ICT DEPLOYMENT AND ACADEMIC PERFORMANCE IN LANDMARK UNIVERSITY

By:

OLAONIPEKUN, Oluwasegun Ayotola

19PGDC000051

SEPTEMBER 2021

ICT DEPLOYMENT AND ACADEMIC PERFORMANCE IN LANDMARK UNIVERSITY

By:

OLAONIPEKUN, Oluwasegun Ayotola

19PGDC000051

BEING A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTERS DEGREE OF BUSINESS ADMINISTRATION IN BUSINESS STUDIES

DEPARTMENT OF BUSINESS ADMINISTRATION

COLLEGE OF BUSINESS AND SOCIAL SCIENCES

LANDMARK UNIVERSITY, OMU-ARAN KWARA STATE

NIGERIA

SUPERVISOR: DR. EZE, C.S.

CO-SUPERVISOR: DR. SAJUYIGBE, D.S.

DECLARATION

I, (OLAONIPEKUN, OLUWASEGUN AYOTOLA), an (MBA BUSINESS ADMINISTRATION) Student in the ***(Department of Business Studies)***, Landmark University, Omu-Aran hereby declare that this thesis entitled "ICT deployment and Academic Performance in Landmark University" submitted by me is based on my original work and has not been publish in any other form either electronic or print media. Any material(s) obtained from other sources of work done by any other persons or institutions have been duly acknowledged.

_____

Student's Full Name and Matriculation Number

_____

Signature and Date

CERTIFICATION

This is to certify that this research work was carried out by OLAONIPEKUN, OLUWASEGUN AYOTOLA (Matric Number: 19PGDC000051**)** in the Department of Business Studies, College of Business and Social Sciences, Landmark University under our Supervision

_____ _____

Dr. C.S Eze

Main Supervisor Date

_____ _____

Dr. D.S. Sajuyigbe

Co-Supervisor Date

_____ _____

Dr C.S Eze

Head of Department Date

_____ _____

External Examiner Date

DEDICATION

This research is firstly dedicated to my Heavenly Father, who has made his grace sufficient for me all through this Academic Journey. I also want to specially dedicate this study to my Loving Wife and Daughter, Mrs Olaonipekun Temiloluwa and Elizabeth Olaonipekun for their Sacrifice, Love and Patience all through my Study.

Finally, this work is dedicated to my Spiritual Father and Chancellor, Landmark University, Dr. David Olaniyi Oyedepo for all his contribution to my Life and Career Pursuit.

ACKNOWLEDGEMENTS

First and foremost, I want to express my gratitude to Dr. C. S. Eze, the Head of Department who also serves as my Major supervisor. I appreciate all of the work that was put in to bring the project to completion. I'd also like to thank Dr. D. S. Sajuyigbe for his unwavering dedication to the completion of this study. Your compassion and advice were greatly appreciated.

I am immensely and indeed grateful to all Members of Staff of the Department of Business Studies; Dr (Mrs) .M. Adeyeye; Dr. H. Inegbedion; Dr. A.A. Eniola; Dr. .O. James; Dr. P. Fred; Mrs .L. Decster; Mrs. A.O. Peter; Mrs .T. Asiyanbola, Dr A. Otekunrin, Dr Lawal, Dr C. Okolugbo, Dr B. Babatunde; Dr A. Oyedokun. Your Academic leadership has been remarkable in the right direction.

I would also want to deeply appreciate Dr Ayeni for his commitment, unwavering help and support till the very end of my Academic Journey.

Further thanks go to other Staff and faculty in the Department of Accounting and Finance and University Wide Courses; I am very grateful for the tutelage.

To the Dean, School of Post-Graduate Studies, Prof. .C. Aremu and entire Staff of the School; thank you for admitting me into the School and for actualizing my desire of continuous development.

Finally, my biggest gratitude is to God Almighty for indeed his grace was sufficient for me all through this Academic Journey.

ABSTRACT

In Nigeria, where ICT growth lacks a solid basis, there is a need for curriculum and institutional-based program restructuring, particularly in terms of re-designing Tertiary Institution skills and tactics.. Apart from internet infrastructure, few private institutions are able to implement global best practices in teaching aids such as smart boards, online course compacts, technology-driven student administration and record management. Thus, leading to examination malpractice elimination and efficient course material management while resulting in student perceptions of learning. The research work seeks to investigate the impact of the adoption and use of Information and Communication Technology (ICT) on Learning using Uses and Gratification Theory and the Global Village Theory as the theoretical underpinning. The Study adopts a quantitative-descriptive research design. The population of the study consists of 3134 Undergraduate Students in the University and the sample size of 350 Students was randomly selected and data was analyzed using regression. The findings reveal that there is a significant influence of Smart boards on Students Academic Performance in Landmark University. The presence of Smart board does not influence Students Academic Performance with the reflection of a low beta values (beta = .077) with Tval (1.370) lower than 1.96, sig. .000 p < .05). Online Course-Compact has significant effect and enhances Students Academic Performance with high beta values (beta = .460) with Tval (9.172) higher than 1.96, sig. .000 p < .05) in Landmark University and finally the use of biometric data capturing for records has a significant influence on students' academic performance has a high beta value (beta = .230) with Tval (4.176) higher than 1.96, sig. .000 p < .05) in Landmark University. The Study recommends prioritizing lecturers and facilitators training capacity building programs in the use of ICT infrastructure in order to be a step head of students who are more tech-savvy to avoid compromising and manipulations of academic resources. Investment in cyber-security infrastructure should be a must in order to protect the integrity of students' and management records. Furthermore, it is advised that there should be a road map for reducing the use of paper-based examinations and providing computer-based assessment for theory and objective based examinations for students by 50% in the next 10years.

LIST OF TABLES

	CONTENT	PAGE
Table 4.1:	Analysis Response Rate	34
Table 4.2a:	Case Processing Summary	35
Table 4.2b:	Reliability Statistics	35
Table 4.3**:**	Frequency distribution according to Gender	35
Table 4.4:	Frequency distribution according to Age	36
Table 4.5:	Frequency distribution according to College/Faculty	37
Table 4.6:	Frequency distribution according to Level Distribution	37
Table 4.7:	Frequency distribution according to Gadget Owned	38
Table 4.8:	I understand how my learning will contribute to achieving the intended semester academic goals.	39
Table 4.9:	Lecturers discuss expectations for learning with students they lecture.	39
Table 4.10:	Lecturers actively seek knowledge and expertise from the students they manage in order to improve overall academic performance	40
Table 4.11:	Feedback and self-reflection are part of the routine of all lecture activities	40
Table 4.12:	Lecturers and Students share responsibility for learning.	40
Table 4.13:	Students have the resources (time, materials, tools, etc.) to apply learning to their learning process.	41
Table 4.14:	Landmark University measures the impact of students learning on achieving academic Pursuit	41
Table 4.15:	Management actively support learning through their words and actions.	41
Table 4.16:	I feel welcomed and respected.	42
Table 4.17:	I understand course expectations and how my performance is evaluated	42
Table 4.18:	I feel challenged to learn a lot in this course.	42
Table 4.19:	Course activities effectively promote my learning and interest in the subject.	43
Table 4.20:	The learning tools (e.g. course texts, notes, slides, videos, exams, projects, etc.) support my learning.	43

Table 4.21: I am invited to be an active participant in my learning (either face to face or online). 43
Table 4.22: I have opportunities to learn with and from other students in this course
Table 4.23: The feedback I receive on my work is useful to me for making changes and improvements. 44
Table 4.24: I know where to go for help in this course if, and when, I need it. 44
Table 4.25: I find communication with the Lecturers (e.g. office hours, email, Canvas, etc.) effectively supports my learning 45
Table 4.26: I made myself ready in all my subjects' activities. 45
Table 4.27: I pay attention and listen during every discussion. 45
Table 4.28: I want to get good grades in every subject. 46
Table 4.29: I actively participate in every discussion. 46
Table 4.30: Feedback and self-reflection are part of the routine of all lecture activities 46
Table 4.31: I enjoy homework and activities because they help me improve my skills in every subject. 47
Table 4.32: I exert more effort when I do difficult assignments. 47
Table 4.33: Solving problems is a useful hobby for me. 47
Table 4.34: I am more engaged when the smart board is being used for lectures. 48
Table 4.35: My favorite lectures are from the use of smart boards. 48
Table 4.36: Feedback and self-reflection are part of the routine of all lecture activities. 48
Table 4.37: I struggle to comprehend with the smart board usage. 49
Table 4.38: I would rather have lectures without smart board. 49
Table 4.39: My Lecturers struggle to make use of the smart board. 49
Table 4.40: The smart board is beneficial to my learning as a student. 50
Table 4.41: I have a computer or am able to get access to one easily on a regular basis. 50
Table 4.42: I am fairly comfortable with keyboarding. 50
Table 4.43: I believe that high quality learning can take place without face-to-face interaction 51
Table 4.44: I am able to go to class at times and locations that I choose instead of being tied to a set time and place 51
Table 4.45: I am able to go to class prepared because of Online Course Compacts 51
Table 4.46: Based on the available online course compact, I do not mind meeting my instructors or classmates in person. 52
Table 4.47: I am familiar with Landmark University Online Course Compacts 52

