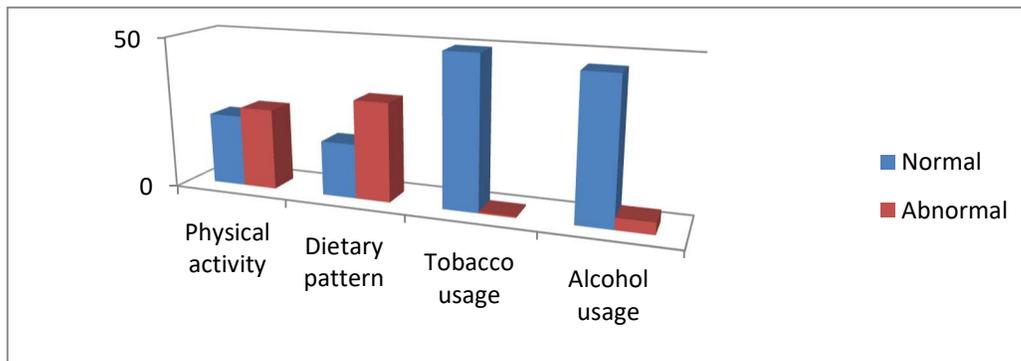
### **Research question one: What are the lifestyle characteristics associated with fibroid tumor?**

**Table 2: Frequency distribution of the lifestyle factors related to fibroid tumor**

S/N	Lifestyle Characteristics	Case Frequency (Percentage)	Control Frequency (Percentage)
1	Physical activity		
	Normal	94(23.5%)	186(46.5%)
	Abnormal	106(26.5%)	14(3.5%)
2	Dietary pattern		
	Normal	71(17.8%)	168 (42.00%)
	Abnormal	129(32.20%)	32 (8.00 %)
3	Tobacco usage		
	Normal	2(0.5%)	2(0.5%)
	Abnormal	198(49.5%)	198(49.5%)
4	Alcohol usage		
	Normal	15(3.80%)	19(4.80%)
	Abnormal	185(46.30%)	181(45.20%)

The Table 2 above shows a cross tabulation revealing the lifestyle characteristics associated with fibroid tumor. The table reveals that for the case group, about 26.5% stated that they had abnormal physical activities rate while 3.50% of the control group had abnormal physical activities rate. About 46.5% of the participants in the control group indicated that they engage in

normal physical activities, while 23.5% of the participants in the case group had normal physical activities rating. This shows that majority of the participants in the control group (46.5%) had a normal physical activity rating in the study. This also explains that the participants in the case group are not as active as they ought to be.



**Figure 2:** Lifestyle characteristics associated with fibroid tumor in the Case group

The above Figure 2 reveals the lifestyle characteristics of the participants in the case group. It can be seen that majority of the respondents in the case group have abnormal physical activity rating (26.5%) and dietary pattern (32.2%). Meanwhile for alcohol and tobacco usage 46.3% and 49.5% of the participants in the case group use alcohol and tobacco respectively in the study.

**Hypothesis testing**

**Hypothesis 1:** There is no significant relationship between physical activities and the development of fibroid tumor.

**Table 3: Chi-square analysis for the influence of physical activity on the development of fibroid tumor**

Group	Normal Fo(Fe)	Abnormal Fo(Fe)	Chi-square	Df	Sig.
Case	94(140.0)	106(60.0)	100.8	1	0.00
Control	186(140.0)	14(60.0)			

Table 3 shows chi-square analysis of the influence of physical activities on fibroid tumor. The table above shows that the calculated chi-square value is 100.8, degree of freedom of 1 and level of significance of 0.00 is less than 0.05 alpha level. Thus, the null hypothesis which states that there is no significant relationship between physical activities and the development of fibroid tumor is rejected. It shows that physical activities significantly influence the development of fibroid tumor. It was observed that majority of the participants, one hundred and six (106) in the case group had abnormal physical activities rating while only fourteen (14) participants in the control group had abnormal physical activities rating. It can be concluded that abnormal physical activities rating is associated with the development of fibroid tumor. This corroborated with the number of participants in the control group with normal physical activities rating in comparison with those in the case group (development of fibroid tumor). Consequently, being physical active reduces the development of fibroid tumor.

**Hypothesis 2:** There is no significant relationship between dietary pattern and the development of fibroid tumor.

**Table 4: Chi-square analysis for the influence of dietary pattern on the development of fibroid tumor**

Group	Normal Fo(Fe)	Abnormal Fo(Fe)	Chi-square	Df	Sig.
Case	71(119.5)	168(119.5)	97.8	1	0.00
Control	129(80.5)	32(80.5)			

The table 4 above shows the independent sample chi-square analysis for the influence of dietary pattern on the development of fibroid tumor. The table reveals a calculated chi-square value of 97.80, degree of freedom of 1 and level of significance of 0.00. Accordingly, the null hypothesis which states that there is no significant relationship between dietary pattern and the development of fibroid tumor is rejected. This shows that dietary pattern does significantly influence the development of fibroid tumor in the study. In view of this, majority of the participants, one hundred and sixty-eight (168) in the case group had abnormal dietary pattern compared to their counterpart in the control group with just thirty-two participants with abnormal dietary pattern. Also, for the normal dietary pattern (eating healthy), the number of participants in the control group (without fibroid tumor development) is higher than the case group (with fibroid tumor development). It can be deduced that abnormal dietary pattern is associated with the development of fibroid tumor in the study.

**Hypothesis 3:** Alcohol use is not significantly related to the development of fibroid tumor.

**Table 5: Chi-square analysis for the influence of alcohol use on the development of fibroid tumor**

Group	Normal Fo(Fe)	Abnormal Fo(Fe)	Chi-square	Df	Sig.
Case	185(183.0)	15(17.0)	0.5	1	0.59
Control	181(183.0)	19(17.0)			

Table 5 reveals the influence of alcohol usage on the development of fibroid tumor. The table reveals a chi-square value of 0.5, degree of freedom of 1, level of significance of 0.59 which is greater than the alpha level of 0.05. Hence, the null hypothesis which state that alcohol usage does not significantly influence the development of fibroid tumor is accepted. This shows that alcohol usage does not significantly influence the development of fibroid tumor. Alcohol usage is not associated with the development of fibroid tumor.

**Hypothesis 4:** Fibroid tumor development is not significantly related to tobacco usage

**Table 6: Chi-square analysis for the influence of tobacco use on the development of fibroid tumor**

Group	Normal Fo(Fe)	Abnormal Fo(Fe)	Chi-square	Df	Sig.
Case	198(198.0)	2(2.0)	0.00	1	1.00
Control	198(198.0)	2(2.0)			

Table 6 reveals the influence of tobacco usage on the development of fibroid tumor. The table reveals a chi-square value of 0.00, degree of freedom of 1, level of significance of 1.00 which is greater than the alpha level of 0.05 (Null hypothesis is accepted). This shows that tobacco usage does not significantly influence the development of fibroid tumor. Tobacco usage does not influence the development of fibroid tumor.

It can therefore be deduced that the lifestyle characteristics of physical activities and dietary pattern do influence the development of fibroid tumor in the study but alcohol and tobacco usage is not associated with the development of fibroid tumor

### **Discussion of Findings**

In the influence of lifestyle characteristics, the variables studied were physical activity, dietary pattern, tobacco usage and alcohol use. It was observed that majority of the participants in the case group had abnormal rating in physical activity and majority of the participants in the control group stated that they engage in proper physical activities. In testing the influence of physical activities on the development of fibroid tumor, it was discovered that physical activities significantly influence the development of fibroid tumor. This shows that the normal physical activity rating reduces the chances of developing fibroid tumor. This agrees with the study of Baird, Dunson, Cousins and Schectman (2007), when they reported that participants in their study who were in the highest category of physical activities were significantly less likely to have fibroid. For the influence of dietary pattern, it was observed that majority of the participants in the control group had good dietary pattern (normal) while the cases had high number of abnormal dietary pattern. It was deduced that there is significant relationship between dietary pattern and the development of fibroid tumor. This shows that dietary pattern does influence the development of fibroid tumor. This is contradicted by the study of Sani, Hasanpour, Jalali, Ebrahim and Mamaghani (2013) when they reported that the mean scores of the two hundred leimiyomato in the case group and two hundred in the control group in term of nutrition were not significantly different. But the findings in this present study corroborated with the study by Peter (2011) when he stated that women's diet can be a contributing factor in developing fibroid tumor.

Alcohol and tobacco usage were not seen as significant variables influencing the development of fibroid tumor in the study. This could be due to the location of the study where most of the inhabitants in Kano State and Abuja avoid the usage of alcohol and tobacco as a result of their religious affiliation. Consequently, it was deduced from the study that lifestyle factors of physical activities and dietary does significantly influence the development of fibroid tumor in the study.

### **Conclusion**

Based on the findings of this study carried out in Kano and Abuja, it can be concluded that both lifestyle characteristics (physical activities and dietary pattern) of the respondents are associated with the development of fibroid tumor.

### **Recommendations**

Following the findings of the study, the following recommendations were made

1. Health education has a major role to play in educating the general public. The aim of health education is to create awareness on the risk of fibroid tumor. In rural areas, where the risk is high, the village, community and religious leaders should be used as the key informants to pass the health message to the public.
2. For fibroid growth to be controlled or prevented, government and non-governmental agencies should organize periodic lectures, workshops, seminars and other enlightenment programs for women and medical practitioners to keep them abreast of current trends of

uterine fibroid and the best approach needed in counselling women on the possible factors that could predispose them to fibroid.

3. Women should be encouraged to regularly embark on regular physical activities like brisk walking, jogging and other forms of physical activities including domestic activities in order to maintain, a normal blood pressure, an ideal weight and good health.
4. Women should be encouraged to take adequate amount of Vitamin D, reduce the intake of red meat and eat healthy.
5. The general public should be encouraged to undergo general checkups on a regular basis.

## References

- Adegbesan-Omilabu, M. A., Okunade, K. S., & Gbadegesin, A. (2014). Knowledge of, perception of, and attitude towards uterine fibroids among women in Lagos, Nigeria. Retrieved from [www.hindawi.com/scientifica](http://www.hindawi.com/scientifica) on March 13<sup>th</sup>, 2018.
- Agency for Health Care Research and Quality (AHRQ). (2016). Management of Uterine Fibroids. U.S. Department of Health & Human Services. Retrieved from <https://effectivehealthcare.ahrq.gov/>.
- Aminu Kano Teaching Hospital Record Unit (2021). *Gynecology records*. Retrieved from Database.
- Babah, O.A., Oluwole, A.A., & Afolabi, B.B. (2014). Effects of obesity on the development of Uterine Leiomyomata: a retrospective study of 169 Women who had myomectomy in southern Nigeria. *Journal of Dental and Medical Sciences*, 13 (3), 74-78.
- Baird, D. D., & Dunson, D. B. & Hill, M.C. (2003). Why is parity protective for uterine fibroids? *Epidemiology*, 2003(14), 247-107.
- Barjon, K. & Mikhail, L.N. (2023). *Uterine Leiomyomata*. National Library of Medicine. Startpears Publishing Ltd.
- Boynton-Jarret, R., Rich – Edwards, J., Maslpeis, S., Missmer, S.A., & Wright, R. (2005). A prospective study of hypertension and risk of uterine leiomyomata. *American Journal of Epidemiology*, 161, (7) 628-638. doi:10.1093/aje/kwi072.
- Ennour-Idrissi, K., Maunsell, M., & Diaro, C., (2015). Effect of physical activity on sex hormones in women: a systemic review and meta-analysis of randomized controlled trials. *Breast Cancer Research*, 1(17),139.
- Eric, K.O., Asante, William, K.A., Jerry, C., Edmund, K.B., Dzefi-Tetty, K., Hewlett, K.V. & Addo, P., (2012). Relationship between obesity and leiomyomas among Ghanaian women. *Journal of Medical and Applied Biosciences*, 4 (2012),14- 25. Retrieved from [www.cenresin.pub.org](http://www.cenresin.pub.org).
- Farhud, D. D. (2015). Impact of lifestyle on health. *Iranian Journal of Public Health*, 44 (11), 1442- 1444.
- Flake, G., Anderson, J., & Dixon, D. (2003). Etiology and pathogenesis of uterine leiomyoma: A review. *Environmental Health Perspectives*, 111(8), 1037-1054.
- Gwarinpa General Hospital Health Record Unit (2021). *Health Records*. Retrieved from Database.
- Khan, A. T., Shehmar, M. & Gupta, J. K. (2014). Uterine fibroids: Current perspectives. *International Journal of Women Health*, 6 (6), 95- 114. Retrieved from doi:10.2147/JWH/S 51083. On Jan 29.
- Krzyzanowski, J. I., Paszkowski, T. & Wozniak, (2023). The role of nutrition in pathogenesis of uterine fibroid. *MDI journa*, 1 15 (23) 10.33/of life. 90/nu15234984.

- Lawan, Y. Yaro, I.B, Rabi, A. & Emmanuel, R. (2019). Prevalence and sonographic patterns of uterine fibroids in Northern Nigeria. *New Nigeria Journal of Clinical Research* (8) (13), 24 – 29.
- Luoto, R., Rutanen, E.M, & Auvinen, A. (2001). Fibroids and hypertension. A cross-sectional and study of women undergoing hysterectomy. *Journal of Reproductive Medicine*, 46(4), 359-64.
- Medscape Cardiology (MC), (2005). Hypertension associated with presence of fibroids in premenopausal women. Further results and implications of published and ongoing clinical trials, *Medscape Cardiology*, 9(1). Retrieved from [www.medscape.org](http://www.medscape.org) on 20<sup>th</sup> June, 2005.
- Opare-Addo, H.S., Owiredu, W.K. & Dapilah, T. (2012). Anthropometric measures and the risk of developing leiomyoma in Ghana. *Obstetrics and Gynaecology*3(10) 1- 15. Retrieved from [Webmedcentral.wmc003752](http://Webmedcentral.wmc003752).
- Peter, K. (2011). *Fibroids*. New York, New York University Publishers.
- Prochaska, J.O., Redding, C.A., & Evers.K. (2002). *The Trans theoretical model stages of change*. In K. Glanz, B.K., Rimer & F.M Leri (Eds), Health behavior and health education: theory's research, and practice (3<sup>rd</sup> Ed). San Francisco, CA: Jossey-Bass inc.
- Prochaska, J. O. (2013). Applying the stages of change. *Psychotherapy in Australia*. 19 (2) <https://pdfs.semanticscholar.org>.
- Reis, F.M. & Ciarmela, P. (2013). Uterine fibroids: Pathogenesis and interactions with endometrium and endomyometrial junction. *Obstetrics and Gynecology International* 2013, Article ID 173184, 3-11.
- Riley, L., Guthold, R. & Bonita, R. (2016). The World Health Organization step wise approach to non-communicable diseases risk factor surveillance: methods, challenges and opportunities. 106 (1): 74- 78.
- Ross, R. (2017). Uterine Fibroids: symptoms, diagnosis and treatment. *Live science*. Retrieved from [www.livescience.com](http://www.livescience.com) on 2<sup>nd</sup> June 2017.
- Sani, S., Hasanpour, S., Jalali, S., Ebrahim, M. & Mamaghani, M.E. (2013). Leiomyoma and nutrition of case-control Study. *International Journal of Women's Health and Reproduction Sciences*,1(1), 174-186.
- Sefah, N., Prince, L., Agbleke, M., Thompson, H., Agbleke, A. A., Ndebele, S., Korasare, E., Nkansah, A. & Al-Hendy, A. (2023). Uterine Fibroid- Causes, impact, treatment and lens to the African perspective. *Obstetric and Pediatric Pharmacology*,13: <https://doi.org/10.3389/phar.2022>.
- Terry, K. L., De Vivo, I., Hankinson, S. E., Spiegelman, D., Wise, L. A., & Missmer, S. A. (2007). Anthropometric characteristics and risk of uterine leiomyoma. *Epidemiology*, 18 (6), 758- 763.
- World Health Organization (WHO) (2010) Obesity: Preventing and Managing the global epidemic, report of a WHO consultation. WHO technical report series 894, Geneva. Retrieved from [www.who.int](http://www.who.int).
- World Health Organization (WHO) (2020). Non-Communicable Diseases and their risk factors STEPwise approach to surveillance (STEPS) <http://www.who.int/ncds/surveillance/steps>.
- Yakasai, I. A., Abubakar, I.S., Ibrahim, S.A., & Bappa, L.A. (2011). Massive recurrence of uterine fibroids: Case Report and Literature Review: *British Journal of Science*, 2(2), 2047- 3745.