Table 4.48: My lecturers struggle to tally online course compacts with occurring lectures 52
Table 4.49: I ask questions when I have a problem or question from the provided online course compacts 53
Table 4.50: My learning ability and adaptability of is low (in comparison to expected use of the biometrics usage 53
Table 4.51: I am very dissatisfied with the situation within the university with the biometrics usage 53
Table 4.52: The number of Student's complaints within the last semester has increased strongly 54
Table 4.53: Reputation of our University in eyes of the customers has increased from the engagement of our Biometrics Records. 54
Table 4.54: Absenteeism is in our classes (relative to lecture) is very low. 54
Table 4.55: Biometrics Records has made knowledge comprehension very high. 55
Table 4.56: Biometrics Records has made students trust in leadership low. 55
Table 4.57: Perception of the biometric records by the University has increased Student's Academic performance 55
Table 4.58: Landmark University conduct biometrics records for all academic functions 56
Table 4.59: Model Summary 57
Table 4.60: ANOVA[a] 57
Table 4.61: Coefficient Table for the Independent Variable (smart boards) 58
Table 4.62: Model Summary 59
Table 4.63: ANOVA[a] 59
Table 4.64: Coefficient Table for the Independent Variable (Student Learning Experience)
Table 4.65: Model Summary 60
Table 4.66: ANOVA[a] 61
Table 4.67: Coefficient Table for the Independent Variable (Biometric records) 62

LIST OF FIGURES

	CONTENT	PAGE
Figure 4.1:	Respondents Gender Distribution	36
Figure 4.2:	Respondents Age Distribution	36
Figure 4.3:	Respondents College/Faculty Distribution	37
Figure 4.4:	Respondents Level in the University	38
Figure 4.5:	Distribution of Gadgets Owned by Respondents	38

TABLE OF CONTENTS

CONTENT			PAGE
Title Page			i
Front Page			ii
Declaration			iii
Certification			iv
Dedication			v
Acknowledgement			vi
Abstract			vii
List of Tables			viii
List of Figures			xi
Table of Contents			xii
CHAPTER ONE: INTRODUCTION			**1**
1.1	Background to Study		1
1.2	Statement of Problem		2
1.3	Objectives of Study		2
1.4	Research Questions		3
1.5	Research Hypotheses		3
1.6	Operationalization of Research Variables		3
1.7	Significance of Study		4
1.8	Scope of Study		4
1.9	Limitation of Study		5
CHAPTER TWO: LITERATURE REVIEW			**6**
2.0	Introduction		6
2.1	Conceptual Framework		6
	2.1.1	The Concept of Information and Communication Technology (ICT)	6
	2.1.2	Etymology of the Word ‘ICT’	**7**
	2.1.3	Configuring ICT for Educational Development.	8
	2.1.4	Mapping the Teachers' Capacity ICT Model	9
		2.1.4.1 Stages of ICT Usages.	9
		2.1.4.2 Pedagogical Usages of ICT.	10

2.1.5 A Frame Work Based On Functional Approach of ICT Usage 11
2.1.6 Deployment of ICT Management Systems for Learning 12
2.1.7 Factors to Be Considered When Developing ICT-Integrated Classroom Models 13
2.1.8 Integrating ICT into the Classroom in Developing Countries 14
2.1.9 Types of ICT Learning Infrastructure 15
2.1.10 The Influence of ICT on Students Learning Experience 17
2.1.11 ICT development in Nigerian Universities 18
2.1.11.1 National Strategy 18
2.1.11.2 Human Capital Development 19
2.1.11.3 Infrastructure 20
2.1.11.4 Research and Development 21
2.1.11.5 Awareness and Communication 21
2.1.11.6 Governance 21
2.1.11.7 Financing 22
2.1.11.8 Monitoring and Evaluation 22
2.1.11.9 A Critical Review of the National Policy on ICT in Education 22
2.2 Theoretical Framework 23
2.2.1 The Global Village Theory 23
2.2.2 The Uses and Gratification Theory 24
2.3 Emperical Framework 24
2.3.1 ICT in Nigerian Institutions 24
CHAPTER THREE: METHODOLOGY 28
3.1 Introduction 28
3.2 Research Design 28
3.3 Research Philosophy 28
3.4 Research Strategy 28
3.5 Research Method 29
3.6 Population of the Study 29
3.7 Sample Size Determination 29
3.8 Sources of Data Collection 30
3.8.1 Primary Data Collection 30
3.9 Validity of Research Instrument 31

3.10 Reliability of Research Instrument 32
3.11 Method of Data Analysis 32
3.12 Ethical Issues. 32
CHAPTER FOUR: PRESENTATION OF RESULTS AND ANALYSIS 34
4.1 Introduction. 34
4.2 Analysis Response Rate. 34
4.3 Reliability Test 34
4.4 Demographic Profile of the Respondents 35
4.5 Descriptive Analysis of Research Variables Based ICT Deployment and Academic Performance 39
4.6 Hypothesis Testing 58
4.6.1 Test of Hypothesis One 58
4.6.2 Test of Hypothesis Two 61
4.6.3 Test of Hypothesis Three 63
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION and SUGGESTIONS FOR FURTHER STUDY 66
5.0 Introduction 66
5.1 Summary of Findings 66
5.2 Conclusions 67
5.3 Recommendations 67
5.4 Suggestion for Further Study 68
REFERENCES 69
APPENDIX 1 74

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The deployment of Information Communication Technology (ICT) as learning aids in Nigeria's tertiary institutions are not only becoming popular, but also a selling point for all tertiary institution especially Private tertiary institutions to persuade prospective students and a yardstick for effective learning.

Over three decades ago, the National Universities Commission (NUC) introduced the computerized Management Information System (MIS) to Nigerian Universities. This was occasioned by the joint conference organized by the NUC and the British Council in Kaduna in 1987. In conjunction with Overseas Development Administration (ODA), the project officially took off in 1989 in four pilot universities namely: University of Ilorin, Lagos, Nigeria (Nsukka), and Federal University of Technology, Minna (Mac-Ikemanjima, 2005).

In effect, according to (Donatus and Onyekachi, 2019) defined ICT as the way students and teachers (stakeholders) in the education sector share study materials or other related academic information or knowledge using electronic mailing (e-mail), social media network, multi-media messages, SMS, voice call, and other interactive application platform using electronic devices. This submission is also supported by UNESCO in Egoeze et al. (2018) as a range of hardware equipment –personal computer, scanners, digital camera; software –database programme, multi-media programme; and telecommunication infrastructure –phones, faxes, videoconferencing equipment, and web cameras, which enable us to access, retrieve, store, organize, operate, present, send material and communicate locally and internationally through digital media.

Private institutions today are maximizing this avenue in delivering and supporting academic efficiency through various e-learning platforms, smart classrooms, e-libraries, attendance capturing devices, online course compact devices and other electronically enabled tools designed for students' academic excellence. It must be noted that few private institutions with regards to Africa are able to adopt global best practices in teaching aids such as smart boards, smart classrooms, technology-driven student administration and record management with the goal of eliminating examination malpractices, and efficient course material management by deploying internet infrastructure (UNESCO, 2018).

Aiming to aid learning through the examination of determining how effective these infrastructures were in changing student academic performance in the engagement of ICT

used in learning; the deployment of smart boards in classrooms, online course compacts, and biometrics records is perceived to be needed for the 21st century educational attainment.

These developments in ICT have changed and impacted higher education in several ways, according to Donatus and Onyekachi (2019). This includes increasing access to learning material, improving and ensuring that educational resources are available in line with enabling meaningful discussions and communications among the learned and learners. It can be posited that the out-dating the traditional educational system and ensuring that students are better prepared for contemporary society. Ahmed (2009) has asserted that the use of ICT makes administrative and teaching process more flexible, reduced running time, and more cost effective, and as such, most of the universities are trying to tap into the benefits of ICT.

1.2 STATEMENT OF PROBLEM

In Nigeria, where ICT development is lacking solid footstool because of its linkage to western practices and bearing the outcome policies, there is a need for curricula and institutional based programmes restructuring particularly, as relating to re-design of skills and strategies for the Tertiary Institutions.