## EFFECTS OF MOBILE LEARNING APPS INSTRUCTIONAL STRATEGY ON STUDENTS' ACHIEVEMENT IN CHEMISTRY AND NUMERICAL ABILITY AMONG SECONDARY SCHOOLS IN YENAGOA METROPOLIS

<sup>1</sup>Toinpere Mercy Frederick-Jonah, <sup>2</sup>John Billy Moses & <sup>3</sup>Ebiemi Omietimi Charles

<sup>1</sup>Department of Science Education, Niger Delta University,  
Wilberforce Island, Bayelsa State  
frederickjonahtoinpere@gmail.com, 08038171998

<sup>2</sup>Department of Science Education, Niger Delta University,  
Wilberforce Island, Bayelsa State  
mosesjohnbilly@gmail.com, 0806078889

<sup>3</sup>Department of Science Education, Niger Delta University,  
Wilberforce Island, Bayelsa State  
charlesebiemibella@gmail.com, 09061484542

### Abstract

*Despite the potential of mobile learning apps to enhance instructional strategy, not many studies have been conducted to explore it. Therefore, this study explored the effects of mobile learning apps' instructional strategy on secondary school students' achievement in chemistry and numerical ability. The study utilised the pre-test and post-test control group quasi-experimental design—the population consisted of all 4829 SSII students in the Yenagoa metropolis of Bayelsa State. One hundred and two (102) students were selected to participate in the study through purposive sampling. An intact class from two schools were used and randomly assigned as experimental and control groups. The study lasted for five weeks. Two research questions and two null hypotheses were raised to guide the study. Two instructional guides and instruments, the Chemistry Achievement Test (CAT) and the Numerical Ability Test (NAT), were used for data collection. CAT and NAT comprised 25 multiple-choice questions with a reliability of 0.88 and 0.83, respectively, using Kuder-Richardson Formula 21 (KR-21). Mean and standard deviation were used to analyse the research questions, while ANCOVA was used to test the null hypotheses at a 0.05 significant level. The results of the study showed that students taught with the mobile learning app strategy had significantly higher achievement in chemistry than those acquainted with the lecture strategy. A significant effect of numerical ability on students' achievement in chemistry was observed. Amongst others, it was recommended that e-learning strategies like mobile learning apps enhanced instructional strategy for teaching chemistry should be encouraged and promoted.*

**Keywords:** Achievement, Chemistry, Lecture Strategy, Mobile Learning Apps, Numerical Ability

### Introduction

Chemistry is fundamental to life and living and is part of everything we do, smell, taste or touch. It is present in every small activity from cooking to using detergents for cleaning. Knowledge of chemistry is also fundamental to career development or as a career pathway and covers a wide range of domains, including food production, better health, industrial growth, and even enhancement of social lives through its influence in fields like cosmetology, etc. (Aman, 2021; Helemenstine, 2019). Rocke (2021) gave a more comprehensive definition of chemistry,

describing it as the field of science concerned with the properties, composition and structure of substances (chemicals and compounds), the transformation they undergo, and the energy released or absorbed during those transformational processes.

Thus, considering the relevance of chemistry as a field of study, a good performance in the subject is highly expected. Nevertheless, results from conducted studies showed students' perception of the subject and their achievement on the opposing side. Abel (2024) states that the recent achievement reports from WAEC chief examiner shows that failure rate for chemistry in WAEC examinations were 43.02% in 2019, 42.61% in 2020, 33% in 2021, and furthermore, only 38.68% of students passed chemistry in 2022. Iheahurukawa and Ugwu (2024) state that the WAEC annual reports shows that only 19.84% and 33.93% of students were able to achieve credit passes in chemistry in 2018 and 2019.

The poor performance of students in subjects like chemistry could be attributed to several reasons, the most prominent amongst which is the instructional style used for chemistry teaching and learning. Omwirhiren and Ibrahim (2016) state that science students' poor performance and achievement can be primarily linked to the teacher and the teaching method used in instruction. Chemistry classroom instruction is typically carried out by modifying the lecture method.

The lecture method is a direct method of instruction that emphasises the face-to-face transmission of knowledge from teachers to their students of varying numbers. In the lecture method, the teacher is the primary determinant of what is learnt (Minghong et al., 2019; Shakibaei et al., 2019). The lecture method typically involves little to no student interaction, which is a significant area of criticism. However, recognising the limits of such a strategy has led to the development of unique modifications to make the learning process more effective and meaningful, hence the modified lecture method. In this method, ordinary lecture is supplemented by learner-centred activities like discussions, question and answer sessions, individual and group classwork, etc. All in the efforts towards making learning more active.

Considering the poor achievement rate in the subject of chemistry, it is thus essential to explore other potentially better strategies through which the subject can be taught. Among others, Jumamuratov and Kaipbergenov (2023), Trust (2018) and Haleem et al. (2022) have recommended that digital technologies be incorporated into the educational process. This incorporation can be achieved in several ways, one of which is the use of mobile devices.

Mobile learning is a teaching style innovation and a variety of integration of computer technologies to enhance the teaching and learning process. Mobile devices have experienced a massive surge in recent times and are becoming quite an indispensable tool, and it is acknowledged that man would find it hard to live without them (Melo & Como, 2016). The significant advantage of mobile devices over all other hardware computer technologies lies in their portability and flexibility, as they are easy to access at any given time or place. Also linked to its popularity is its lower cost compared to other computer gadgets like laptops or desktop computers.

Mobile learning apps are educational platforms designed to work on (or support) mobile devices. These apps host a series of educational and training content in varying formats. Some common mobile learning apps include Udemy, Khan Academy, Quizlet, Solo Learn, Learn Worlds mobile builder, Ted-ed, etc. (Raouna, 2021). These mobile learning apps range from those specific in learning content (like the SoloLearn, which only covers learning programming languages) to those with more general content (like the Khan Academy, which provides a wide range of online education materials covering a large number of fields like chemistry, biology, programming etc.). Apart from these applications designed primarily and only for educational

purposes, several other applications host non-educational content but can still be effectively used as mobile learning apps. A famous example is the application for the world's largest video-sharing platform, YouTube (Deans, 2021).

Nasution and Siddik (2020) state that computer technologies, particularly mobile applications, can be used to drive the development of the educational process in both formal and informal educational institutions. Among several other things, integrating mobile devices into the teaching and learning process has been noted to increase students' interest, participation and engagement in the learning process (Melo & Como, 2016). Shams et al. (2021) state that mobile learning significantly affects students' academic progress. The qualitative findings indicated that using an internet-connected mobile device effectively enhances students' academic progress and achievement if implemented appropriately in teaching and learning situations. The study also noted that mobile learning helps in enhancing collaborative learning and communication. Based on this, this study is thus concerned with exploring the use of mobile learning applications to teach chemistry to secondary school students.

Apart from the instructional approach adopted, students' chemistry learning process and achievement can be actively influenced by a series of variables that are more personal. For instance, students' learning of chemistry can be affected by the knowledge and skills in the mathematics domain, such as students' numerical ability. This may be possible because specific contents of chemistry involve quantitative calculations.

Numerical ability describes an individual's capacity to manipulate or use numbers correctly in solving problems, which can, in turn, influence their achievement and performance (Badru, 2016). Numerical ability tests are typically designed to measure the individuals' ability to solve problems in number sequencing, make accurate mathematical deductions through numerical reasoning, deduce information, draw logical conclusions, etc.

Mathematics is fundamental to and influences other fields in several ways. It is naturally deductive to assume that the numerical ability of students can affect their performance in science subjects like chemistry. Ralph and Lewis (2018) state that students at the bottom quartile of mathematics aptitude or numerical ability have been identified over time as being at risk for low performance in chemistry courses, especially in areas like mole concept and stoichiometry, and vice versa. In line with this, Ye et al. (2016) identified students with a lower numerical ability as more likely to experience difficulties learning chemistry, leading to poor performance. Considering all this, it is essential to explore how mathematical variables like the students' numerical ability might affect the chemistry learning process and outcomes across varying classroom designs.

This study, dealing with the adoption of mobile learning apps enhanced instructional strategy as an innovative approach to teaching chemistry, is in line with the tenets of and supported by the constructivism theory of learning. Mobile-based learning strategies, just like constructivism, advocate for more student-centred learning (as the use of mobiles, amongst others, gives students more control of their learning and also gives them a more active role), the teacher being a guide or facilitator, and even enhancements of collaboration (as communication is a significant constituent and focus of Information and Communication Technologies (ICT) gadgets like the mobile devices). The mobile application-based strategy, just like constructivism, emphasises the individual learner's role in constructing their understanding, and this is evident through the more active role learners are required to play when taught with mobile-based learning strategies. Also, constructivism actively advocates against the principles of the traditional lecture method, and it is worthy to note that the introduction of ICT tools like mobiles

was built on recognising the shortcomings of the lecture methods and is designed and geared towards solving the issues associated with traditional lectures.

### Statement of the Problem

Despite its necessity, the teaching and learning of chemistry have been commonly associated with difficulties and poor achievement. Available literature has linked the underperformance in chemistry to a myriad of reasons, mainly the teaching style used. The lecture method through which chemistry instruction typically takes place is described as insufficient in facilitating students' understanding of concepts in the subject. Thus, the need arises to introduce more effective innovation in the teaching strategy. The mobile learning app's enhanced instructional strategy is one of those innovations that can overcome the limitations of the lecture method and facilitate better learning outcomes. However, only few studies have explored the potential of this strategy. Also, most available studies were in higher learning institutions rather than secondary schools. Based on all these, this study examines the effectiveness of mobile learning apps in teaching electrolysis in chemistry. This study also considers the moderating effects of numerical ability on achievement, which lacks empirical studies.

### Research Questions

The following three research questions were raised to guide the study;

1. What is the mean achievement score of students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method?
2. What difference exists between the mean achievement scores of low and high-numerical-ability students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method?

### Hypotheses

The following two null hypotheses were tested at a 0.05 level of significance to guide the study:

1. There is no statistically significant difference in the mean achievement scores of students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method.
2. There is no statistically significant difference between the mean achievement scores of low- and high-numerical-ability students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method.

### Methodology

This study utilised the pre-test, post-test, and control group quasi-experimental design. The population for the study consists of the 4829 senior secondary school two (SS2) students in Yenagoa Metropolis of Bayelsa State. A purposive sampling technique was used in selecting two public secondary schools. The selection of the school was based on the following criteria;

1. The schools must be public secondary schools
2. Classroom chemistry teachers at these schools must be professionally qualified and have been teaching chemistry for at least four years.
3. The teachers of the selected schools must be willing to be involved in the experiment.

One intact class was randomly selected for the control and the experimental group from the two schools. A total of 75 students participated in the study. For data collection, four instruments were

developed and used in this study: Instructional Guide on Mobile Learning Apps Enhanced Strategy (IGMLAES), Instructional Guide on the Lecture Method (IGLM), Chemistry Achievement Test (CAT) and Numerical Ability Test (NAT). The IGMLAES and IGLM were used as teaching guides for the experimental and control groups. The CAT was used to measure students' achievement in the chemistry concept of electrolysis. The NAT was used to measure the students' numerical ability level. All the instruments were duly validated through expert review. To establish the reliability of the research test instruments, the CAT and NAT were administered to 30 students outside the study sample to determine the discriminating indices of the items. The collected data was then analysed using the Kuder-Richardson Formula 21 (KR-21), which yielded a reliability of 0.88 and 0.83 for the CAT and NAT, respectively.

The first week of data collection was used to train school teachers as research assistants on implementing the IGMLAES and IGLM for chemistry teaching. The CAT pre-test and NAT were presented to the students during the second week. In the third and fourth weeks, treatment was carried out for experimental and control groups using the instructional strategies. The CAT was re-administered to the students in the fifth week as a post-test. Mean and standard deviation were used to analyse the research questions, while the hypotheses were tested using Analysis of Covariance (ANCOVA).

## Results

### Research Question One

What is the mean achievement score of students in chemistry when taught through mobile learning apps enhanced strategy and those taught through lecture method?

**Table 1: Summary of Mean and Standard Deviation of Pre-test and Post-test Scores Showing the Effects of Instructional Strategies on Students' Achievement in Chemistry**

Instructional Strategies	N	Pre-test Scores		Post-test Scores		Mean Gain
		Mean	STD	Mean	STD	
Mobile Apps Enhanced	39	31.79	7.84	59.08	7.59	27.29
Lecture Method	36	31.22	8.16	48.78	8.43	17.56
<b>Total</b>	75	31.52	7.94	54.13	9.49	22.61

Table 1 shows that the post-test mean score of students taught with the mobile learning apps enhanced instructional strategy (mean = 59.08, SD = 7.59) is greater than the post-test mean score of students taught using the lecture instructional strategy (mean = 48.78, SD = 8.43). The result further shows that the mean gain score of students taught using the mobile learning app enhanced instructional strategy (27.29) is greater than that of students taught using the lecture instructional strategy (17.56). The result implies that students with mobile learning apps enhanced instructional strategy performance better than those taught with the lecture instructional strategy. Consequent to the observed differences, an Analysis of Covariance (ANCOVA) was conducted to ascertain whether the difference was statistically significant.

### Research Question Two

What difference exists between the mean achievement scores of low and high-numerical-ability students in chemistry when taught through the mobile learning app enhanced strategy and those taught through the lecture method?