Abdulla, Al-Hawaj, Wajeeh, and Twizell (2008), state that ICT has the potential to transform the nature of education: Where and how learning takes place and the roles of students and teachers in the learning process.

Private Higher education institutions have responded differently to ICT awareness and usage. Fewer research studies have ventured into investigating students' perceptions of the use of ICTs by academics in Private higher education institutions in Nigeria (Alfred, 2014). Besides just deploying internet infrastructure, few private institutions are able to adopt the global best practices of teaching aids such as smart boards and smart classrooms, technology driven student administration and record management, eliminating examination malpractices and efficient course material management, hence the effect on student perception on learning. In context, Landmark University's ICT infrastructure development in aiding learning is a subject of focus as to how effective these infrastructures helped in changing student perception of ICT used in learning and in particular, the deployment of smart boards in classrooms, online course compact and biometrics records

1.3 OBJECTIVES OF THE STUDY

The main purpose of this study is to find out the effect of ICT deployment on Academic Performance of Students in Landmark University. Specifically, the study is;

1. To ascertain the impacts of smart boards on students' academic performance.
2. To determine the degree to which online course compact enhances students' academic performance.
3. To explore the extent to which biometric records influences students' academic performance.

1.4 RESEARCH QUESTIONS

The following research questions were posed to guide the study.

1. How has the deployment of smart boards in classrooms impacted student academic performance?
2. How has the provision of online course-compact enhanced students' academic performance?
3. To what extent has biometric records influenced students' academic performance?

1.5 STATEMENT OF HYPOTHESES

In order to carry out the research effectively, the under listed hypotheses are stated in alternate forms below:

H_I: The use of smart boards has no significant impact on students' academic performance.

H_2: The provision of online course-compact does not significantly enhance students' academic performance.

H_3: Biometric records does not significantly influence students' academic performance

1.6 OPERATIONALIZATION OF RESEARCH VARIABLES

ICT deployment and Academic Performance in Landmark University was operationalized into a mathematical equation as follows:

y= f (x) Where:

y represents Academic Performance in Landmark University by the University students while x information communication technology (ICT) represents tools and techniques that are adopted in the University environment

X = ICT (Independent Variable)

Y = Academic Performance (Dependent Variable)

The inclusion of ICT into the learning Context includes: smart board, online course compact and biometric records.

Student academic performance Therefore, the operationalization of the variables will be represented as:

y = f(x) ……...…… Where,

x = Independent variable

y = Dependent variable

Hence: Yi=f(Xj), i=1, ….4; j=1, ……

X_1 = Smart board

X_2 = Online Course Compact

X_3 = Biometric Records

While

Y = Student Academic Performance

1.7 SIGNIFICANCE OF THE STUDY

ICT contribution, though not the usual case, has values that tend not to influence learning with respect to the University community as a whole. This study is significant to the following;

Private Universities

The significance of the study lies in the perception of students on the deployment of ICT in Private University on learning through the use of various ICT infrastructures such as internets facilities, computers, smart boards in classrooms and how effective has this infrastructure on their academic performance.

NUC

The benefit of the study to Nigerian University Commission is unique; because conceptual model has the potential to serve as a guide to commission with a platform for further investigation. In addition, the itemized learning parameters provide a dynamic approach towards investigating into the concept. The study focused in filling a tactical gap in literature of ICT adoption as it provides evidence from emerging economy.

Tertiary Institutions

In Nigeria, where ICT development is lacking solid footstool because of its linkage to western practices and bearing the outcome policies, there is a need for curricula and institutional based programmes restructuring particularly, as relating to re-design of skills and strategies for the Tertiary Institutions.

1.8 SCOPE OF THE STUDY

This study focused on the effect of the deployment ICT infrastructures in a learning environment with a specific attention to the student in a private institution. The Landmark University, Omu, aran, Kwara state, Nigeria was chosen because of their proximity to the

researcher's location and high level of patronization in ICT related apparatus amongst other universities around the selected location.

Secondly, private Universities are such that cannot be overlooked, especially in an emerging economy because of the high level of education deficit in the nation in terms of intellectual development and also amongst other sectors. Also, it is a sector in which the government finds it hard to realize its income in terms of tax and benefit. The research work targeted at the Nigerian private schools amongst others who have invested in the diverse learning apparatus in the educational sector in Nigeria.

The geographical location in this work is North Central, Nigeria and aside its proximity, the diversity of involved entrepreneurs in the electronics market, time constraints and the availability of funds at the disposal of the researcher also serve as the basis for its use. The respondents to be studied in the course of the research cut across students at all in Landmark University located in North-central, Nigeria.

1.9 LIMITATION OF THE STUDY

In the course of the study the researcher is envisaged to experiencing certain problems. A major lapse in the study is the predicted attitude of respondents to questionnaires.

.

CHAPTER 2
LITERATURE REVIEW

2.0 Introduction

The chapter consists of the conceptual, empirical and theoretical framework. Other relevant information about the perception of student towards the deployment of ICT in Landmark University; a private tertiary institution in Nigeria was also harnessed as a guide from established works of literatures. The next session delves on the conceptuality of the study.

2.1 Conceptual Framework

The conceptual framework of this research study focuses on the concepts or (and) ideas which relate to the study of the general overview of how student perceived the deployment of ICT as learning aid in a tertiary institution in a developing society such as Nigeria. The session includes the concept of Information and Communication Technology (ICT) to student academic performance smart boards for learning, online upload of student learning materials, attendance biometric data capture and other student e-management tools on students' academic performance.

2.1.1 The Concept of Information and Communication Technology (ICT)

The concept of ICT in the 21st century by Tughgba Ahine, (2014) abhors many definition of its practicability and necessity in every human lives. It in line with this that the perception requires many definitions. From the stocks of Cambridge Dictionary, (2021) , it is regarded as the use of computers and other electronic equipment and systems to collect, store, use, and send data electronically. Inquiring into this means that the diverse set of technological tools and resources used to transmit, store, create, share or exchange information. UNESCO (2006) provided a catalogue of what the term ICT means without limitation to technological tools and resources, such as computers, the Internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players and storage devices) and telephony (fixed or mobile, satellite, visio/video-conferencing, etc.).

OECD (2012) opines that IC refers to technologies that provide access to information through telecommunications. They made it known that there exists a similarity between Information Technology (IT), but the addition of the communication redefines the scope. This should have been a limitation but communication ensues a broader perspective of life called living. This study adopts the definition of ICT as the integration of information processing, computing and communication technologies (Ogundana et al., 2015). It must be noted that

with the intrusion of ICT into our daily lives, has resulted into a fast alteration of the way we learn, work and live-in society and are often spoken of in a particular context. This are represented in education, health care or libraries while covering any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form (Ogbomo et al., 2008).

2.1.2 Etymology of the word 'ICT'

The phrase "information and communication technologies" has been used by academic researchers since the 1980s. The abbreviation "ICT" became popular after it was used in a report to the UK government by Dennis Stevenson in 1997 and revised in National Curriculum for England, Wales and Northern Ireland in 2000. Royal Society (2012) recommended the discontinuation of the use of the term "ICT" in British schools "citing its negative connotation attraction. Though, "information technology" evolved in the 1970s and has its roots in the alliance of the military and industry in World War II for the development of electronics, computers, and information theory (Deen-Swarray et al., 2013). It must be noted that the aftermaths resulted on the military being the major source of research and development funding for the expansion of automation to replace manpower with machine power.

Divayana et al., (2021) posits that prior to this time, communication had been improved upon by the development of the telegraph (1837) and telephone (1876) permitted communication by wire over long distances almost instantaneously which was an improvement over traditional means of communication done by ship, rail and pony express. Then came the wireless telegraph (1895), shortwave radio (1926) and more reliable high-frequency microwave radio (1946). The birthing of more reliable high-frequency microwave radio overcame the physical constraint of connecting every point by wire or cable. In the 1970s, mobile communication handsets were developed, as was the basic technology foundation for the Internet and the World Wide Web. Both mobile and Internet communication have grown rapidly since their introduction in the 1980s to the point where mobile access to the Internet (e.g., smartphones) is the dominant and fastest growing form of communication.

This brief etymology however helps to provide a deeper understanding of the subject of our research which according to Udochukwu, et al., (2019) also described ICT as a computer based innovative learning process for providing electronically enabled, well-designed, learner-centered and interactive learning environments to any person, anywhere, whenever by

using the ICT tools (comprising of internet and digital technologies) with respect to instructional design ethics.

Consequently, for the purpose of this study and in respect to the deployment of ICT for education purposes, we would align with Adeyemi and Esere (2013) in their definition of ICT-driven education as the electronic mode of knowledge sharing and transmission, which may not necessarily involve physical contact between teacher and student. The concepts "computer-aided teaching" and "computer-aided learning" have given birth to computer-aided instruction, which represents a combination of both teaching and learning. Access to instruction through the internet is flexible, ensures broad viability and availability of educational opportunities. (Jegede, 2002).

2.1.3 Configuring ICT for educational development

Different literatures (Ilavarasan & Parthasarathy, 2012; Richard, 2010; Tughgba Ahine, 2014; Vibulphol, 2016) provide evidence and effectiveness of the deployment of ICT in education and its ability to help transform the learning environment through flexibility and ease of communication between teachers and students. There is however, a strategy through which this can be achieved. It is important to present the strategy for which ICT deployment should be used to maximize and achieve its purpose. UNESCO, (2002) provided a model that can be useful in determining the stage of ICT development attained by a country, a district, or even an individual institution. Studies (Divayana et al., 2021; Hagsten & Kotnik, 2017; Richard, 2010) of ICT development in both developed and developing countries identified four broad approaches through which educational systems and individual institutions adopts the use of ICT. These steps are elaborated below;

1. **Emerging Stage**

This is the beginning stage of ICT development by institutions through the acquisition and purchase of computing equipment, software and hardware's. This is when university administrators and the academia start to explore the use of ICT for academic purposes. More than 95% of Private institutions have explored this stage in Nigeria and according to Udochukwu, et al., (2019) when identifying the importance of ICT in higher institution believed that; ICT education can enable broader participation and fair access to acquire higher education by providing the students (learners) the opportunity to start learning and to select courses and necessary support in terms of the students' requirements.

2. Applying Stage

This stage identifies Schools which have appreciated the contribution of ICT to learning enter into this phase, especially its adoption by teachers in their routine task in the school for learning purposes in various subject areas with specific tools and software such as drawing, designing, modelling and application specific tools. Teachers largely dominate the learning Emerging Applying Infusing Transforming Technology Pedagogy environment.

3. Infusing Stage

At the third stage, the infusing approach involves integrating or embedding ICT across the curriculum, and is seen in those schools that now employ a range of computer-based technologies in laboratories, classrooms, and administrative offices. The curriculum begins to merge subject areas to reflect real-world applications. In the infusing approach to ICT development, ICT infuses all aspects of teachers' professional lives in such ways as to improve student learning and the management of learning processes.

4. Transforming Stage

Schools that use ICT to rethink and renew school organization in creative ways are at the transforming approach. ICT becomes an integral though invisible part of daily personal productivity and professional practice. The focus of the curriculum is now learner-centred that integrates subject areas in real-world applications.

2.1.4 Mapping the Teachers' Capacity ICT Model

According to Divayana et al., (2021), the development of teachers' capacity in harnessing information and communication technology can be mapped into

(a) Stages of ICT usages

(b) Pedagogical usages of ICT.

2.1.4.1. Stages of ICT Usages

This stage highlights 4 broad stages in the way that teachers and students learn about and gain confidence in the use of ICT are;

1. Becoming aware of ICT

In the initial phase, teachers and learners become aware of ICT tools and their general functions and uses. In this stage, there is usually an emphasis on ICT literacy and basic skills. This stage of discovering ICT tools is linked with the emerging stage in ICT development.

2. Learning how to use ICT

Following on and from the first stage comes the stage of learning how to use ICT tools, and beginning to make use of them in different disciplines. This stage involves the use of general

or particular applications of ICT, and is linked with the applying stage in the ICT development model.

3. Understanding how and when to use ICT

The next stage is understanding how and when to use ICT tools to achieve a particular purpose, such as in completing a given project. This stage implies the ability to recognize situations where ICT will be helpful, choosing the most appropriate tools for a particular task, and using these tools in combination to solve real problems. This stage is linked with the infusing stage in the ICT development model.

4. Specializing in the use of ICT

The fourth and the last stage involves specializing in the use of ICT tools which occurs when one enters more deeply into the learning environment that creates and transforms the learning situation with the help of ICT. This is a new way of approaching teaching and learning situation with specialized ICT tools and is linked with the transforming stage in the ICT development model.

2.1.4.2. Pedagogical Usages of ICT

Studies of teaching and learning in schools around the world identify four broad stages in the way the teachers and learners use ICT as a support to teaching and learning (Bakar, 2018), which are;=

1. Supporting work performance

In the initial phase, teachers use productivity tools such as word processor, visual presentation software, spreadsheet, database, email etc. to support their daily work performance. In this initial stage, there is usually an emphasis on basic operations of electronic office software.

2. Enhancing teaching

Following on and from using productivity software, comes the stage of learning how to use and develop computer assisted learning software and beginning to make use of such software in different disciplines. This stage involves the technique of integrating computer-based learning in the traditional instructional process, and is linked with the applying stage in the ICT development model. Various instructional packages were selected, developed and used to enhance traditional classroom teaching.

3. Facilitating learning

The next stage involves using various types of instructional software to facilitate student learning. The key point is that the teachers need to learn how to choose the most appropriate tools for a particular task, and using these tools in combination to solve real life problems. This stage implies the ability to recognize situations where various multimedia, simulation and modelling software can be utilized for teaching and learning. This stage is linked with the infusing stage in the ICT development model.

4. Creating innovative learning environments

The fourth and last stage involves specializing in the use of network-based resources to create meaningful environment with rich affordable for innovative learning models so that it occurs when one enters more deeply into the shared learning environment that creates and transforms the learning situation. This is a completely new way of approaching teaching and learning using technology. It helps to develop, deliver and manage open & flexible learning program. This stage is linked with the transforming stage in the ICT continuum model

2.1.5 A Frame Work Based on Functional Approach of ICT Usage

Several attempts have been made to classify the functions of ICT in education in the literature, However, the most comprehensive and well-defined classification according to Jager and Lokman (1999) describes the following functions of the use of ICT in education: (a) ICT as Object (b) ICT as Assisting Tools (c) ICT as Management of Learning and (d) ICT as Medium of Teaching & Learning. More than three decades ago, computers and related information technologies were introduced to educators for direct teaching and learning purpose. It started with CAL/CBT/CAI, then moved to Multimedia courseware and finally to Web Based instruction & Computer Mediated Communication (CMC) system. Using CAI for drill and practice of basic skills can be highly effective according to a large body of data and a long history of use Kulik (1994). Students usually learn more, and learn more rapidly, in courses that use computer assisted instruction (CAI). This has been shown to be the case across all subject areas, from preschool to higher education, and in both regular and special education classes. Effective instruction requires presenting information, guiding the learner, practice, and assessment of student learning. The use of a computer to provide any combination of these factors may be termed computer-assisted instruction. It should be noted that there is no requirement that the computer provides all of these elements. Rather, any combination of these can be appropriate computer intervention in the learning process. Interactivity, flexibility and learner control is the hallmark of these technologies. The application of educational technologies to instruction has progressed beyond the use of basic

drill and practice software, and now includes the use of complex multimedia products and advanced networking technologies. Today, students use multimedia to learn interactively and work on class projects. They use the Internet to do research, engage in projects, and to communicate. The new technologies allow students to have more control over their own learning, to think analytically and critically, and to work collaboratively. An increasing body of evidence by Alessi and Trollip (1985) suggests positive results of the ICT integration with teaching and learning.

2.1.6 Deployment of ICT management systems for learning

The goal of every academic environment is the ability to provide effective teaching and learning experience for both teachers and students which is a justification for resources and time invested, hence the use of ICT for;

- Universal access to high quality education.
- Teachers' professional development.
- Efficient education management in terms of governance and administration.
- Promotion of equity in education.

However, the role of technology cannot be overemphasized in providing a complete ICT management system which according Anagbogu, German-James & Bisong, Anthony. (2020) said A complete learning system includes factors such as the following and with which the most successful use of technology to support teaching and learning and reduces poor perception; these include; technology integration, physical arrangements of the environment as well as the students to allow a mix of individual, small group, and large group work, curriculum and specification of learning progressions, pedagogy appropriate for the content to be learned, professional development, coaching, and mentoring around pedagogy and content knowledge for teaching, aligned assessments and ways to use them to adapt instruction, school leadership and professional culture.