**Table 2: Summary of Mean and Standard Deviation of Students' Pre-test and Post-test Scores showing the Effects of Instructional Strategies on High and Low Numerical Ability Students' Achievement in Chemistry**

Instructional Strategies	Numerical Ability	N	Pre-test Scores		Post-test Scores		Mean Gain
			Mean	STD	Mean	STD	
Mobile Apps Enhanced	High	16	34.00	6.02	62.75	6.81	28.75
	Low	23	30.26	8.68	56.52	7.17	26.26
	Total	39	31.79	7.84	59.08	7.59	27.29
Lecture Method	High	11	29.82	8.65	57.82	6.03	28.0
	Low	25	31.84	8.04	44.80	5.89	12.96
	Total	36	31.22	8.16	48.78	8.43	17.56
Total	High	27	32.30	7.35	60.74	6.84	28.44
	Low	48	31.08	8.30	50.42	8.76	19.34
	Total	75	31.52	7.94	54.13	9.49	22.61

Table 2 shows that for the students taught with mobile learning apps enhanced instructional strategy, the post-test mean score of students with high numerical ability (mean = 62.75, SD = 6.81) is greater than the mean score of students with low numerical ability (mean = 56.52, SD = 7.17). The same goes for students taught with lecture instructional strategy, where the post-test mean score of students with high numerical ability (mean = 57.82, SD = 6.03) is greater than the post-test mean score of students with low numerical ability (mean = 44.80, SD = 5.89). Furthermore, the table shows that the mean gain scores of students taught with mobile learning apps enhanced instructional strategy (28.44) are more significant than those of students taught with the lecture instructional strategy (19.34). Consequent to the observed differences, the ANCOVA was carried out to determine if the difference was statistically significant.

### Hypothesis One

There is no statistically significant difference in the mean achievement scores of students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method.

**Table 3: One-way analysis of covariance (ANCOVA) of post-test scores of students' achievement in Chemistry when taught with Mobile Learning Apps Enhanced Instructional Strategy and those taught with the Lecture Method.**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Squared	EtaDecision
Corrected Model	1990.022 <sup>a</sup>	2	995.011	15.319	.000	.299	
Intercept	12402.591	1	12402.591	190.946	.000	.726	
Pre-test	4.347	1	4.347	.067	.797	.001	
Instructional Strategies	1976.339	1	1976.339	30.427	.000	.397	*Sig
Error	4676.645	72	64.953				
Total	226448.000	75					
Corrected Total	6666.667	74					

a. R Squared = .299 (Adjusted R Squared = .279) \*Significant at  $p < 0.05$  alpha level

The result in Table 3 shows that the difference in the mean achievement scores of students taught with the mobile learning apps enhanced instructional strategy and those taught with the lecture method was statistically significant ( $F_{1,72} = 64.953$ ,  $p < 0.05$ ; eta squared = 0.397), which gives an effect size of 39.7%. Thus, the null hypothesis, which states that "there is no statistically significant difference in the mean achievement scores of students in chemistry when taught with mobile learning apps enhanced strategy and those taught with the lecture method," was rejected.

### Hypothesis Two

No statistically significant difference exists between the mean achievement scores of low and high-numerical ability students in chemistry when taught through mobile learning apps enhanced strategy and those taught through the lecture method.

**Table 4: 2 x 2 Factorial Analysis of Covariance (ANCOVA) of Post-test Scores of High and Low Numerical Ability Students' Achievement in Chemistry when taught with the Mobile Learning Apps Enhanced Strategy and the Lecture Method.**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta <sup>2</sup> Decision
Corrected Model	3649.691 <sup>a</sup>	4	912.423	21.170	.000	.547	
Intercept	12691.793	1	12691.793	294.476	.000	.808	
Pre-test	3.400	1	3.400	.079	.780	.001	
Instructional Strategies	1153.409	1	1153.409	26.761	.000	.277	
Numerical Ability Test	1551.769	1	1551.769	36.004	.000	.340	
2-way Interactions:							*Sig
Instructional Strategies Numerical Ability	*197.650	1	197.650	4.586	.036	.061	
Error	3016.976	70	43.100				
Total	226448.000	75					
Corrected Total	6666.667	74					

a. R Squared = .547 (Adjusted R Squared = .522) \*Significant at  $p < 0.05$  alpha level

The result in Table 4 shows that numerical ability had a significant interaction effect on students' achievement in chemistry ( $F_{1,70} = 4.586$ ,  $p = .036$ ; partial eta squared = .061), which gives an effect size of 6.1%. Thus, the null hypothesis, which states that "no statistically significant difference exists between the mean achievement scores of low and high numerical ability students in chemistry when taught with mobile learning apps enhanced strategy and those taught with the lecture method", was rejected.

### Discussion of Findings

The findings of this study showed that students taught with mobile learning apps' enhanced strategy had a significantly better mean achievement score than those taught with the lecture method.

This finding agrees with that of Fonesca et al. (2021), which explored the use of mobile apps in the teaching of chemistry and reported it to have a significant beneficial effect on students' achievement. Melo and Camo (2016) also reported beneficial findings for using mobile learning to enhance the chemistry laboratory class. Other studies like those by Shams et al. (2021), Nasution and Siddik (2020), and Morris et al. (2016), also agree with this finding, as they explored the use of mobile learning in varying contexts and report it to be beneficial for students' learning outcomes.

The study by Odukoya et al. (2017) reports findings that somewhat disagree with this study. The study explored how the provision of tablets and internet connectivity for learning affects the students and reported negative results, with the students tending to use the tablets and internet connectivity for activities other than learning, leading to low academic achievement and productivity.

It is worth noting that the contrasting studies utilised a different approach from this study. In that study, the use of mobile learning was not explored in a classroom situation under the supervision and guidance of a teacher, but instead, they explored how the students used them when provided with mobile learning apparatus outside the classroom and the effect on their academics. The study also used a survey design, a questionnaire, and a group discussion to collect data. Thus, these differences in approach can be attributed to being at the root of the difference in findings, as it can reasonably be said that mobile learning will prove effective if it is utilised as an instructional style in the classroom process rather than its use being left to the discretion of the learners, outside the classroom.

The finding of this study reported that students with high numerical ability had significantly better chemistry mean achievement than students with low numerical ability when taught with mobile learning apps' enhanced strategy and the lecture method. This finding is in agreement with those of Suigharti and Habeahan (2018), Ayodele (2014), and Archibong (2014), who explored the impacts of numerical ability on students' achievement in chemistry and reported it to be significant. The study also agrees with that of Badru (2016), which explored the effects of numerical ability on students' mathematics achievement and reported it to be significant.

The nature of the content scope and the items in the achievement test might have contributed to this outcome. This is because the chemistry topic of electrolysis has a numerical/quantitative side, where proficiency with mathematical functions is sure to give one a clear advantage. Also, many of the items in the achievement test required the students to think critically and apply knowledge learned theoretically to a practical scenario. This is somewhat similar to the numerical ability test, as it also necessitates high reasoning ability, and as such, the proficiency displayed with the numerical ability test, due to better reasoning skills and spatial abilities, is likely to have transferred to and prove advantageous in the chemistry achievement test.

### **Conclusion**

It can be concluded that the use of mobile learning apps enhanced instructional strategy is more effective for teaching chemistry concepts than the lecture strategy, and its adoption will lead to better learning outcomes in chemistry. The numerical ability of students affected students' achievement in chemistry. Thus, the numerical ability of students has a significant role in their chemistry learning, especially in electrolysis, which constitutes a disadvantage to students with low numerical learning ability.

### **Recommendations**

Based on the study's findings, the following recommendations are made;

1. Adoption of e-learning-based strategies like the mobile learning apps assisted instructional strategy should be encouraged among chemistry teachers
2. In-service training in workshops and conferences should focus on inculcating teachers with the skills needed to implement and adopt such e-learning-based strategies and should be regularly organised.
3. Computer literacy and proficiency should be a matter of utmost priority for teachers so they can adopt e-learning-based strategies.
4. Students' mathematical-based aptitudes should be considered when teaching chemistry concepts with mathematical components.
5. Schools should be equipped with information and technology laboratories to enhance the adoption of e-learning strategies in the teaching and learning of chemistry.

## References

- Abel, J. O. (2024). Teacher Characteristics as Correlates of Student's Academic Achievement in Senior Secondary School Chemistry in Kogi State, Nigeria. *Journal of Science, Technology and Mathematics Pedagogy* 2(1), 107-118. <https://jostmp-ksu.com.ng/index.php/jostmp/article/download/135/73>
- Aman, A. (2021). Importance of chemistry in everyday life. *GeeksforGeeks Blog*. From <https://www.geeksforgeeks.org/importance-of-chemistry-in-everyday-life/>
- Archibong, U.A. (2014). Effect of three instructional methods, gender and numerical ability of students' performance in electrochemistry in Uyo LGA of Akwa Ibom State. *World Educators Forum*, 5(1), 2350-2401. <https://www.globalacademicgroup.com/journals/world%20educators%20forum/AL.pdf>
- Ayodele, D.O. (2014). Teacher instructional time, student-engaged time and numerical ability as predictors of student achievement in senior secondary school chemistry. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, 5(3), 377-380. <https://www.researchgate.net/profile/Olufunmilayo-Ayodele-2/publication/271825485>
- Badru, A.K. (2016). Problem-based instructional strategy and numerical ability as determinants of senior secondary achievement in mathematics. *Journal of Education and Practice*, 7(13), 89-95. <https://files.eric.ed.gov/fulltext/EJ1102799.pdf>
- Deans, R. (2021). Important reasons why youtube should be a part of e-learning. *Ruth Deans Blog*. Retrieved April 27, 2022, <https://sites.udel.edu/ruthd/2021/04/22/important-reasons-why-youtube-should-be-a-part-of-elearning/>
- Fonseca, C. S. C., Zacarias, M., & Figueiredo, M. (2021). Milage Learn+: a mobile learning App to Aid the students in the study of Organic Chemistry. *Journal of Chemical Education*, 98(3), 1017–1023. <https://doi.org/10.1021/acs.jchemed.0c01313>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Helemenstine, A.M. (2019). *What chemistry is and what chemists do*. Thought Cooperation. <https://www.thoughtco.com/what-is-chemistry-p2-604135>
- Iheahurukawa, N. J., & Ugwu, P. A. N. (2024). Effect of Peer-tutoring Strategy on the Academic Achievement of Secondary School Students in Electro Chemistry in Imo State. *Irish Journal of Educational Practice*, 7(1), 13–24. <https://aspjournals.org/journals/index.php/ijep/article/view/555>
- Jumamuratov, R., & Kaipbergenov, A. (2023). Application of Information and Computer Technologies in teaching Chemistry. *Eurasian Journal of Academic Research*, 3(7), 21–26. <https://www.in-academy.uz/index.php/ejar/article/view/18639>
- Kenni, A.M. (2020). Analysis of students' performance in chemistry in West African Senior School Certificate Examination (WASSCE) and National Examination Council (NECO) from 2015-2018. *International Journal of Research and Analytical Reviews*, 7(1), 35-49. [http://ijrar.com/upload\\_issue/ijrar\\_issue\\_20544223.pdf](http://ijrar.com/upload_issue/ijrar_issue_20544223.pdf)
- Melo, X., & Como, A. (2016). Mobile Learning: A case study in physical chemistry laboratory. *European Journal of Education Studies*, 1(3), 49-59. <https://doi.org/10.5281/zenodo.55078>

- Minghong, B., Zhao, Z., Yang, J., & Wang, Y. (2019). Comparison of case-based learning and traditional method in teaching postgraduate students of medical oncology. *Medical Teacher*, 41(10), 1124-1128. <https://doi.org/10.1080/0142159X.2019.1617414>
- Morris, N.P., Lambe, J., Cicconet, J., & Swinnerton, B. (2016). Mobile technology: students perceived benefits of apps for learning neuroanatomy. *Journal of Computer Assisted Learning*, 32, 430-442. <https://doi.org/10.1111/jcal.12144>
- Nasution, A., & Siddik, M. (2020). Impact of using mobile learning applications in the learning process. *International Conference on Social, Sciences and Information Technology*. <https://doi.org/10.33330/icossit.v1i1.705>
- Odukoya, J.A., Adekeye, O., & Okunlola, O. (2017). Assessing the effectiveness of mobile learning devices in tertiary institutions: The experience of undergraduates in a Nigerian Private University. *International Journal of Interactive Mobile Technologies*, 11(4), 160-169. <https://doi.org/10.3991/ijim.v11i4.6828>
- Ojukwu, M.O. (2016). Perception of students on causes of poor performance in chemistry in external examinations in Umuahia North Local Government of Abia State. *International Journal of Education & Literacy Studies*, 4(1), 67-73. <https://doi.org/10.7575/aiac.ijels.v4n.1p.67>
- Omwirhiren, E. M. & Ibrahim, K. U. (2016). The effects of two teachers' instructional methods on students' learning outcomes in chemistry in selected senior secondary school in Kaduna Metropolis, Nigeria. *Journal of Education and Practice*, 7(15), 1-9. <https://files.eric.ed.gov/fulltext/EJ1103149.pdf>
- Ralph, V.R., & Lewis, S.E. (2018). Chemistry topics posing incommensurate difficulty to students with low math aptitude scores. *Chemistry Education Research and Practice*, 19(3), 867-884. <https://doi.org/10.1039/C8RP00115D>
- Raouna, K. (2021). The 10 best mobile learning apps of 2021. *GetSocial Blog*. <https://blog.getsocial.im/>
- Rocke, A.J. (2021). *Chemistry*. Encyclopaedia-Britannica. <https://www.britannica.com/science/chemistry>
- Shakibaei, G., Namaziandost, E., & Shahamat, F. (2019). The effect of using authentic texts on Iranian EFL learners' incidental vocabulary learning: The case of English newspaper. *International Journal of Linguistics, Literature and Translation (IJLLT)*, 2(5), 290-395. <https://www.al-kindipublisher.com/index.php/ijllt/article/download/618/543>
- Shams, A., Ajmal, F., & Jumani, N.B. (2021). Effectiveness of mobile learning for academic progress of MS education students: A case study of distance learning program at IIUI. *Pakistan Journal of Distance & Online Learning*, 7(1), 33-46. <https://files.eric.ed.gov/fulltext/EJ1321374.pdf>
- Suigharti, G., & Habeahan, J.W. B. (2018). Influence of learning model using laboratory and numeric ability to student learning result on thermochemical material. *International Education Studies*, 11(5), 154-160. <https://doi.org/10.5539/ies.v11n5p154>
- Trust, T. (2018). Why Do We Need Technology in Education? *Journal of Digital Learning in Teacher Education*, 34(2), 54-55. <https://doi.org/10.1080/21532974.2018.1442073>
- Ye L., Shuniak C., Oueini R., Robert J., & Lewis S. (2016). Can they succeed? Exploring at-risk students' study habits in college general chemistry. *Chemistry Education Research and Practice*, 17(4), 878-892. <https://doi.org/10.1039/C6RP00101G>

## CLASSROOM ENVIRONMENT AND INSTRUCTIONAL MATERIALS AS PREDICTORS OF SENIOR SECONDARY STUDENTS' ACHIEVEMENT IN POETRY IN IBADAN SOUTHWEST LOCAL GOVERNMENT AREA OF OYO STATE

<sup>1</sup>Sheriff Olamide Olatunji & <sup>2</sup>Ayegboyin, Salimat Adebola

<sup>1</sup>Department of Arts and Social Sciences Education,  
National Open University of Nigeria, Abuja  
olatunjisheriff07@gmail.com

<sup>2</sup>Department of Arts and Social Sciences Education,  
University of Ibadan  
bolaayegboyin@gmail.com

### Abstract

*The study investigated classroom environment and instructional materials as predictors of senior secondary students' achievement in poetry in Ibadan Southwest Local Government Area of Oyo State. The study adopted the descriptive research design of the correlational type. The participants of the study were 300 SS II Literature in English students from ten public senior secondary schools in Ibadan Southwest Local Government Area of Oyo State. Three instruments were used for data collection for the study: Teachers' Use of Instructional Material Questionnaire ( $r=0.78$ ), Classroom Environment Questionnaire and Poetry Achievement Test ( $r=0.81$ ). Data collected were analysed using Multiple Regression at 0.05 level of significance. Findings revealed that students' achievement in poetry had low positive relationships with classroom environment ( $r = .144$ ) and instructional materials ( $r=.078$ ). Result further showed that when pulled together, the three independent variables had a significant contribution to the prediction of students' achievement in poetry ( $F_{(3, 296)} = 5.151$ ,  $Adj. R^2 = .040$ ); it was revealed that the relative contributions of classroom environment ( $\beta = .162$ ) was significant while the relative contribution of instructional materials ( $\beta = .094$ ) was not significant to the prediction of students' achievement in poetry. In order of magnitude of the beta weight, the result further revealed that classroom environment ( $\beta = .162$ ) best predicted students' achievement in poetry. Based on the findings of this study, it was recommended that schools should provide conducive classroom environment for teaching and learning of poetry. Teachers of poetry should make use of instructional materials in teaching poetry so as to enhance students' understanding. Poetry teachers should be innovative in analysing poems for effective teaching and learning.*

**Keywords:** Classroom Environment, Instructional Materials, Students' Achievement, Poetry

### Introduction

Literature is the representation and re-presentation of human actions in written works of artistic merit. Generically, it is any form of written works deemed to have artistic or intellectual value, often deploying language in ways that differ from ordinary language. Literature across ages and continents have functioned as the embodiment and interpreter of a peoples' culture, a conveyor of a people's language as well as their philosophy, politics, psychology and national character. Nwachukwu (2003) asserts that literature, whether cast in the form of agitation, negotiation or based on historical reconstruction or mythological recreation has a touch of identity.

Fakeye (2015) notes that literature is the real essence of what life is about and it takes care of all human activities and experiences in all its genres – poetry, drama and prose. In our

secondary schools, literature is offered as Literature in English meaning, different kinds of people's Literature in English language. The only thing that can be said about defining Literature is that the definition will change. This is because, Literature change over time as well. In other words, there is no stable definition for literature. Notwithstanding, we need to examine some definitions as it relates to our study. Although we have said that any expressions in written or printed form can be said to be literature, yet there is specific sense or meaning we can attach to the word, which is more relevant to us. Here, Literature means expressions of a particular kind of form that is written or in print. It is different from the first sense or meaning because of its peculiar form and the nature of its existence. Its peculiarity derives from the fact that it is created or recreated from the imagination and written in a language that attracts our attention because it is different from the way we generally use language or express ourselves in our day to day activities or interaction (Akinsulire & Olatunji, 2024).

Fakeye and Amao (2013) state that literature is an important aspect of culture and a means of communication among the members of the society. It is concerned with the literary aspect of communication, using language for artistic and creative purposes with a view to creating beauty. Literature is created on a more elevated form of language, used in a more special and beautiful manner to express views, feelings, ideas, beliefs and emotions (Lawal, 2010). Literature helps students understand and appreciate cultures and beliefs different from their own. By constructing in literary texts a reality different from that of texts of information, students are given access to a world of attitudes, and values, collective imaginings and historical frames of reference that constitute the memory of a people or speech community. Thus, Literature and culture are inseparable (Kramsch, 2006).

Literature has three genres: poetry, drama and prose. There are three genres of literature and each of these makes a unique impact on people exposed to them. Poetry, in particular, has a lot to do with feelings and the senses. It appeals to feelings and, by so doing, develops the emotional and imaginative aspects of man. According to William Wordsworth, an 18 century romantic poet, in Smith (2010), poetry is a spontaneous overflow of powerful feeling or thinking recollected in tranquility or an exposition of one's inner feeling when the mind is at rest. Poetry explores the possibilities of language and uses it to control and clarify emotion, spiritual and sense experience.

Smith (2010) asserts that familiarity with the concept of metre and rhythm can improve students' own writing and they will be able to appreciate and apply these ideas. On his own part, Brosna (1998) highlights the features of poetry as: conciseness and condensed nature of its language. Words in poetry are carefully chosen in a way to make them sound musical and meaningful. Poetry is written in verse and can only be best realised when it is recited or sung. This is because every good poem is first and foremost meant to be sung. Poetry is not easily understood when reading (Ayanniyi, 2009). This is because, no good poem yields all its meaning easily. Some poems are simple, while some are complex but for a good poem to be fully appreciated, it has to be read repeatedly. Research has shown that among the three genres of Literature, poetry seems to be the most difficult. This is because of its ambiguity, obscurity, unfamiliarity of words and its elliptical nature.

In spite of the importance attached to the teaching and learning of Literature in English in senior secondary schools, it is discouraging to note that students' performance in the subject, especially in the poetry aspect of the subject is consistently poor. Adija (2002) and Ayanniyi (2009) observe that the performance of students in Literature in English over the years has been very poor and that students are gradually losing interest in registering for the subject in public

examination. The evidence of their poor performance can be confirmed from 2014-2017 results below:

### Analysis of May/June 2014-2017 WASSCE Results

Year	Total No of Candidates	Number and Percentage Obtaining			
		Grade (A1-B3)	Grade (A1-C6)	Grade (D7-E8)	Grade (F9)
2014	14194	167(1.176553%)	1365(9.616739%)	2362 (16.64083%)	10300(72.56587%)
2015	14568	73(0.501098%)	769(5.278693%)	1880 (12.905%)	11846 (81.31521%)
2016	12817	165(1.287353%)	1501(11.71101%)	2794 (21.79917%)	8357 (65.20247%)
2017	5656	96 (1.70)	817 (14%)	2131 (38%)	2612 (46%)

Source: Test Development Division, WAEC, Ogba, Lagos.

The results above show that students' performance in Literature in English between 2014 and 2017 is not encouraging. This is because, less than 50% of the candidates had credit in the subject. By implication, it means that the percentage of students that could probably use the result to gain admission into higher institutions of learning in these years would not be up to 50%. As a subject that features prominently in the school curriculum, the failure rate in it at the school certificate level, in spite of all the good efforts of researchers, is a phenomenon that is giving students, teachers and school authorities a big concern. This is because, the low performance in this subject has shattered the dreams of students desirous of getting admission to study highly subscribed courses such as Law, Mass Communication, Language Art, Communication Art, Theatre Art and a host of others in our tertiary institutions. As stipulated in JAMB Brochure (2010), at least a credit pass in Literature in English is a requirement before any candidate is eligible for admission to any of the aforementioned courses.

As a way of addressing the problem of students' poor performance in Literature in English, Ayanniyi (2009), Fakeye and Amao (2013) and Fakeye (2015) have carried out varieties of research ranging from effective strategies to method of teaching Literature in English. Although most of these studies came up with good contributions to the teaching and learning of Literature in English but with little emphasis on school related factors as predictors of senior secondary school students' achievement in poetry. Therefore, it means there is more to be done about the problems of teaching and learning Literature in English, especially the poetry aspect of the subject, than improving teaching methods and strategies. Obemeata (1995) stresses that improving teaching methods and strategies alone cannot solve the problem of poor performance in schools. Apart from poor method of teaching the poetry aspect of Literature in English, it has been noted that school environmental factors also affect students' poor performance in the subject (Fakeye, 2015).

The classroom is a basic structural unit of our educational system (Talton & Simpson, 2007). It is a miniature community in which members' interest influences the behaviour of others. Classroom environment is therefore the type of environment created as a result of subsequent interactions that occur in the classroom during teaching and learning process (Hawkros & Perick, 2005). The classroom environment of a school is an embodiment of physical, sociological and psychological conditions.

The physical environment has to do with the age of the classroom building, colour, level of available furniture, desks and seats, ventilation, lighting, roof, ceiling and floor (Akubue, 2001). The sociological classroom environment or climate refers to the feeling, which the teachers and the learners are able to generate in making the classroom morale high or low (Akubue, 2001). The psychological classroom environment refers to the level of the speed of teaching, cohesiveness, distractions, interests, motivations, anxieties, confusion and difficulty of

the classroom learning activities (Hartel & Walbey, 2001). A classroom that is not ventilated will not be conducive place for teaching and learning. Lawrenz (2006) suggests that poor ventilation in the classroom contributes to higher rates of illness in students. Increased illness leads to more time away from school, meaning that students' health and education both suffer. Therefore, a well-ventilated classroom is of great health value and make students learn without hindrance.

Instructional materials are very important because no educational effort or reform can be complete without recognising the importance of instructional materials. They are very crucial as they aid teaching effectiveness. Fuller (1996) stresses that adequate provision of teaching and learning resources in schools have been found to have positive effect on students' performance especially in literature. Among such teaching and learning resources in secondary schools that can improve students' performance are: images, maps, photographs, sketches, diagrams, films, written materials like newspaper clippings or articles from scientific and technical literature.

Teachers use different instructional materials to motivate learners to learn by using charts, models, graphics, real objects as well as improvised materials (Awotua-Efebo, 2001). The effectiveness of instructional materials in promoting students' academic performance is indisputable. It provides much needed sensory experiences needed by learners for effective and meaningful behavioural change. According to Esu, Erukoha and Umoren (2004), instructional materials facilitate learning of abstract concepts by helping to concretise ideas and stimulate learners' imagination. They help to increase active participation in the learning process, while saving teacher's energy and reducing the teacher centredness in teaching.

Olumorin, Yusuf, Ajidagba and Jekayinfa (2010) observe that instructional materials help teachers to teach conveniently and learners to learn easily without stress. They have direct contact with all sense organs of the students. Kochhar (2012) asserts that instructional materials are very significant teaching and learning tools. There is need for teachers to find necessary and relevant materials to complement classroom interaction in order to broaden and arouse students' interest in the subject. Isola (2010) describes instructional materials as objects or devices that assist the teachers to present their lessons logically and sequentially to learners. Oluwagbohunmi and Abdu-Raheem (2014) state that instructional materials are used by teachers to aid explanations and make learning of subject matter understandable to students during teaching learning process. Abdu-Raheem (2011) asserts that non-availability and inadequacy of instructional materials are major causes of ineffectiveness of the school system and poor performance of students in schools.

Previous studies investigated methods of teaching poetry and enhancing poetic literature instruction through stylistic and thematic approaches but much research focus has not been given to classroom environment and instructional materials as predictors of students' achievement in poetry. Therefore, this study investigated classroom environment and instructional materials as predictors of senior secondary students' achievement in poetry in Ibadan Southwest Local Government Area of Oyo state.

### **Statement of the Problem**

Literature in English is an important subject in the senior secondary school curriculum. However, reports from West African Examination Council and National Examination Council revealed that students' performance in the subject is poor, especially in poetry which is an important genre of Literature. Efforts to address this problem have led scholars to investigate teachers' teaching style, stylistic and thematic approach, among others. Despite these efforts, the

performance of students in poetry has not improved, thereby bringing about a shift in research focus to school-related factors such as classroom environment and instructional materials. Studies have shown that these two variables strongly predict students’ achievement in Mathematics, English language, Computer Science and French. However, the extent to which these variables could predict students’ achievement in poetry has not received much research focus. Therefore, this study investigated classroom environment and instructional materials as predictors of senior secondary students’ achievement in poetry in Ibadan Southwest Local Government Area of Oyo state.

**Research Questions**

The following research questions were raised to guide the study:

1. What relationship exists between the independent variables (classroom environment and instructional materials) and students’ achievement in poetry?
2. What is the composite contribution of the independent variables (classroom environment and instructional materials) to students’ achievement in Poetry?
3. What is the relative contribution of the independent variables (classroom environment and instructional materials) to students’ achievement in poetry?
4. Which of the independent variables (classroom environment and instructional materials) best predicted students’ achievement in poetry?

**Methodology**

The study adopted the descriptive research design of the correlational type. Ten senior secondary schools were randomly selected from 27 public schools in Ibadan Southwest Local Government Area of Oyo State. Thirty SS II students of Literature in English were selected from each school making a total of 300 SS II students. In all, a total number of 300 SS II students participated in the study. Three instruments were used for data collection for the study: Teachers’ Use of Instructional Material Questionnaire ( $r=0.78$ ), Classroom Environment Questionnaire and Poetry Achievement Test ( $r=0.81$ ). For face and content validity, the instruments were shown to three experts in Language Education. To determine the reliability of the instruments, they were trial-tested on 30 SS II students in a school that was not part of the schools selected for the study. Data collected were analysed using Multiple Regression and results were interpreted at 0.05 level of significance.

**Results**

**Research Question 1:** What relationship exists between the independent variables (classroom environment and instructional materials) and students’ achievement in poetry?

**Table 1: Showing the Correlation Matrix of the Independent Variables and Students’ Achievement in Poetry**

Variables	N	Mean	S.D	1	2	3
Poetry Achievement Test (1)	300	4.98	1.993	1.000		
Classroom Environment (2)	300	10.51	6.853	.144*	1.000	
				(.012)		
Instructional Materials (3)	300	9.04	6.575	.078	-.040	1.000
				(.177)	(.489)	

Table 1 shows the pattern of relationship between the independent variables (classroom environment and instructional materials) and students’ achievement in poetry. The result reveals that students’ achievement in poetry had low positive relationships with classroom environment

( $r = .144$ ;  $p < .05$ ) and instructional materials ( $r = .078$ ). This pattern of relationship implies that students' achievement in poetry is moving in the same direction with classroom environment and instructional materials such that an increase in such independent variables also caused an increase in students' achievement in poetry.

**Research Question 2:** What is the composite contribution of the independent variables (classroom environment and instructional materials) to students' achievement in Poetry?