Effective learning environments elicit students' intuitive ideas and related experiences while providing new experiences that cause them to question those ideas, helping them to understand that there may be common situations they aren't yet able to explain. This can set the stage for students to use new knowledge to reorganize and modify their existing ideas, creating increasingly productive mental models (Bransford, Brown and Cocking. (Eds.) (2000). Technology can support this process by asking students to reason about many different situations and using each student's response to diagnose the set of ideas that a

student hold. Technology can then provide students with counter examples and contrasting arguments for naive ideas that do not correspond to experts' understanding of the concept Bereuter (2002); Debarun, Dhara & Santra, (2018) said the primary objective of the educational institutions is to deliver knowledge in the most effective manner through proper utilization of their input resources comprising teachers, classrooms, libraries, and laboratories. Every program has specific outcomes, but the most common outcome is to inculcate knowledge among the incumbents for further studies or professional competencies. Conventional strategies for instructing were common before twentieth Century, however, fast advancement occurred from the mid of twentieth Century in the field of software engineering, media communications and data innovation that are changing the customary arrangement of training into digitized framework in making the coveted results increasingly powerful and effective.

2.1.7 Factors to Be Considered when Developing ICT-Integrated Classroom Models

Hyunjin Cha , Taejung Park ,and Jongwon Seo (2020) highlighted these factors as :

(i) **Status and policies in ICT education:** depending on the current status of ICT education policies in the countries. In particular, experts stated that the education policy on such factors as the teacher's status and roles could influence forming the social culture of the country for ICT in education.

(ii) **ODA goals and priority setting:** Experts also shared the common view of the need to carefully consider the aims and directions of ODA projects. They all stated that it is important to clarify the objective of the ODA project, determine the direction of the ODA project, and establish the host organization in the beneficiary developing countries

(iii) **Selection of schools**: Experts argued that the problems and issues to be tackled might be different depending on the school of the partner country in which ICT-integrated classrooms will be built, since the environment, infrastructure, community culture, and regional characteristics are very different

(iv) **Infrastructure and Technical Challenges:** In order to prepare for ICT-integrated classrooms, the status of infrastructure construction of a given developing country is very important. Most of the experts commented that electricity and network accessibility are the most basic and essential elements, and that the least developed countries are forced to focus on building ICT-integrated classrooms in urban areas. In addition, when

building an ICT-integrated classroom, it was mentioned that environment factors such as the weather, temperature, and light of the country need to be taken into consideration.

(v) **Pedagogical Methods:** Most experts pointed out that ICT-integrated classrooms need to be prepared to meet the requirements of developing-country schools regarding teaching and learning methods. It was emphasized that it is necessary to cope with the fact that the teaching and learning situation is very different for each country. Therefore, understanding the present situation and requirements of the teaching and learning aspects of the country may determine the success or failure of ICT-integrated learning.

Indeed, ICT-integrated learning environments and spaces such as classrooms should be designed and developed so as to address the innovation and sustainability of schools in developing countries. Good educational design is needed to ensure that what the participants—including policy-makers, teachers, and students—need, seek, and have achieved is aligned with the nested set of learning spaces, facilities, resources, and even arrangements Goodyear and Retalis (2010)

Against this backdrop, when policy-makers decide to invest in ICT and apply ICT to education initiatives, including ICT for educational development (ICT4ED) under ODA projects, there are many variables to be considered, such as;

(i) Increasing access through distant learning.
(ii) Enabling a knowledge network for students.
(iii) Training teachers.
(iv) Broadening the availability of quality education materials.
(v) Enhancing the efficiency and effectiveness of educational administration and policy.
(vi) Social skills.
(vii) Research and development.
(viii) Professional development.
(ix) Policy and strategic planning.

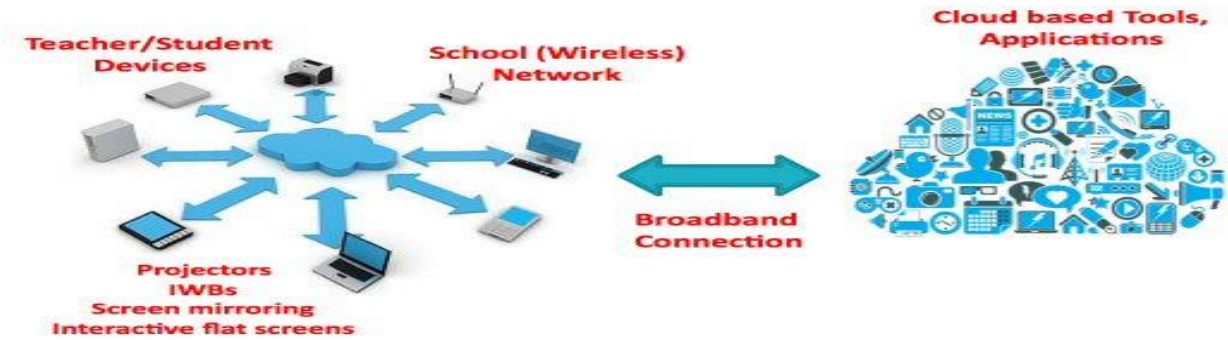
2.1.8.. Integrating ICT into the Classroom in Developing Countries

Since Nigeria is a developing country, it will not be out of place to look at the norm base on the general bias that our education is not advanced, hence the limitation of deploying ICT for learning purposes and there are two viewpoints according to Cha , Park and Seo (2020) on conducting projects of ICT for educational development (ICT4ED) in developing countries

with Some educational practitioners insist that ODA in the education sectors should focus on the traditional teaching and learning environments, since there is often a great lack of classrooms and resources Evoh, (2007). They also argue that the educational environments in developing countries do not afford opportunities to integrate ICT into education due to limited infrastructure, network and electricity problems, a lack of trained human resources, etc. Salam, Zeng, Pathan, (2018). Secondly, international organizations, including UNESCO, have conducted a variety of ICT4ED projects to promote the transformation of education in developing countries (UNESCO, 2018). There is then a gap between these two views as noted by Yim (2015) due to differences in the evaluation of the influence of ICT on educational objectives.

However, previous studies have demonstrated that ICT might play a broader role in transforming educational systems in partner countries Kozma (2008) Kozma (2011) insists that ICT has made significant impacts on the global economy by transforming economic systems and social paradigms in alignment with ICT. In fact, ICT-integrated classroom construction and implementation initiatives not only involve technical matters but are more multifactorial Rodríguez, Nussbaum and Dombrovskaia, (2012). Indeed, the purpose of such initiatives should be considered in the broader and wider context of the partner country from a holistic viewpoint Kozma (2008), Tondeur, Valcke and Braak, (2008). In other words, when ICT for educational development (ICT4ED) projects and official development assistance (ODA) programs with the use of ICT in education are considered, it is essential to establish a fundamental framework that can provide educational practitioners and policy-makers with a tool to think about implementing ICT in education in alignment with other components of the educational system.

2.1.9 Types of ICT leaning infrastructure



Source: Ogbomo et al., (2008)

Overview of ICT infrastructure areas for schools

The image adopted from Ogbomo et al., (2008) highlights some key ICT areas for schools, including school wireless networks, which connect teacher and student devices via broadband to cloud based tools and applications. While each school is unique in terms of size, location and where they are in terms of using ICT, there are some common shifts and trends that are happening in how schools are using ICT. These include:

- Increased use of **cloud-based tools and applications** by schools
- The importance of **fast/reliable broadband** to connect with cloud-based applications
- Use of **mobile computing devices** by teachers and students
- Importance of suitable **Wi-Fi networks** within schools to support **mobile learning**
- Changes in how **screens are being mirrored** and **alternatives to projectors** in classrooms

Cloud based tools and applications

Schools are increasingly using a wide range of useful cloud-based tools and applications to support teaching and learning.

Broadband

Fast, reliable broadband is critical to accessing online resources for learning.

Mobile Learning Devices / BYOD

Increasing numbers of schools are now using mobile devices in classrooms in preference to desktop PCs. Also, tablets are being purchased increasingly in preference to laptops as they provide schools with alternative options to support mobile learning. A shift which is gaining momentum is to allow pupils to bring in their own devices (BYOD) for learning.

Wireless / Wi-fi Networks

To support effective learning using mobile devices a ‘fit for purpose’ Wi-Fi network is now critical in schools. Wi-Fi systems connect mobile devices to online resources via the broadband connection and as such mobile learning, school Wi-Fi, broadband and use of cloud applications are all inter-dependent. It is important that if schools are purchasing a wireless network that they seek independent advice.

Presenting in the Classroom

Teachers are using a range of interactive approaches for ‘presenting’ in classrooms. While interactive whiteboards (IWBs) are still fit for purpose when used effectively, technologies such as Apple TV or other mirroring approaches can enable teacher or student screens to be mirrored wirelessly to a large screen. Also, large interactive flat screens (though more

expensive to purchase) can provide an alternative to IWBs and/or a projector for new purchases.