**Table 2: Summary of Regression Analysis of the combined Independent Variables on Students' Achievement in Poetry**

R = .223  
 R Square = .050  
 R Square (Adjusted) = .040  
 Standard Error of Estimate = 1.953

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	58.934	3	19.645	5.151	.002 <sup>b</sup>
	Residual	1128.946	296	3.814		
	<b>Total</b>	<b>1187.880</b>	<b>299</b>			

Table 2 indicates the joint contribution of the independent variables (classroom environment and instructional materials) to the prediction of students' achievement in poetry. The result reveals that when pulled together, the two independent variables had a significant contribution to the prediction of students' achievement in poetry ( $F_{(3, 296)} = 5.151$ , Adj.  $R^2 = .040$ ). The result also indicates a multiple regression ( $R^2$ ) of .050 and Adjusted  $R^2$  of .040. This implies that 4% of the variance in students' achievement in poetry was predicted by the joint contribution of the independent variables and that other factors and residuals not included in this model may have accounted for the remaining 96% variance.

**Research Question 3:** What is the relative contribution of the independent variables (classroom environment and instructional materials) to students' achievement in poetry?

**Table 3: Regression Analysis of the Relative Contribution of Independent Variables to Students' Achievement in Poetry**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	3.723	.343		10.844	.000
	Classroom Environment	.047	.017	.162	2.842	.005
	Instructional Materials	.029	.017	.094	1.655	.099

Table 3 shows the relative contribution of the independent variables (classroom environment and instructional materials) to the prediction of students' achievement in poetry, as expressed in Beta weight. The result reveals the relative contributions of classroom environment ( $\beta = .162$ ,  $t = 2.842$ ), while the relative contribution of instructional materials ( $\beta = .094$ ,  $t = 1.655$ ) was not significant to the prediction of students' achievement in poetry. This implies that classroom environment predicted students' achievement, while instructional materials did not.

**Research Question 4:** Which of the independent variables (classroom environment and instructional materials) best predicted students' achievement in poetry?

Table 3 shows that classroom environment predicted students' achievement in poetry, while instructional materials did not. In order of magnitude of the beta weight, the result further reveals that classroom environment ( $\beta = .162$ ,  $t = 2.842$ ) best predicted students' achievement in poetry.

### Discussion of Findings

Table 1 revealed that students' achievement in poetry had low positive relationships with classroom environment and instructional materials. This pattern of relationship implies that students' achievement in poetry is moving in the same direction with classroom environment and instructional aids, such that an increase in such independent variables also caused an increase in students' achievement in poetry. This finding might be due to the fact that if the classroom environment is conducive, students will be able to learn and instructional materials will make students to understand easily without stress. In support of this finding, Fakeye and Amao (2013) found that there was a significant relative contribution of classroom environment on students' achievement in Literature in English.

Table 2 revealed that, when pulled together, the two independent variables had a significant contribution to the prediction of students' achievement in poetry. The result showed that there was significant relative influence of instructional materials on students' achievement in poetry. The study found that instructional materials contribute to students' achievement in poetry. In line with this, Oni (1995) and Famade (2000) agreed that instructional materials are very essentials and crucial to students' achievement in English language. Fakeye (2015) revealed that instructional materials had significant relative contribution to the achievement of secondary school students in Literature in English.

Table 3 revealed that the relative contributions of classroom environment was significant, while the relative contribution of instructional materials was not significant to the prediction of students' achievement in poetry. It implied that classroom environment individually predicted students' achievement, while instructional materials did not. In line with this finding, Pritchard (2002) found that environment created an enablement that would work favourably with the intelligence and brilliance of students for them to perform optimally in their academic endeavour.

Table 4 showed that classroom environment predicted students' achievement in poetry, while instructional materials did not. In order of magnitude of the beta weight, the result revealed that classroom environment for its higher beta weight was the variable that best predicted students' achievement in poetry. In line with this finding, Orenuga (2001) stated that good classroom environment is of great health value and can make students concentrate on teaching/learning activities without hindrance. Fakeye (2015) revealed that good classroom environment had significant relative contribution to the achievement of secondary school students in Literature in English.

### Conclusion

This study investigated classroom environment and instructional materials as predictors of Senior Secondary students' achievement in poetry in Ibadan Southwest Local Government Area of Oyo state. The study has shown that poetry could be enhanced by classroom environment and instructional materials. Based on this finding, the study has provided a better understanding of variables that could predict students' achievement in the poetry aspect of literature in Ibadan Southwest Local Government Area of Oyo State.

### Recommendations

Based on the findings of this study, it was recommended that:

1. Schools should provide conducive classroom environment for teaching and learning of poetry. 2. Teachers of poetry should make use of instructional materials in teaching poetry so as to enhance students' understanding.
3. Poetry teachers should be innovative in analysing poems for effective teaching and learning.
4. Seminars, conferences and workshops should be organised for teachers of poetry on how to organise their classrooms and make use of suitable instructional materials in teaching poetry.

## References

- Abdu-Raheem, B. O. (2011). Availability, adequacy and utilisation of social studies instructional materials in Ekiti State secondary schools. *Journal of Current Discourse and Research* 3, 242- 255.
- Adija, O. (2002). *Effects of language competence on students' achievement in literature in English in selected secondary schools in Ibadan*. Unpublished Master's thesis. University of Ibadan, Ibadan
- Akinsulire, Y. P & Olatunji, S. O. (2024). Vocabulary knowledge, content familiarity and attitude as predictors of students' achievement in dramatic literature-in-English in selected secondary schools in Ondo West Local Government Area of Ondo State. *Dutsin-Ma Journal of English and Literature (DUJEL)*. Vol. 8, No. 2, 37-55
- Akubue, A. U. (2001). *Classroom organization and management: A 5 points strategy*. Ibadan, wisdom publishers.
- Awotua-Efebo, E. B. (2001). *Effective teaching; principles and practice*. Harcourt: Heinemann publishers.
- Ayanniyi, M. A. (2009). The effect of advance organizer on students' achievement and their attitude to poetic literature in Ibadan metropolis. Unpublished PhD Thesis. University of Ibadan, Ibadan, Nigeria.
- Brosna, M. (1998). The implications for academic attainment of perceived gender-appropriateness upon spatial task performance. *British Journal of Education Psychology*, 68, 203-215. DOI:10.1111/J.2044-8279. 1998.tb01284.x
- Elliot, J. G., Hufton, N. R., Wilis, W., & Ilushin, L. (2005). *Motivation, Engagement and Educational Performance*. Britain: Palgrave.
- Esu, A. E. O, Enuokoha, O. I. T, & Umoren, G. U. (2004). *Curriculum development in Nigeria for colleges and universities*. Owerri: Whyte and Whyte Publishers.
- Fakeye, D. O. (2015). School-related factors as predictors of senior secondary school students' achievement in literature-in-English in Ibadan metropolis. *International Journal of Education*. www.macrothink.org. Retrieved September, 2018
- Fakeye, D. O & Amao, T. A. (2013). Classroom participation and study habit as predictors of achievement in literature in English. *Cross Cultural Communication* 9 (3), 18-25.
- Famade, S. (2000). *Effective utilization of instructional resources and its significant impact on academic attainment of students*. Unpublished M. Phil Dissertation, University of Lagos.
- Fuller, B. (1996). *Raising school quality in developing countries*. Washington D.C: World Bank Discussion paper 2
- Hartel, G. D & Walberg. H. J. (2001). Socio psychological environments and learning a quantity synthesis, *British Education Research Journal* 1:27-36
- Hawkros, P & Perick. (2005). Relationship between school-level and classroom level Environment. *Journal of Education Research*. Vol. 28. 212-215.
- Heider, F. (1958). *The Psychology of International Relations*. New York: Wiley

- Isola, O. M. (2010). Effect of standardized and improvised instructional materials on students' academic achievement in secondary school physics. Unpublished M. Ed project. Department of Teacher Education, Faculty of Education, University of Ibadan, Ibadan.
- Joint Admission Matriculation Board Brochure (2010).
- Kramsch, C. (2006). *Context and Culture in Language Teaching* Oxford: Oxford University Press
- Kochar, S. K. (2012). *The teaching of social studies*. New Delhi, India. Sterling Publishers Private Limited
- Lawrenz, F. P. (2006). Student perception of the classroom-learning environment in biology and physics courses. *Journal of Research in Science Teaching*. Vol.13, 315-323
- Lawal, A. (2010). Values and limitations of using literary text for teaching ESL. Retrieved from <http://www.unilorin.edu.ng/journals/educat>
- Li, Y. J, Johnson, K, Cohen, A, Williams, M. J, Knowles, E. D & Chen, Z. (2012). Fundamental (ist) attribution error: Protestants are dispositionally focused. *Journal of Personality and Social Psychology*, 102(2), 281-290. <https://doi.org/10.1037/a0026294>
- Nwachukwu, A. (2003). Literature I EFL/ESL classroom. *English language teaching*. 4 (1): 201-208
- Obeameta, J. O. (1995). *Education: An unprofitable industry in Nigeria Postgraduate School Inter-disciplinary Research Discourse* Ibadan: University of Ibadan Press.
- Olumorin, C. O, Yusuf, A, Ajidagba, U. A & Jekayinfa, A. A. (2010). Development of instructional materials from local resources for art-based courses. *Asian Journal of Information and Technology*, 9(2), 107-110.
- Oluwagbohunmi, M. F & Abdu-Raheem, B. O. (2014). Sandwich undergraduates' problem of improvisation of instructional materials in social studies: The case of Ekiti State University. *Journal of International Academic Research for Multidisciplinary*, 1(2), 824-831.
- Oni, J. O. (1995). *Educational resources*. Abeokuta: Gbemi Sodipo Press Ltd.
- Orenuga, O. A. (2001). *An introduction to education*. Lagos: Ayodeji Educational Publishers.
- Pritchard, F. A (2002). *A harvest of literary terms*. Ibadan. Extension Publications Ltd.
- Smith, S. (2010). *The reasons why a student should study English literature*. Hong Kong: ITS Educational News
- Talton, E. L. & Simpson, R. D. (2007). Relationship of attitude towards self, family and school with attitude toward science among adolescents in *Journal of Science Education* 7 (4), 365- 374
- West African Examination Council (2014). *Statistics of results and performance in May/June West African Senior School Certificate Examination (WASSCE) 2014 Literature in English*. Test Development Division, Ogba, Lagos.
- West African Examination Council (2015). *Statistics of results and performance in May/June West African Senior School Certificate Examination (WASSCE) 2015 Literature in English*. Test Development Division, Ogba, Lagos.
- West African Examination Council (2016). *Statistics of results and performance in May/June West African Senior School Certificate Examination (WASSCE) 2016 Literature in English*. Test Development Division, Ogba, Lagos.
- West African Examination Council (2017). *Statistics of results and performance in May/June West African Senior School Certificate Examination (WASSCE) 2017 Literature in English*. Test Development Division, Ogba, Lagos.

## EFFECTIVENESS OF TEACHING PRACTICE EXERCISE: THE ROLES OF SUPERVISORS AND COOPERATING TEACHERS

<sup>1</sup>Abiola Babatunde Popoola <sup>2</sup>Sheriff Olamide Olatunji & <sup>3</sup>Tiamiyu M. Oladimeji

<sup>1</sup>Departemnt of Curriculum and Instruction,  
Alvan Ikoku Federal College of Education, Owerri  
unclebpop@gmail.com

<sup>2</sup>Department of Arts and Social Sciences Education,  
National Open University of Nigeria, Abuja  
olatunjisheriff07@gmail.com

<sup>3</sup>Directorate of Advancement and Linkages,  
National Open University of Nigeria, Abuja  
mtiamiyu@noun.edu.ng

### Abstract

*Having x-rayed the objectives and importance of teaching practice in teacher preparation programmes, this paper points out some of the challenges militating against achievement of utmost success in teacher preparation programmes, most especially teaching practice exercise, being one of the banes of teacher preparation programmes. This paper therefore, stresses some of the problems confronting effective implementation of teacher education curricula, this ranges from the pre-service teachers themselves, the cooperating teachers and the supervisors. It proffered possible solutions to the identified problems by pointing out specifically, the roles of each participants in the teaching practice exercise (pre-service teachers, cooperating teachers, and the supervisors). The paper recommended among others that professionally qualified teachers should be employed to teach in the schools. The gap between the teacher education curriculum and the classroom realities should be bridged. Priorities should be given to training and re-training of teacher educators and the cooperating teachers so as to keep them abreast of global realities in teacher preparation programmes for the nation to achieve remarkable success in teacher preparation through the teaching practice exercises.*

**Keywords:** Education, Pre-service Teachers, Cooperating Teachers, School Supervisors, Teaching Practice

### Introduction

Education is the key to sustainable national development, peace and stability within and among countries, and thus, it is an indispensable means for effective participation in societal and economic development in this era. It plays an important role in improving quality of lives, enhancing social and economic productivity, initiating the process of empowerment and redistribution of resources. Education can also be seen as the efforts to raise and improve the standard of living of members of the society. This can be achieved by imparting the required knowledge to develop the society. This is done through training and acquisition of skills, knowledge, attitudes and values needed by individuals to be responsible and assist in the development of the society. Akinkuotu and Olufowobi (2016) viewed education as a process of transferring or imparting knowledge to individuals in the society so as to understand what is expected of them or what they should know. It is a concept that encompasses everything that

happens to man; it makes man to adopt new behaviour or modify the existing one (Olugbeko & Emoruwa, 2013).

Education is crucial in the development of a nation without which the nation cannot progress meaningfully (Meroyi, 2016). It is the development of the whole man that is soul, body, intellectual, emotional and physical well-being. Its relevance in civilisation cannot be overemphasized (Akinkuotu & Olufowobi, 2016). It predisposes human to re-evaluate and analyse proposition with social reality. Then, efforts are being made to improve its quality, process and practice to achieve its essence in the society. This is why the society looks up to the school system in achieving this. It is also for this reason that Okafor (1988) noted that no nation can develop fast enough without placing its ultimate priority on education. If education of a country is in crisis, the nation should quickly solve the critical problem so as to prevent a national disaster (Olugbeko and Emoruwa, 2013). And since education is the right of every child, they must not be denied because it is the process through which a child is raised up in the right way through the inculcation of the right knowledge that will empower him or her to be useful to his or her immediate environment.

### **Teacher Education**

Adelokun (2011) defined teacher education as the process of training that deals with an act of acquiring professional competences and professional growth. It is an essential exercise that enhances the skills of teaching and learning, and to properly and systematically prepare those who are currently teaching (in-service teachers) and those who will teach in future (pre-service teachers). Mkpa (2012) asserted that the teacher is incontrovertibly the fulcrum on which the system of education stands. Quality improvement in education depends upon proper training of teachers. The teachers cannot play any useful role in the educational system without properly being trained. Teachers require skills, techniques and strategies to convey concepts, ideas and principles as a means of facilitating effective teaching and learning. Okon (2008) asserted that quality is enhanced by the quality of preparation given to teachers' trainees, while according to Reynolds (2009), it is the knowledge, beliefs and values as well the level of preparation of the teacher that are brought to bear in creating an effective learning of students.

National Policy on Education (2013) stated clearly that teacher education will continue to be given attention in all our educational planning because "no education system can rise above the quality of its teachers". Going by the recent technological changes and advancement in the various spheres of life, most especially in education and teacher education within the global context, teachers need to be abreast of new knowledge, through consistent upgradation that will improve their competence. Unfortunately, according to Obanya (2001), many products of teacher education in Nigeria have been observed to be stunted academically and professionally from grade II to first-degree level.

Teacher education programme is the root of the educational system that nourishes all other parts of the system that is pre-primary, primary and secondary education, but it could be observed that too much of emphasis was placed on theory at the detriment of practice, it is therefore important to interrogate the amount of content being learnt by the pre-service teachers and what is being imported when they get to the field. This is because as Wilson (1973) stressed that, the teacher is "a person who, or a situation, which helps another person learn something more quickly and easily than he (learner) could on his own". Aglazor (2017) noted that a teacher is someone who has been professionally trained in such institutions designed for that purpose to help learners move from a state of ignorance to a state of knowledge. So, teachers would require

the most comprehensive education and pedagogical training, the most effective communication skills, the most balanced temperament, the largest variety of useful instructional materials and equipment and the most conducive work environment to make the most important task in education possible.

This is the more reason why it is important to equip pre-service teachers with good education within the global context and also as much as possible increase pre-service teachers' knowledge, competence and potentials that will develop their abilities to bring out the best in their learners, by giving them tools and values to forge ahead on their own. Azeem (2011) explained that the teaching profession is an exciting and rewarding activity but like other professions, it is highly demanding. It requires practitioners to clearly understand the profession and convey the most desirable learning to the learners. They need to be highly proficient in skills needed to carry out these tasks. This is because, the society expects high content and pedagogical competence, as well as acceptable psychological characteristics from teachers since they have significant influence on the learners. It is for this reason that the goals of teacher education are stated in the National Policy on Education (2013) to ensure that all teachers in the educational system, from pre-primary level to university level, are professionally trained.

Components of the teacher education curriculum include: general studies, study of the main element of education, namely philosophy, psychology and sociology, history of education, principles and practices of education, technology in teaching and school administration, studies related to the students intended field of teaching, and teaching practice.

### **Teaching Practice**

Teaching practice should be seen as the core of teacher education programme, it is the time when pre-service teacher is allowed to put into practice, all he/she has learnt during the course of his/her training. Teaching practice (6 units): This is the practical and professional component of the entire programme. Students are expected to be on a practical teaching that will expose them to the practice of all the theories and principles they have learnt in class. The students are to engage in teaching practice for 12 weeks in primary school or junior secondary school. Teaching practice is the most important experience in teacher preparation programme and it is generally based on a country's national policy. It is a compulsory course for all students registered in a teacher preparation programme in Nigeria. It is usually from the beginning to the end of the first semester of the final year of students' training. Before this period, students would have gained knowledge of instructional planning, instructional technology, micro teaching mentoring and teaching methods (Olatunji, 2021).

Azeem (2011) explained that "teaching practice embraces all the learning experiences of the pre-service teachers in schools. He further explained that the term practice teaching has three major connotations: the practicing of teaching skills, and acquisition of the role of a teacher; the whole range of experiences that students go through in schools, and the practical aspects of the course as distinct from theoretical studies. Kiggundu and Nayimuli (2009) defined teaching practice as a form of work-integrated learning period of time where student engage in applying theories into practice in a relevant institution to receive specific pre-service and in-service training. At this time, the pre-service teachers also have a time for observing and practicing the art of teaching before they are eventually found on the job. Teaching practice is a practicum which prospective teachers, mostly in their final year are involved in as part of the pedagogical requirement, this is because it is an important and integral component of becoming a teacher, the

opportunity, grants the student teacher experience in the actual teaching and learning environment.

Teaching practice is the most important aspects of the teacher education curriculum, and that is why it is a compulsory course that must be passed before a certificate is awarded to the pre-service teachers, even though a lot of students failed and have to repeat the exercise sometimes. It is a one semester duration for the pre-service teachers in colleges of education, this occupies the first semester of the final year of preparation of the pre-service teachers. The most important aspect of the programme that must be given the utmost importance are instructional planning, instructional technology usage, instructional delivery (content knowledge, pedagogical knowledge and pedagogical usage), ability to improvise and usage of instructional material during lesson delivery and classroom management and control

Teaching is not just a simple matter of profession, but rather, it is a complicated communication field, that requires those found on the job to exhibit effective communication skills, through various methods, techniques and instructional materials. According to Darling-Hammond (2006), standards for learning are now higher than they have ever been before, as citizens and workers need greater knowledge and skills to survive and succeed. However, this can only be achieved through effective and efficient teaching practices exercise to prepare the intending teachers for the task ahead. This is because, according to the University Brunnei Darussalam (2008) teaching practice exercise is a well-designed programme that allows the pre-service teachers to learn appropriate ways of managing their classrooms, organising whole class or group of students' activities, facilitating and monitoring learners learning, evaluate each lesson they deliver and strengthening their future plans in the light of it and acquiring a good understanding of the role of a teacher. Teaching practice is designed to develop and evaluate pre-service teachers' competence in actual classroom and school setting.

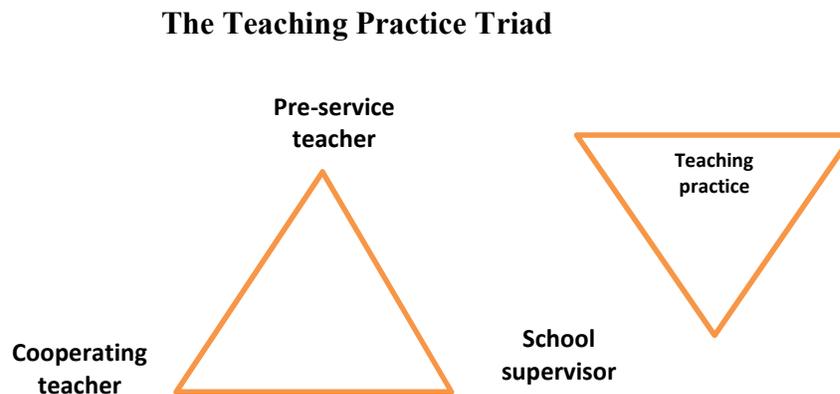
Therefore, according to the National Commission for Colleges of Education Curriculum (NCCE, 2015), the following sets of objectives have been established for why teaching practice is a mandatory component of teacher preparations:

- i. to expose pre-service teachers to real-life classroom experiences under the supervision of a professional teacher
- ii. to provide the forum for student-teacher to translate educational theories and principles into practice
- iii. to enable student-teachers discover their own strengths and weaknesses in classroom teaching and provide opportunities to enable them address their opportunities, their weakness and enrich their strengths
- iv. to familiarise pre-service teachers with real school environment as their future work place
- v. to provide pre-service teachers with an opportunity for further acquisition of professional skills, competences, personal characteristics and experience for full-time teaching after graduation
- vi. to help pre-service teachers develop a positive attitude towards the teaching profession
- vii. to serve as a means of assessing the quality of training being provided by teacher training institutes.

Teaching practice is the time when the relationship among the three major players; supervisors, cooperating teachers and pre-service teachers interface to determine the quality of the pre-service teachers in content knowledge, pedagogical knowledge and usage, classroom control, among others. The cooperating teachers have a vital influence on the aspiring teachers' professional growth and development, and that is why they should with the help of the

supervisors help them assume the full range of duties of a teacher. Since teaching practice exercise aims at providing the pre-service teachers with the practical experiences in schools, it must be specifically targeted at enhancing their abilities to further develop their knowledge, and skills in the education courses and apply them in teaching learners in schools.

Then, the success of the teaching practice is said to depend on the collaboration amongst cooperating teachers, school supervisors and the pre-service teachers. This is because the main goal of the first two (cooperating teachers and supervisors) is to guide the pre-service teacher to a quality successful completion of the teaching practice exercise. Therefore, effective communication and interaction is needed between them, to be able to guide and mentor the pre-service teachers to assume the role of a professional qualified and competent teacher. This is the reason Aglazor (2017) came up with a “Teaching Practice Triad” to further show and explain the importance of the relationship that must exist between the three during the teaching practice exercise.



*Adapted from Aglazor (2017)*

The triangle above is referred to as “student teaching triad”. The success of the teaching practice exercise is therefore dependent on the effective collaboration between the supervisor, cooperating teacher and the pre-service teachers. This shows them as a team, and therefore, the team must understand clearly what their roles and expectations must be, to properly mentor and support the pre-service teachers who are the central point of the exercise to achieve success in the exercise. There must be a set standard for each of the members of the team that must be strictly followed during the teaching practice exercise. This is why, it is important for the three to have a meeting to discuss on each other’s expectations before the commencement of the exercise, so that there would not be friction during the exercise.

Supervisors are experts charged with evaluating and assessment of the pre-service teachers during the exercise, and so, they are expected to set expectations to be met by the pre-service teachers. While cooperating teachers are seen as an integral part of the teaching practice exercise and the success of the exercise also depend on them, this is because they are the field mentors because of the position they occupied as experienced practitioners in the classroom. They are expected to guide the pre-service teachers in instructional design, instructional delivery, classroom control and management and other skills needed to maneuvers through classroom problem to enable the learners learn as well as their professional growth. To the pre-service

teacher however, they have just been given the opportunity to find him/herself in the classroom working with learners in actual classroom situations, to acquire professional competency. These experiences, is believed have the potential to enhance the teachers acquisition of professional competence (Aglazor, 2017). The three therefore, must work together as a team to achieve this.

However, it is unfortunate that these three are not making use of collaborations effectively well, thereby posing a serious challenge to the teaching practice exercise in schools. This in turn is affecting the quality of pre-service teachers, which also translate to a declining quality of teachers found in the school system today.

### **Challenges of Teaching Practice Pre-Service Teachers Induced Problems**

On the part of the pre-service teachers:

1. many of the pre-service teachers would not go to their school of teaching practice until they are sure the supervisors are coming, it is not unusual to see pre-service teachers calling each other whenever they sight a supervisor coming into the school of practice. These attitudes are having serious negative effect on quality teaching practice exercise.
2. most times, pre-service teachers have been found to abandon the school of practice where they are posted to receive proper guidance and mentorship for a school, they know would accommodate their truancy. All these affect the essence and the quality of the teaching practice exercise, and the quality of learners themselves.
3. another serious problem on the part of the pre-service teachers is the issue of impersonation. It is not uncommon to see teachers in preparation paying another person to stand in for them during the teaching practice exercise. This totally negates the objectives of the exercise and also have a demeaning effect on the quality of the pre-service teachers themselves and mostly the quality of teachers the educational institutions are producing for the nation.
4. due to the kind of mentorship they got from cooperating teachers, many of the pre-service teachers do not know the importance of scheme of work and weekly record of work in all they do during the teaching practice. So, when supervisors come, they just pick a topic they know best and teach, rather than teaching the topic of that week.
5. many of the pre-service teachers do not comply with rules and regulations guiding the teaching practice exercise, some report very late to their school of practice and abscond as soon as they were supervised. Others prepare their lesson plan in a hurry, many do not have a good knowledge of the subject matter they are expected to teach and of all the methods of teaching they were taught in school, they only make use of the lecture method of teaching.

All of these would not have been possible without the indulgence and connivance of the cooperating teachers whose duties are to guide the pre-service teachers to excellence. This is because teaching practice exercise is an opportunity for aspiring teachers to understand the role and operations of how the business of schooling is done.

### **Cooperating Teachers Induced Problems**

1. Many cooperating teachers are lacking in content knowledge and do not have enough training, probably because of the problem highlighted above, many cannot differentiate between a scheme of work and record of work. However, it is a common saying that what you do not have, you cannot give. Many cooperating teachers are seriously lacking in this regard, and they themselves need to be properly educated and re-educated.

2. Most cooperating teachers sees the time for teaching practice exercise as a time to rest and engage in other ventures, and so, instead of providing mentorship and guidance for the pre-service teachers, they abandon the classroom for them. This leaves the inexperienced pre-service teachers at their own mercy. They would not know what they are doing right or wrong, and so proper learning on the field is not taking place which defeat the purpose of the teaching practice exercise.
3. It is a common occurrence to see cooperating teachers covering up for the pre-service teachers in a number of ways, thereby shielding them away from proper mentorship. Many pre-service teachers do not go to school or classes to teach after inducing the cooperating teachers, it is not uncommon to see cooperating teachers putting a call to the pre-service teachers to tell him/her that the supervisor is around. All these indulgences are what cooperating teachers engage in to protect the pre-service teachers under their mentorship. These of course is affecting the effectiveness of the teaching practice exercise.
4. A lot of cooperating teachers are deficient in so many administrative responsibilities, which in turn makes pre-service teachers on teaching practice to be unaware of so many administrative tasks that would be useful to them as prospective teachers.
5. It has been observed that a lot of cooperating teachers need mentoring themselves, because the quality they are bringing to bear in most schools are not adequate to qualify them for mentorship, and so they end up confusing the pre-service teachers, rather than helping them to learn.

### **Supervisors Induced Problems:**

There are various problems militating against the effective teaching practice, these ranges from the supervisors, cooperating teachers and the pre-service teachers.

1. A lot of the supervisors do not know what to expect from the students on teaching practice, so in the course of supervision, many supervisors give pass mark to students who cannot properly write good lesson plan, state objectives clearly in specific terms and generally fails in good instructional delivery. Such students continue with such wrong because he/she has not been properly guided.
2. Some supervisors have been reported of asking their supervisees to come to their offices for them to be supervised, thereby negating the purpose of teaching practice exercise, which is for the student teacher to put into practice all that they have learnt in theory in the classroom in school. By these, the real corrections in terms of classroom behaviour will not be observed, which makes a total mess of the teaching practice exercise.
3. It has also been reported that some supervisors go into the student teacher practicing schools demanding money before they are supervised, or for them to be given good grade. When this happens, it makes a mess of the teaching practice exercise and the objectives would not be achieved, because whatever assessment being done would not be objectively reported. This puts a serious question mark on the quality of the pre-service teachers.
4. The teaching practice exercise should be a time to correct and model the pre-service teachers, but some supervisors see it as a time to witch-hunt, harass and punish pre-service teachers. When this happens, it tells on the morale of such pre-service teachers which makes them to sometimes lose confidence in themselves thereby defeating the reason for the teaching practice exercise is the first place of mentoring the pre-service teachers.
5. Lastly, a lot of supervisors do not go to see students on the field at all when given files for supervision, but they will report or mark the students absent in school, when in the real sense they have not visited the school. All these attitudes of the supervisors and many others are

having a negative effect on the qualities of teaching practice exercise engaged in by pre-service teachers.