2.1.10 The Influence of ICT on Students learning experience

Anagbogu, German-James and Bisong, (2020) stated that Student access to technology is no longer a privilege: it is a prerequisite for full participation in high-quality education opportunities. Increasingly, important learning resources used by students and teachers are digital, making access to the Internet as basic as access to a library. Interactive learning is especially effective when the skills and concepts to be learned have a visual component and when the software incorporates an inquiring-based instructional design. Use of online telecommunications for collaboration across classrooms in different geographic locations has also been shown to improve academic skills. Advances in technology have really revolutionized the way we teach and how we learn in many ways; for instance, increasing access to post-secondary instruction, improving the availability of educational resources, and facilitating meaningful interaction among learners.

Harnessing the power of technology has become a critical strategy among institutions eager to offer an affordable, efficient, and flexible learning environment for rapidly growing and diverse communities of learners. Traditional classroom instruction treats "learning" as a process of acquiring content, either from teachers or from textbooks. Learning research, on the other hand, demonstrates that learning is an active process of integration, with new technology interpreted through the lens of prior experiences and conceptions (Abbitt and Ophus, 2008).

Alfred (2014) is his study opined that, it is imperative that universities invest massively in ICT for teaching and learning. Research show that those institutions that invest heavily in ICT have better students' academic performance and throughput rates. There is need for schools to expose students to more technology for learning prior to entry into university. This has the advantage of reducing withdrawal but increasing their motivation, belonging, and concept mastery. There is also a need to capacitate academics technologically through increasing skills that enhance technology use in learning and teaching. Institutions should promulgate policies that compel academics to utilize ICT for teaching and learning.

He further suggested that promotion process could be tied to ICT use during lectures and in assessment. His assessment of South African universities on their receipt of state funding in form of the Teaching and Learning Grant, he strongly advised that these institutions should of necessity utilise the bulk of this grant in skills development for lecturers as well as equipping lecture halls with latest technology for teaching. Although, this is not the case for private

institutions in Nigeria as they do not enjoy any government funding but are the sole responsibilities of the owners, and considering the huge financial requirements of ICT infrastructure; reason why many are inadequately equipped with latest ICT equipment to aid student learning experience.

For Nigerian educational institutions, especially for the privately owned, the development in the use of ICT provides an opportunity to overcome the perennial problem of non-availability of staff, books and even the lack of equipment in the laboratories (Massaquoi, 2006). Some of the strategies for promoting technology in education include the rapid deployment of ICT infrastructure, training of teachers to use ICT and the provision of varied learning resources and services. ICT can be used as a tool in higher education management to track students and faculty as well as in the classroom to facilitate teaching and learning

Udochukwu, et al (2019) made it known that when identifying the importance of ICT in higher institution believed that;

a. ICT education can enable broader participation and fair access to acquire higher education by providing the students (learners) the opportunity to start learning and to select courses and necessary support in terms of the students' requirements.
b. ICT can provide a virtual environment that supports students to take innovative and creative learning with others by the means of simulations of real time events, online programmes, or teamwork with other researchers and education providers.
c. ICT can offer personalized learning experience for all students, including the physically challenged, those in remote or far distance location from their institutions of learning.
d. ICT based learning offers the opportunity for a range of academic tools that can motivate and encourage teachers and students to become creative, innovative and resourceful

2.1.11 ICT Development in Nigerian Universities

2.1.11.1 National strategy: Federal Ministry of Education

The Federal Government of Nigeria adopted a National Information and Communication Technology (ICT) Policy aimed at providing a framework for streamlining the ICT sector, and enhancing its ability to catalyse and sustain socio-economic development critical to Nigeria's vision of becoming a top 20 economy by the year 2020 (Divayana et al., 2021). Concurrently, the policy thrust will facilitate the transformation of Nigeria into a knowledge-based economy and will be used to develop action plans, sub-sectoral policies and specific

implementation guidelines as appropriate. The Federal Ministry of Education, recognizing the need to reposition education sector in Nigeria to meet global standards and competitiveness, developed the National Policy on Information and Communication Technologies (ICT) in Education in collaboration with relevant stakeholders. The policy was subsequently approved by the Federal Executive Council in April 2010 for implementation across the Federation. The policy aims at ensuring qualitative education for the enhancement of sustainable socio-economic development, global competitiveness and the individual's ability to survive in the contemporary environment. The Policy also provides the needed guidelines on expectations for the entire process of ICT integration in education to all stakeholders. Its implementation is expected to lead to speedy transformation of teaching, learning and educational administration in Nigeria. A major provision in the National Policy on ICT in Education is the development of implementation guidelines using a multi-sectoral approach.

In the first edition (May 2019) of the implementation guidelines for the national policy on ICT in Education, which is necessitated by the need to facilitate the actualization of the policy within a given timeline, the document is the outcome of multi-level collaboration between the federal ministry of education and other stakeholders, IT professional bodies, departments and agencies, private, non-governmental agencies and international development partners. They provided targeted modalities for the effective development and deployment of ICT in education with simplified framework in seven focal areas according to the Hon. Minister of Education, Mallam Adamu Adamu**.**

2.1.11.2. Human Capital Development

The intention is to improve ICT competencies and professional development of relevant stakeholders in the development and deployment of ICT in teaching, learning and educational administration. This will involve restructuring the environment for teaching, learning and educational administration, encouraging professional development and ICT skills acquisition, and periodical curricula review. It will also involve development of standards for IT education, strengthening blended and e-learning, open and distance education, encouraging private sector participation and carrying out monitoring and evaluation. It was based on the attainment of this that the development mantra was spell below:

(i) Restructure the environment for teaching and learning as well as education administration to be ICT-enhanced.

(ii) Carry out and encourage the continuous and mandatory professional development of core ICT Teachers and Administrators.

(iii) Ensure appropriate continuing ICT training including content development and delivery for all staff.

(iv) Review the curricula periodically to reflect emerging good practices in line with national goals.

(v) Promote ICT proficiency in mass and non-formal education with special focus on children, women and people with special needs.

(vi) Develop and strengthen standards and guidelines for content and instructional materials in electronic media and the use of ICT tools in formal and non-formal Education.

(vii) Strengthen and expand Open and Distance Learning as well as blended and e-learning.

(viii) Carry out needs assessment to identify skill gaps and encourage acquisition of appropriate ICT skills to mitigate the gaps.

(ix) Encourage private sector participation in Education and Training in ICT.

(x) Encourage ICT Education at all levels.

(xi) Ensure periodic quality assurance in the development, utilization and sustenance of ICT in Education.

(xii) Establish a reward system for teachers, administrators and institutions that utilize ICT to improve quality of teaching and learning.

(xiii) Review constantly the specializations in the field of Computer Science/IT to reflect global trends

2.2.1 Restructure the environment for teaching and learning as well as education administration to be ICT-enhanced.

2.1.11.3 Infrastructure

There is inadequate ICT infrastructure in the country in general and in the Education sector in particular. Therefore, the need to provide the infrastructure required to attain improved ICT in Education, using innovative methods to support consistent research and development, integration and sustenance of ICT in education, is imperative. The emphasis therefore, is to create a common ICT platform for the sharing of resources in teaching, learning, research and educational administration; support equitable access to ICT resources; and provide facilities for storage and management of data. Also, it is to promote indigenous content, provide alternative power supply and develop a mechanism for disposal of unserviceable ICT equipment as well as technical support. The strategies were outlined as:

(i) Ensure adequate supply of ICT systems for access to software applications, local and international contents and online learning resources at all educational institutions and establishment.

(ii) Ensure that all educational institutions and establishments are interconnected to create a common platform that will facilitate the sharing of resources and reduce duplication. The platform will provide a secure network for administrative purposes as well as access to the Internet for instructional and professional development.

(iii) Ensure that ICT systems for education administration are in place and all necessary common infrastructure for the storage and management of the ensuing data are provided in all educational institutions and establishments.

(iv) Promote and encourage the design, development, acquisition and hosting of indigenous content.

(v) Facilitate data and content sharing among educational institutions and establishments.

(vi) Ensure provision of cost effective and sustainable alternative power supply.

(vii) Develop a mechanism for the disposal of unserviceable ICT equipment in educational institutions and establishments.

(i) Adopt strategies for technical support, maintenance for ICT in education and Business Continuity.

2.1.11.4 Research and Development

Research and Development (R&D) is crucial to the attainment of education that is engaging, empowering, enriching and enabling for sustainable socio-economic development. There is therefore the need to give necessary attention to R&D in education. In order to ensure sustained investment and commitment to R&D in ICT in education, strategies should be developed to encourage R&D initiatives in teaching and administration, personnel motivation, adaptation of

2.1.11.5 Awareness and Communication

Public awareness on ICT in education is necessary to achieve a broad-based consensus and effective participation in its implementation. The emphasis should be on periodic public awareness using appropriate media and national fora to promote interest in ICT security and ethical practices.