### **Making Teaching Practice Effective**

It has been ascertained that teaching practice aims at providing the pre-service teachers with practical experiences in school and that it is specifically targeted at enhancing its abilities to further develop their knowledge, and skills in the education courses and apply them in teaching the learners in schools. But these objectives have been bedeviled with a lot of challenges. Therefore, to make the goal of teaching practice a realizable one, we must move beyond the problems to address the numerous issues that have been found to be significantly militating against the identified objectives of teaching practice. The collaborations identified earlier needs to be further stressed;

### **The Role of Cooperating Teachers**

- Cooperating teachers should get the pre-service teachers involved in specific classroom tasks, plans and schedule for them to assume responsibilities of the classroom.
- Cooperating teachers should make sure that the responsibility of planning, preparation, instructional delivery and evaluation is solely the responsibility of the pre-service teachers. However, this should be done with effective guidance from the cooperating teachers.
- The cooperating teachers should help pre-service teachers relate theory to practice and keep a record of attendance, mistakes and progress as well where the pre-service teacher should improve upon.
- The cooperating teachers should acquaint the pre-service teachers with pertinent school policies and regulations, philosophy, priorities and assessment, and the same time guide them to maneuver successfully through them.
- The cooperating teachers must properly guide the pre-service teacher in preparing the daily plans, unit plans, and tests, and at the same time offer effective criticism and corrections of all plans before approving such to be taught in a lesson by the pre-service teachers.
- The cooperating teachers should evaluate and work with the pre-service teachers to improve teaching through classroom visits, and discussions with the pre-service teachers on other methods that are fair and consistent with the 21<sup>st</sup> century classroom practices.

### **The Roles of Supervisors**

- Williams (2014) reported that all supervisors have an important role to play in order to ensure quality and effectiveness, they should support the student teachers, give a considerable amount of feedback and collaborate with the student teachers even to the point of team-teaching with them.
- Supervisors should evaluate the quality of the pre-service teachers' performance, and engage in constant and continuous corrections to enhance continuous progress of identified problems and encourage pre-service teacher to work harder.
- The supervisors should ensure that pre-service teachers are informed of both praise and criticism of their work and should provide useful support and assistance available to the pre-service teachers, so as to improve their quality of teaching.
- Achievements or success of the exercise depends on how the environment looks like. The supervisors should make the environment free of tension and emotional stress for the student

teachers to acquire the skills needed for the exercise. Proper orientation should be given to the pre-service teachers through the teaching practice department of the school.

-Supervisors should possess the knowledge of what they want to do, knowledge of their responsibilities, and should have a good knowledge of the work skills needed to improve the pre-service teachers' classroom behaviour.

-Constructive criticism should be made on observation of poor work and performance of pre-service teachers during the teaching practice exercise, and quality advice and corrections should be given. They should also be encouraged and motivated when a good work is done so as to encourage the pre-service teachers and the others.

-Chung (2012) asserted that the supervisor has an important role in practice teaching as a resource person, an adviser, a general morale booster, an interpreter of feedback and an assessor. Supervisors should make supervision to be in form of human relation and not a time to punish or harass students.

Teaching is not just a simple matter of profession, but a complicated communication field that requires those found on the job to have effective communication skills, through various methods, techniques and instructional materials, so that they can reach some level of expertise on the job. It is therefore up to the cooperating teachers and the supervisors to help them attain this level of expertise.

## Conclusion

Effective supervision of pre-service teachers on the field during the teaching practice exercise is very key and important to the professional development of these would be teachers. This is because, professional development of teachers affects and enhances their quality in content, knowledge, attitude and skills, which in turn improve their classroom teaching. This also will enhance the quality of achievement of the learners they teach. It was on this basis that Timperly (2008) while making case for the benefits of professional development for teachers through their preparation, he noted that;

*Teachers who are engaged in professional learning take greater responsibility for learning of all students, they do not discuss learning difficulties as they take responsibilities, and as they discover that their new professional knowledge and practice are having a positive impact on their learners, they begin to feel more effective as teachers (p.9).*

*This can only be possible when the teachers' must have gone through quality training and preparation that would prepare them for the task at hand.*

## Suggestions

Having x-rayed the importance of teaching practice exercise in the professional development and preparation of would-be teachers, as well the roles of cooperating teachers and the school supervisors in helping the pre-service teachers attain their best in professional development, the following are recommended:

-the right quality and quantity of pre-service teachers who are actually interested in studying education as a course should be admitted into the teacher preparatory programmes and not

candidates who are rejected admission into other faculties who now sees the faculty of education as a last resort.

-the right and professionally qualified teacher educators should be employed in quality and quantity, together with other support staff and not those who will be sabotaging the system.

-it has also been discovered that there is a gap between the teacher education curriculum and the classroom realities. Efforts should be made by the government and other stakeholders to bridge this gap, so as to bring the educational programme at par with global practices.

-teaching and learning facilities should be readily available and in the required quantity, to ensure that effective teaching and learning goes on in the classroom in the school. Technology must be integrated into the curriculum to teach the pre-service teachers, so that they can also in turn use it to teach the learners during the teaching practice exercise.

-only professionally qualified teachers should be employed in the school system, so that they can properly mentor and guide the pre-service teachers to proper professional development.

-the teaching practice exercise experience period should be extended, so as to provide the pre-service teachers with extensive period for proper mentorship and professional guide for their own professional development as well.

## References

- Adeyemo, A. O. (2020). Effective supervision of teaching practice exercise in Nigeria colleges of education: Catalyst for quality teacher production. *International Journal of Advanced Academic Research. Arts, Humanities and Education*. Vol.6 (3), 1-11.
- Aglazor, G. (2017). The role of teaching practice in teacher education programmes: Designing framework for best practice. *Global Journal of Educational Research*. Vol.16, 2017: 101-110. Doi:<http://dx.doi.org/10.4314/gjedr.v16/2.4>
- Akinkuotu, Y. A. and Olufowobi, O. O. (2016). Education in Nigeria: Beyond the 21<sup>st</sup> century. Education in Nigeria: Looking beyond the 21<sup>st</sup> century. A book of reading. In Kolawole, C.O.O, Bagudo, A.A, Moronkola, O.A, Akinkuotu, O.A, Babarinde, S.A, Ojedokun, I.M & Meroyi, S.I. His Lineage Publishing House, Ibadan.
- Asim, E. A. (2013). The teacher's task in an era of knowledge explosion. Explorations in education: selected essays in honour of Professor Pai Obanya. Edited by Martin Fabunmi: His Lineage Publishing House, Ibadan.
- Azeem, M. (2011). Problems of prospective teachers during teaching practice. *Academic Research International* 1(2), 306-316
- Chung, J. (2012). Developing teaching strategies through quality feedback. A paper presented at the European conference on educational research. University of Lisbon. Lisbon, September 11-14.
- Darling-Hammond, L. (2006). Constructing 21<sup>st</sup> century teacher education. *Journal of Teacher Education*, 57(3). 300-314.doi:10.1177/0022487105285962.
- Gujjar, A. A. (2016). Teaching practice: Concepts, stages, objectives and suggestions. Retrieved on July 20, 2017 from <http://www.ealteachersboard.com/cgi-bin/articles/index.p?read=3490>
- Igbuzor, O. (2006). The state of education in Nigeria. Retrieved 23/04/2023. <http://www.dawodu.am/iguzor14html>
- Izuagba, A. C. & Obiefuna, C. A. (2013). Trends and issues in teacher education. The Nigerian Perspective. Cel-Bez Publishing Co. Ltd. Owerri, Nigeria.

- Jacob, U. S & Isioma, E. (2014). Teacher qualities relevant for inclusive education of persons with special needs. *Nigerian Journal of Teacher Education and Teaching* Vol. 12, No1
- Kinggundu, E & Nayimuli, S. (2009). Teaching practice: A make or break phase for student teachers. *South African Journal of Education*, 29, 345-358.
- Meroyi, S. (2016). Education in Nigeria beyond the twenty first century: Knowledge, intelligence and sustainable development. Education in Nigeria: Looking beyond the 21<sup>st</sup> century. A book of reading. In Kolawole, C.O.O, Bagudo, A.A, Moronkola, O.A, Akinkuotu, O.A, Babarinde, S.A, Ojedokun, I.M & Meroyi, S.I. His Lineage Publishing House, Ibadan.
- Olatunji, S.O. (2021). Assessment of English language teacher preparation programme in selected public colleges of education in southwestern Nigeria. Ph. D Thesis, Department of Arts and Social Sciences Education, University of Ibadan
- Olufemi, A. O. (2005). Dynamics of a teacher education programme in the Nigerian college of education system. *African Journal of Historical Science in Education*. Vol.1. No.2 109-115
- Olugbeko, S. O & Emoruwa, F. O. (2013). Education crisis in Nigeria: Causes and solutions. In Ogboru, J.O and Brownson M.O.O. Department of Home Economics, Adeyemi College of Education. 132-143.
- Ovri, F. B, Obiekea, P. O, Chukwuma, E. T. C & Onajite. F. O. (2014). Managing teacher education and preparation in Nigeria within the global context. *Nigerian Journal of Teacher Education and Teaching* Vol.12, No.1. 75-103.
- Reynolds, M. (2001). Education for inclusion, teacher education and teacher training agency standards. *Journal of in-Service Training*, 27 (3).
- Samuel, O. B., Bamidele, E & Yinusa, A. F. (2013). Early childhood education: Implication for sustainable national development. Explorations in education: Selected essays in honor of Professor Pai Obanya. Edited by Martin Fabunmi. His Lineage Publishing House, Ibadan.
- Timperly, H. (2008). Teacher professional learning and development. *Educational Practices series*-18. Belley. Imprimerie Nouvelle Gonnet.
- Williams, A. (2014). Perspectives on partnership: Secondary initial teacher training. London: Falmer.

## INFLUENCE OF GENDER AND WORKLOAD CONCERNS ON FORMATIVE ASSESSEMENT CONCEPTION OF BIOLOGY TEACHERS IN SECONDARY SCHOOLS IN ILORIN METROPOLIS

<sup>1</sup>Abidoeye, Florence Omosholape, <sup>2</sup>Aladesuyi David Adeyemi & <sup>3</sup>Ahmed Aduke Rihanat

Department of Science Education, Faculty of Education, University of Ilorin

<sup>1</sup>abidoeye.fo@unilorin.edu.ng, <sup>2</sup>aladesuyi20gmail.com, <sup>3</sup>ahmed.ar@unilorin.edu.ng

### Abstract

*Classroom assessment is pivotal for the development of teaching and learning processes, allowing teachers to draw inferences and make informed adjustments. Teachers' conceptions of assessment significantly influence assessment practices and classroom strategies. Hence, this study examined influence of gender and workload concerns on formative assessment conception of biology teachers in secondary schools in Ilorin metropolis. The instrument for data collection was a self-designed questionnaire which was duly validated by three experts. The reliability of the instrument was determined using Cronbach alpha statistic which yielded mean alpha coefficient of 0.82. Data analysis involves mean scores, t-test, and Pearson Product-Moment Correlation. Findings established that biology teachers' conceptions are positive about the functions of formative assessment in secondary schools in Ilorin Metropolis. In addition, results indicated no significant gender-based differences in conceptions, while a significant relationship exists between workload concerns and formative assessment conceptions, the study recommends that education stakeholders should always conduct awareness campaigns among teachers, students, and parents to highlight the benefits of formative assessment in enhancing teaching and learning. Furthermore, periodically evaluation and adjustment of workload distribution policies to address concerns and maintain a healthy work-life balance for biology teachers.*

**Keywords:** Formative Assessment, Conception, Biology Teachers, Secondary Schools

### Introduction

Classroom assessment concentrates on assessment's relevance in the development of teaching and learning processes. Assessment allows teachers and students to make inferences from the data and take appropriate action. Such activities may help to improve teaching and learning or just offer a snapshot of students' competency or success over time (Black & Wiliam, 2018). In the words of Brown (2008), "conceptions of assessment refers to the conceptions people have about assessment, based on their experiences and their understandings of assessment". Teacher's assessment conceptions are crucial because there is convincing evidence that these ideas have a considerable effect on how teachers assess their students' learning and achievements (Vanderyar & Killen, 2007; Brown, 2008; Brown et al., 2009b; Opre, 2015). Furthermore, conceptions may influence teachers' classroom behaviors, such as methods of instruction and motivating strategies (Barnes et al., 2017). Students' opinions concerning assessment are particularly significant, as it is recognized that their views influence and define how they study (Brown & Hirschfeld, 2007; Brown & Harris, 2012).

Azis (2015) developed an approach in which evaluation concepts might be dispersed across a range of objectives. At one end of the spectrum is Assessment for Learning (AfL), also known as formative assessment (Brown & Remesal, 2017) or the pedagogical pole (Remesal, 2007). Assessment in this context is intended to promote student learning while simultaneously providing teachers and students with the knowledge they require to change teaching and learning practices (Black & Williams, 2018).

Vandeyar and Killen (2007) and Brown et al. (2009) argue that teachers' conceptions influence their judgments and professional actions. These scholars think that different assessment concepts result in varied evaluation processes. For example, teachers who view assessment as vital for enhancing teaching and learning would adopt formative techniques of evaluation (Vandeyar & Killen, 2007).

Dixson and Worrell (2016) and Siarova et al. (2017) consider that AfL, or formative assessment, attempts to increase student learning by giving information to teachers and students that could be utilized as feedback to adjust teaching and learning practices. Thus, formative evaluation is rarely rated. It can take two forms: spontaneous—for example, question-and-answer during real-time instruction—or organized, including tasks such as quizzes and homework exercises to assess student progress. Teachers play a critical role in delivering feedback and information on students' performance, but the learner is also a vital part in the assessment process. Teachers frequently employ assessment methods including observations, assignments, feedback sessions, peer tutoring, self-assessment, question-and-answer sessions, comprehensive approaches to teaching and learning, student self- and peer evaluation, and effective feedback. Formative assessment happens within the teaching and learning process. The tools enhance deep learning, critical thinking, student engagement, and the continuity of learning experiences (Dixson & Worrell 2016). Formative assessment is a didactic approach to oversight teaching and learning that emphasizes formative feedback (Black et al., 2009). Good feedback is stringent, detailed, critical, explicit, and aimed at future efforts. Formative evaluation is based on a critical and reliable control of the knowledge learnt and skills developed. In addition, efficient feedback adheres to strict standards based on an observable applicable mastery scale (Williams et al., 2007).