2.1.11.6 Governance

Governance of ICT in Education requires the formulation of plans, efficient management framework, harmonization of institutional strategy for directing and controlling the use of

ICT in the sector. The strategies involve the review of the existing laws, standards and guidelines, enactment of new laws and practices, review of standards and guidelines, development of counter measure to security threats, monitoring and accreditation of ICT programmes and institutions, development of strategies to deal with licensing, intellectual property rights, use of software, security and information dissemination.

2.1.11.7 Financing

ICT in Education is capital intensive. The traditional budgetary by Government should therefore be improved upon and other relevant stakeholders encouraged to finance ICT in education. The focus is to ensure increase funding for ICT in education, exploit existing funding channels, intensify use of creative financing models and harness partnerships with development partners.

2.1.11.8 Monitoring and Evaluation

It is necessary that Monitoring & Evaluation (M&E) of programmes and projects of ICT in Education be carried out periodically to assess the impact and extent to which the objectives of the policy have been achieved. It is the process of determining the efficiency and the effectiveness of policy implementation effort as it relates to the key outcomes.

2.1.11.9 A Critical review of the National Policy on ICT in education

This is to provide an evidence based approach on the effectiveness of the 2019 National policy on ICT development in education. Ibanga (2020) in his article published in Premium Times titled: Smart Universities and ICT Innovation In Nigeria. Currently, some of these NITDA ICT centres are located in Universities of Lagos and Port Harcourt, Bayero University Kano, Federal University of Technology Minna, and Gombe State University. They are geared to enable the adoption of stronger collaboration and synergy among governments, industry and universities, to produce highly skilled graduates, achieve the entrenchment of the digital economy and the wellbeing of the people. Other benefits include increasing the access and flexibility to digital literacy; and enabling students to develop the digital skills and competencies needed to create jobs and improve livelihoods for sustained national development. Furthermore, the projects are aimed at positioning the institutions at the top of technology developments; facilitating a digital lifestyle in the institutions, as well as sharing the facilities of these communities with their neighboring communities on a commercial basis for sustainability.

Therefore, it is imperative for universities to engage effectively with technological disruptions by remaining market-smart to safeguard their relevance by supporting applied research programmes that will translate into economic goods and services. Through the effective management of these ICT hubs, Nigerian universities would be able to regain their relevance and original mission of functioning as generators of knowledge and technology to equip and support our youths to contribute value in the rapidly expanding digital economy.

Odionye (2016) observed in her view on Uses and Applications of ICTs in Nigerian University Libraries that ICT has brought remarkable development in Nigerian university libraries, by helping to bridge the gap in information and knowledge and improving the working capabilities of library staff. It has led to the fast acquisition, processing, storage, retrieval and dissemination operations by users, because many library activities are now ICT based. There is now a tremendous increase in the use of ICT facilities, especially the internet which has added values to the services provided by Nigerian libraries. Despite the opportunities provided by ICT, most Nigerian libraries are not fully automated and where they are automated, the availability of ICT facilities is not adequate to facilitate individual and community development. Also, the effective usage and functioning of the available ICT facilities in any Nigerian library is largely dependent on power source which have proven to be the major challenge in harnessing the ICT opportunities. It therefore, when existing Nigerian libraries are fully equipped with ICT facilities, taking into consideration factors that can hinder its effectiveness, that the opportunities provided by ICT can be fully harnessed.

2.2 THEORETICAL FRAMEWORK

This work is anchored on the global village theory and uses and gratification theory.

2.2.1 THE GLOBAL VILLAGE THEORY

This theory was propounded Canadian-born Marshall McLuhan in his books “the Gutenberg Galaxy: The Making of typographic Man” in 1962 and “Understanding Media” in 1964. MCLuhan described how the globe has been contracted into a village by electronic technology and the instantaneous movement of information from every quarter to every point at the same time. According to this theorist, physical distance is even less of a hindrance to the realtime communicative activities of people, and therefore social sphere are greatly expanded by the openness of the web and the ease at which people can search for online communities and interact with others who share the same interest and concerns.

The theory is found relevant in this study, because ICTs have made the world; especially higher education programmes a global village. Such that students and staff now use ICT facilities available in the universities to source for reference material, online journal as well as send and receive e-mail from within and outside the country. In other words, the boundaries between one institution and another and between institutions and the outside world have become less important. The use of Internet has revolutionized access to information for the business world, libraries, education, and individuals. Technology has also removed the barriers between school and home; such that many universities in different countries now use audio visual devices to transmit educational materials over long distances. These new forms of globalization have replaced more conventional types of academic exchange among the world's universities.

2.2.2 USES and GRATIFICATION THEORY

This theory was propounded by Katz in 1970 and is concerned with how people use media for gratification of their needs. This theory, which is an outcome of Abraham Maslow's hierarchy of needs, posits that people choose what they want to see or read and the different media compete to satisfy each individual's need. When different kinds of reasoning became the focus of researchers in the 1960s and 1970, mass media audience was then assumed to be rational human being whose needs propelled them to make use of the mass media in anticipation of finding solutions to such needs. This theory is therefore, found relevant to this study because, students perceived the use of ICT facilities as being in vogue with current technology with which they can easily identify with and the absence of which is considered obsolete and not in vogue. These ICT facilities is perceived to make work faster, discourages undue stress in sourcing for reference material, to complete project work, updating knowledge and lecture notes, for communication, online registration and preparation for examination among others. The management of these schools also uses ICT facilities for cataloguing, circulation, electronic documentary, acquisition, processing, storage, retrieval and dissemination of information. The gratification which ICT has brought to learning has led to constant usage and dependence of users on the facilities for various academic purposes.

2.3 EMPIRICAL FRAMEWORK

2.3.1 ICT in Nigerian Institutions

It is important to note that one the greatest challenge to academic development in the areas of ICT whether in privately owned or government funded schools is the lack of manpower and skill set gap with teachers who interface with students on a daily basis. Many of these

lecturers have not been trained or in most cases are not comfortable using these tools; this observation is corroborated by Anagbogu, German-James and Bisong, (2020) in their study on Open University in Nigeria; said that the single biggest problem facing education today, particularly Open University of Nigeria is that our Digital Immigrant facilitators, who speak an outdated language, are struggling to teach a population that speaks an entirely Digital language. Indeed, as the technology advances in all spheres of lives, our lecturers are often slow to adapt to changes. The generational gap between "digital native" and "digital immigrant" can be seen clearly in lecturers and students' interaction and engagement in teaching and learning in our classrooms, from kindergarten through higher education. It is a major concern whether the needs of "digital natives" (students) can he met by facilitators who are largely "digital immigrants". It seems that facilitators do not regularly integrate technology during their teaching and learning under the current trend of globalization and economic dynamics and accountability of our educational system. The essential question posed is. Are our teachers and schools ready to carry out the mission to meet the demands of the future by preparing our young learners with the knowledge, skills, and innovation capabilities necessary to advance our competitiveness globally? This issue is same with most private institutions as most lecturers employed are of this digital immigrant extractions who are either on sabbatical leave or adjutant contract.

In support of this view, Adeyemi and Esere (2013) believed that there is lack of skilled manpower to manage available systems and inadequate training facilities for ICT education at the tertiary level. This apparent lack of the required degree of sophistication and information management expertise on the part of the end-users of ICTs (students, staff and researchers) would make it difficult to effectively-harness the opportunities offered.

To corroborate this submission another survey study was carried out by Adeyemi and Esere (2013) on 38 lecturers who were regular users of a university "Compunet". The study focused on assessing their computing skills and the areas of application of the computing systems. The results of the survey indicated that only eight (8) of the users could operate the computer systems unaided. Twenty-six (26) of them have been able to access relevant reference materials for paper publishing, while only four (4) have published international1y through the Internet. Majority of them have received and sent social and academic messages through the e-mail services. These results emphasize the need to train lecturers in the use of the internet for the accruable benefits of carrying out viable studies/researches and publishing with international outlets. If this training is extended to students, it could result in increased access to educational opportunities.

Udochukwu, et al 2019 also identified another challenge as the culture of maintenance should be adopted by management of tertiary institutions to ensure that the available ICT facilities and equipment are always in good working conditions. There should be sensitization of staff and students on the use of digital library for research and learning purposes. Staff and students in tertiary institutions should be encouraged to acquire the necessary skills to operate and use ICT facilities and equipment in carrying out e-learning.