Teachers, students, and parents who do not comprehend the principles and values of formative assessment may place a low value on it. This lack of attention is exacerbated by student and teacher resistance, as well as deeply embedded cultural scripts for teaching and learning that may conflict with formative assessment concepts. Furthermore, some teachers may regard formative assessment as an additional workload, ignoring its importance in improving teaching quality and boosting student growth. Furthermore, Alotaibi (2019) discovered that female teachers were marginally more open to the issues that impede the use of formative assessment than male teachers. Hussain et al. (2019) revealed no statistically significant difference in the mean scores of public and private secondary school teachers' classroom assessment tasks because various research samples and geographical locations might reveal similar or different results. Therefore, there is the need to explore examine formative assessment conception of biology teachers in secondary schools in Ilorin Metropolis

## Objectives of the Study

The purpose of the study is to examine influence of gender and workload concerns on formative assessment conception of biology teachers in secondary schools in Ilorin Metropolis. Specifically, the study intends to find out:

- i. The formative assessment conception of male and female biology teachers in secondary schools in Ilorin Metropolis
- ii. The potential workload concerns among biology teachers which influence their conceptions of formative assessment in Ilorin Metropolis

## Research Questions

The following research questions were formulated for the study

- i. What is the formative assessment conception of male and female biology teachers in secondary schools in Ilorin Metropolis?
- ii. How does potential workload concern among biology teachers influence their conceptions of formative assessment in secondary schools in Ilorin Metropolis?

## Research Hypotheses

**H<sub>01</sub>:** There is no significant difference in the formative assessment conception held by male and biology teachers in secondary schools in Ilorin Metropolis.

**H<sub>02</sub>:** There is no significant relationship between potential workload concerns among biology teachers and their conceptions of formative assessment in secondary schools in Ilorin Metropolis

## Methodology

The study used a survey research design. This design was chosen because it is best suited for data gathering, organization, presentation, and analysis with the goal of explaining the occurrence of an event or phenomena within a certain population. The research included all secondary school biology teachers in the Ilorin Metropolis. The study's population included 579 biology teachers from secondary schools in Ilorin Metropolis who taught biology. The study included a random sample of 185 secondary school biology teachers. The data was collected using a self-designed structure questionnaire that was evaluated by three experts from the Department of Science Education, Faculty of Education, University of Ilorin, Nigeria. The dependability of the research instrument was determined using a test-retest procedure. A reliability test was carried out using twenty (20) questionnaires distributed to twenty (20) biology teachers from secondary schools that were not included in the sample. The reliability of the instrument was determined using Cronbach alpha statistic which yielded mean alpha coefficient of 0.82. This indicates that the instrument is appropriate for the investigation. The researcher physically gave the questionnaire to teachers at selected schools in the Ilorin Metropolis. The rating system was based on a four-point Likert scale: 1 strongly agree (SA), 2 agree (A), 3 disagree (AD), and 4 strongly disagree (SD). The acquired data was graded and analyzed using statistical methods. Data were analyzed using mean scores, standard deviation, the t-test, and Pearson Product-Moment Correlation (PPMC).

## Results

Data collected for the study were analyzed and interpreted using presentation tables.

**Research Question One:** What is the formative assessment conception of male and female biology teachers in secondary schools in Ilorin Metropolis?

**Table 1: Mean responses on formative assessment conception of biology teachers in secondary schools in Ilorin Metropolis**

S/N	Items	Means		Decision
		Male Response	Female Response	
1	Biology teachers perceives formative assessment as an opportunity to identify and address individual student needs.	2.99	3.01	Agreed
2	Formative assessment makes students learn from mistakes.	3.10	2.78	Agreed
3	Formative assessment allows for continuous improvement.	3.12	2.95	Agreed
4	Formative assessment plays a crucial role in fostering a growth mindset among students.	2.89	3.20	Agreed
5	Formative assessment is a means to inform teacher of their own teaching practices.	2.76	2.88	Agreed
6	Students take an active role in monitoring and reflecting on their own learning progress through formative assessment.	3.01	2.69	Agreed
7	Formative assessment is a dynamic process that goes beyond traditional testing	2.99	3.11	Agreed
8	Formative assessment is incorporating diverse strategies such as questioning techniques, peer assessments, and classroom discussions	2.77	3.03	Agreed
9	Formative assessment not only as a means of gauging student knowledge	3.51	2.93	Agreed
10	Formative assessment is a valuable tool for providing timely feedback to guide instructional decisions	3.14	2.81	Agreed
<b>Grand Mean</b>		<b>3.03</b>	<b>2.94</b>	

Table 1 showed the mean responses on the current conceptions of formative assessment held by biology teachers in secondary schools. The results indicate a generally positive acceptance of the listed conceptions, as evidenced by mean scores above 2.50. The mean scores range from 2.69 to 3.51, suggesting a favorable conception among biology teachers regarding the role and importance of formative assessment.

**Research Question Two:** How do potential workload concerns among biology teachers influence conceptions of formative assessment in secondary schools in Ilorin Metropolis?

**Table 2: Mean responses on potential workload concerns among biology teachers influence their conceptions of formative assessment in secondary schools**

S/N	Items	Mean	Decision
1	Heavy teaching loads often lead biology teachers to prioritize time-efficient instructional methods	3.11	Agreed
2	Increased administrative duties and paperwork limit the time and energy that biology teachers can allocate to thoughtful planning and implementation of formative assessment strategies in their classrooms.	2.81	Agreed
3	Overloaded schedules result in limited opportunities for professional development, hindering biology teachers from staying updated on innovative formative assessment techniques and best practices.	2.79	Agreed
4	High workload demands encourage biology teachers to rely on traditional assessment methods at the expense of more formative and student-centered approaches that require additional time and effort.	2.84	Agreed
5	Scarcity of resources, including time lead to a preference for simpler formative assessment methods, potentially overlooking the richness and diversity of strategies that could enhance student learning experiences.	3.15	Agreed
6	Pressure to cover extensive curriculum content within a limited timeframe influence biology teachers to perceive formative assessment as an additional burden rather than an integral part of effective teaching.	3.41	Agreed
7	Limited time for collaboration with colleagues hinder the sharing of ideas and collaborative efforts to implement more comprehensive and effective formative assessment practices in biology classrooms.	2.78	Agreed
8	Workload concerns contribute to a lack of consistency in the application of formative assessment across different biology classrooms, potentially resulting in variations in the quality and depth of student learning experiences	2.99	Agreed
<b>Grand Mean</b>		<b>2.99</b>	

Table 2 showed the mean responses on the potential workload influence their biology teachers' conceptions of formative assessment in secondary schools in Ilorin Metropolis. The results indicate a generally positive acceptance of the influence of potential workload on biology teachers' conceptions of formative assessment, as evidenced by weighted mean of 2.99 which is above the average mean score of 2.50. The mean scores range from 2.78 to 3.41.

### Hypotheses Testing

**Hypothesis One:** There is no significant difference in the formative assessment conception held by male and biology teachers in secondary schools in Ilorin Metropolis.

**Table 3: t-test Analysis of** current conceptions of formative assessment held by biology teachers in secondary schools based on Gender.

Gender	N	Mean	Std.	t	Sig.	Remarks
Male	103	3.22	.86	0.035	0.83	Not Significant
Female	82	3.13	.94			

Table 3 shows significance value of 0.83 which is greater than 0.05 and this implies that no significant difference in the current conceptions of formative assessment held by biology teachers in secondary schools in Ilorin Metropolis based on gender. Hence, the null hypothesis is retained.

**Hypothesis Two:** There is no significant relationship between potential workload concerns among biology teachers and their conceptions of formative assessment in secondary schools in Ilorin Metropolis

**Table 4:** Pearson Product Moment Correlation on relationship between potential workload concerns among biology teachers and their conceptions of formative assessment in secondary schools in Ilorin Metropolis

Variables	Mean	Std. Dev	N	p-value
Potential workload concerns	3.07	1.16	185	.000
Conceptions of formative assessment	2.58	1.68	185	

The result of PPMC used to test null hypothesis one revealed the mean scores of 3.07 and 2.58 for potential workload concerns and conceptions of formative assessment with standard deviations of 1.16 and 1.68 respectively. From the analysis, the r-cal value was found to be greater than r-crit ( $0.161 < 0.195$ ). The p-value of .000 obtained was less than 0.05 level of significance. The result therefore shows that significant relationship exists between the two variables. The null hypothesis was retained.

## Discussion

The findings of the study revealed that formative assessment conception of biology teachers in secondary schools is positive. This may be due to that Biology teachers made this formative assessment importantly. This is in agreement with Lock and Munby (2000) observed changing assessment practices in the classroom, the finding indicated that teachers who discovered that their teaching attempt is matched with the concepts of formative assessment are more willing to undertake it.

Finding of the study revealed overall positive reception of biology teachers' conceptions in secondary schools. This may be due to that an indicative of an understanding among biology teachers' formative assessment is a dynamic and valuable tool for enhancing student learning experiences. This finding is in line with Dixon and Worrell (2016) who observed formative and summative assessment in the classroom and assessment practices for 21st century learning respectively consider that formative assessment, aims to increase students' learning by offering information to teachers and students for use as feedback to adjust teaching and learning. This may be due to that classroom assessment researchers, certain important demographic factors influence teachers' views on obstacles to implementing formative assessment in their classrooms.

The findings establish a consistent agreement among biology teachers on the impact of heavy teaching loads, administrative duties, overloaded schedules, and other workload-related factors. This may be due to that the biology teachers always willing to attended to the Students' needs in the formative assessment. This is in line with Alotaibi (2019) who observed teachers' perception of factors that influence the adoption of the formative assessment and the results shows that class size, workload, and availability of assessment tools are impediments to teachers' practice of formative assessment in the classroom.

## Conclusion

The findings align with the literature on formative assessment and its importance in enhancing student learning experiences. Positive conceptions among teachers indicate an

understanding of formative assessment as a valuable tool for improving teaching and learning. Additionally, the influence of workload concerns highlights the challenges teachers face in implementing formative assessment practices, which may impact the quality and depth of students learning experiences.

### Recommendations

Based on the findings of the study, the following recommendations are made;

1. Ongoing professional development programs focusing on formative assessment strategies and their benefits should be implemented. This will ensure both male and female teachers to have a robust understanding and are equipped with effective methods to integrate formative assessment into their teaching practices.
2. Administrative burdens on teachers should be reduced to free up time for the thoughtful planning and implementation of formative assessments. This could involve streamlining paperwork and reducing non-teaching duties.

### References

- Alotaibi, K. A. (2019). Teachers' perceptions on factors influence adoption of formative assessment. *Journal of Education and Learning*, 8(1), 74–86.
- Asare, E., & Afriyie, E. (2023). Barriers to basic school teachers' implementation of formative assessment in the Cape Coast Metropolis of Ghana. *Open Education Studies*, 5, 20220193.
- Azis, A. (2015). Conceptions and practices of assessment: A case of teachers representing improvement conception. *TEFLIN Journal*, 26(2), 129–154.
- Barnes, N., Fives, H., & Dacey, C. M. (2017). U.S. teachers' conceptions of the purposes of assessment. *Teaching and Teacher Education*, 65, 107–116. doi: 10.1016/j.tate.2017.02.017
- Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. doi:10.1080/0969594X.2018.1441807
- Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21, 5–31.
- Brown, G. T. L. (2008). *Conceptions of assessment: Understanding what assessment means to teachers and students*. New York, NY: Nova Science Publishers.
- Brown, G. T. L., & Harris, L. (2012). Student conceptions of assessment by level of schooling: Further evidence for ecological rationality in belief systems. *Australian Journal of Educational & Developmental Psychology*, 12, 46–59.
- Brown, G. T. L., & Hirschfeld, G. H. F. (2007). Students' conceptions of assessment and mathematics: Self-regulation raises achievement. *Australian Journal of Educational & Developmental Psychology*, 7, 63–74.
- Brown, G. T. L., & Remesal, A. (2017). Teachers' conceptions of assessment: Comparing two inventories with Ecuadorian teachers. *Studies in Educational Evaluation*, 55, 68–74. doi: 10.1016/j.stueduc.2017.07.003
- Brown, G. T. L., Irving, S. E., Peterson, E. R., & Hirschfeld, G. H. F. (2009a). Use of interactive-informal assessment practices: New Zealand secondary students' conceptions of assessment. *Learning and Instruction*, 19(2), 97–111. doi: 10.1016/j.learninstruc.2008.02.003

- Dixson, D. D., & Worrell, F. C. (2016). Formative and summative assessment in the classroom. *Theory into Practice*, 55(2), 153–159. doi:10.1080/00405841.2016.1148989
- Fulmer, G. W., Lee, I. C. H., & Tan, K. H. K. (2015). Multi-level model of contextual factors and teachers' assessment practices: An integrative review of research. *Assessment in Education: Principles, Policy, and Practice*, 24(4), 1–20. doi:10.1080/0969594X.2015.1017445
- Hussain, S., Shaheen, N., Ahmad, N., & Islam, S. U. (2019). Teachers classroom assessment practices: Challenges and opportunities to classroom teachers in Pakistan. *The Dialogue*, 14(1), 88–97.
- Israel, H. (2005). *Implementing continuous assessment in your teaching and learning situation in South Africa*. South Africa: Nelson Mandela Metropolitan University.
- Kibga, J. Y. K. (2004). *The role of practical assessment in teaching and learning of physics in O-Level secondary schools in Tanzania* (Unpublished M.E. (Science) dissertation). University of Dares Salaam, Tanzania.
- Lock, C., & Munby, H. (2000). Changing assessment practices in the classroom: A study of one teacher's challenge. *Alberta Journal of Educational Research*, 46(3), 267.
- Opre, D. (2015). Teachers' conceptions of assessment. *Procedia—Social and Behavioral Sciences*, 209, 229–233. doi: 10.1016/j.sbspro.2015.11.222
- Remesal, A. (2007). Educational reform and primary and secondary teachers' conceptions of assessment: The Spanish instance, building upon Black and Wiliam (2005). *Curriculum Journal*, 18(1), 27–38. doi:10.1080/09585170701292133
- Siarova, H., Sternadel, D., & Masidlauskaite, R. (2017). Assessment practices for 21st century learning: Review of evidence. *NESET II report*. Luxembourg, Europe: Publications Office of the European Union. doi:10.2766/71491
- Vandeyar, S., & Killen, R. (2003). Has curriculum reform in South Africa really changed assessment practices, and what promise does the revised National Curriculum Statement hold? *Perspectives in Education*, 21, 119–134.
- Vandeyar, S., & Killen, R. (2007). Educators' conceptions and practice of classroom assessment in post-apartheid South Africa. *South African Journal of Education*, 27(1), 101–115. Available at: <https://files.eric.ed.gov/fulltext/EJ1150092.pdf> (Accessed April 10, 2019).
- Walani, N. D. (2009). An investigation into classroom teachers' perception of the value of assessment for formative purposes in secondary schools in Solomon Islands (Unpublished master's thesis). University of Waikato.
- Wiliam, D., & Thompson, M. (2007). Integrating assessment with instruction: What will it take to make it work? In C. A. Dwyer (Ed.), *The future of assessment: Shaping teaching and learning* (pp. 53-82). Mahwah, NJ: Erlbaum.



**ISSN: 2504-8945**

Designed & Printed by  
NOUN Press, Abuja, Nigeria.  
*Email:* [nounpressltd@noun.edu.ng](mailto:nounpressltd@noun.edu.ng)