In order to tackle this limitation and foster the better learning experience, there is the need to have an ICT infrastructure road map with corresponding financial commitments, as its inevitable for an effective learning experience in any academic environment. This view was supported by Alfred (2014) that the uptake of ICT in higher education stems from a strong institutional policy and support base. Cross and Adam (2007) opined that such policy initiatives and strategies were critical to national, social and economic development goals. Using the South African higher education landscape, Cross and Adam (2007) argued that despite ICT usage having increased, most institutions did not have comprehensive institutional visions or strategies on ICT use. The policies are part of the broader institutional imperatives and the intents and purposes of vary from institution to institution. A cursory look at a few South African universities' strategic plans seems to buttress these assertions. For instance, the University of Free State's Strategic plan (2012) Information Technology policy puts more emphasis on students' performance and lecturer capabilities in ICT usage. Their plan is to "…take a long-term view, to migrate from occasional access to 'always-on' status for 30 000 students over the next five years" (UFS Strategic plan 2012:48). The University of Fort Hare likewise, confirmed in its policy documents (UFH ICT policy document) that ICT use within South Africa has been growing rapidly for more than a decade. The institution's Strategic Plan advocates the promotion of Technology-enhanced Learning (TeL) albeit, as one of the key objectives within the strategic goal of teaching and learning, research and community engagement excellence (UFH Strategic Plan 2012). The university of Venda Strategic plan cites ICT as critical success factor 'in support of the university's core business' (Univen Strategic Plan 2012:46). The university in its SWOT analysis (Univen Strategic Plan 2012:13) boasts of academics with laptops, functional modern hardware and software, and students with internet access but inadequate computer facilities and internet capacity.

Odionye (2016). Many Nigerian libraries, especially in the universities, face various problems in their attempts to digitalize their library operations. These problems are not really of the library's making but it is the usual problem confronting most of the computer

installations all over the country today - the shortage of manpower and lack of spare parts. However, the findings of Krubu and Asowaru (2011) revealed that inadequate training and retraining of staff by management; inadequate funding, epileptic power supply and lack of search skills are the major factors militating against the effective use of ICT in Nigerian University libraries. Amongst others, inadequate funding, capacity building, regular power supply were recommended. Also Aina (2004) identified the negative laissez-faire attitude of lecturers, students, and libraries as other factors militating against the development and use of ICT in university libraries in Nigeria. This researcher further pointed out the high cost of ICT training but opined that library staff and users should do something on their own to improve their IT skills. Womboh and Abba (2008) noted that a laissez-faire attitude of lecturers, students and even librarians by feeling that their employers should train them in ICT hinders ICT development in University libraries. Similarly, Krubu and Osawaru (2011) reveals some factors hindering the impact of ICT use in Nigerian university libraries as lack of search skills, epileptic power supply, expensive software and hardware, and huge amount of money spent to fuel generators. Moreso, the findings of Ugwuanyi (2011) revealed that financial problems and poor ICT infrastructure are the most serious hindrances to the acquisition of ICT literacy skills as revealed by the study. Based on this, Allison (2007) recommends continue information literacy programmes, having found that users are not aware of the information resources

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Research methodology is a systematic way of getting problems solved (Sivasubramaniyan, 2012) and on this premise, this chapter attempts to discuss the various methods adopted in carrying out the study in order to attain the stated research objectives of the study. This chapter concentrates on the proposition on how the data from the study respondents were gathered and analyzed for the study. The research instrument used and method were identified. The method of research was presented in this chapter as it related with the statement of research problem, objectives, questions and hypotheses. Other segments contained in this chapter include research approach, research philosophy, research strategy, reliability, sample selection, ethical issues and research limitations of the study.

3.2 Research Design

The research design is intended to provide an appropriate framework for a Study or blueprint for conducting a marketing research project (Jilcha, 2019). A very significant decision in research design process is the choice to be made regarding research approach since it determines how relevant information for a study will be obtained; however, the research design process involves many inter-related decisions, Aaker, Kumar, and George (2000). Research design refers to the total plan of an investigation of study and it is not restricted to one aspect of research only.

Due to the type of respondents needed to reflect the true reality of the study, the researcher is going to adopt a quantitative-descriptive (structured questionnaires) approach. This is chosen because it involves variables measured without influencing them and also focuses on gaining a holistic understanding of the case.

3.3 Research Philosophy

This study had used one of the philosophies of research called positivism because the research was restricted to use of collected data and an objective approach was used to interpret the data collected. This would be done after hypotheses formulated are tested using existing training development theories.

3.4 Research Strategy

This study would use the survey research strategy so as to examine the perception of student towards the deployment of ICT in Landmark University; a private tertiary institution in Nigeria. The structured questionnaire would be used as the research strategy for this study. The survey questionnaire would be designed with the aim of gathering data from respondents

(Students of Landmark University) on their perception to the deployment of ICT infrastructure such as smartboards, biometric data capturing, e-library, e-learning platforms and other internet facility on their academic and learning experience. The rationale behind the use of a structured questionnaire is that it is widely and commonly used in studies of this nature (Dauda and Akingbade, 2011). Copies of the structured questionnaire were administered to students in Landmark University. The administration of the copies of questionnaire was carried online by the researcher.

3.5 Research Method

As drawn from Saunders, Lewis and Thornhill (2007) this current study used the deductive approach to research. The rationale behind the deductive approach was to ensure that casual relationships among variables were well explained, that the use of quantitative data was the main, the operationalization of concepts were done to ensure clear definition, the structured nature of the research, the independence of the researcher from the beginning of the whole process of research and the selection of sizable samples to ensure generalization of conclusions. The research instrument that is to be used in this is a structured one. This was adapted from dissertations that were unpublished and were subjected to test of reliability and validated.

3.6 Population of the Study

A population can be defined as all elements or observations that are of primary interest to a research study. The concept of population may refer to totality of resources (tangible/intangible) such as number of people in a community. Population is a set of objects (units) or observations about which conclusions will be drawn. It refers to an aggregate of things (which may or may not represent individuals) about which one wants to draw inferences by sampling. The population of the study are the students of Landmark University, Kwara State.

3.7 Sample Size Determination

Sample size is the number of population elements that are selected for study. In this research study, sample size determination is an important aspect to examine due to difficulty in studying the whole population; there are different methods in determining sample size. This study adopts stratified sampling technique. Stratified Sample technique is used in order to obtain a representative sample since the population from which the sample is to be drawn consists of homogeneous group.

The total population of the study was determined to be 3134 undergraduate' students. The size of the sample to be derived for from the population was calculated using Yamane's formula presented below;

$$n = \frac{\mathrm{N}}{1 + \mathrm{N}(e)^2}$$

Giving the population (*N*) as 3134; a 95% confidence level and P = 5% the equation is thus presented as where"

n = Sample Size to be determined

N = 3134 students

e = 5% or 0.05

CL = 95%

Therefore,

$$n = \frac{3134}{1 + 3134(0.05)^2}$$

$$n = 342$$

$n = Apprx\ 350$

3.8 Data Collection Methd

Based on this study, one source of data collection method would be used to collect data. This is described below:

3.8.1 Primary Data Collection

The respondents would be students (undergraduates and post-graduates) who are the source of the primary data collected for this study. They are the participants randomly selected from the student body of the university. The questionnaire to be used is going to be a structured one; Google forms would be created and sent via social media platforms and University mail. They will be retrieved from a backend repository after they are fully completed by the respondents for this study. The adoption of this method is due to ensuring ease of filling by respondents and completed without any misplaced form and this also would ensure absolute and accurate data gathering from the participants.

In total, the instrument has thirty-nine (39) questions, which were sub-divided into three different sections. Sections to be included are labeled “Section A” for Biographical Data. This section would have nine (9) questions, which covers areas such as respondent’s gender, respondent’s age, respondent’s level, respondent’s department, respondent’s current CGPA, respondent’s experience with ICT facility in the University, respondent’s perception with lecturers use of ICT facility, respondent’s time spent on using the internet, respondent’s experience with smart boards for lectures, respondents experience with biometric data capturing, and respondent’s experience with e-learning platforms.

The second section is to be labeled “Section B” that deals with the independent variable of the study, which was the type of ICT infrastructure used in Landmark for learning. It would include nine (9) Likert scale type statements from which respondents are to describe their opinion by ticking the appropriate options from strongly disagree (1) to strongly agree (5) with respect to ICT infrastructure deployed.

Finally, the third section is “Section C”, which deals with the dependent variable of the study, which is Learning Context. It would include nine (9) Likert scale type statements from which respondents are to describe their opinion by ticking the appropriate options from strongly disagree (1) to strongly agree (5) with respect to students’ academic performance in Landmark University.

3.9 Validity of Research Instrument

Validity is concerned with ascertaining whether an instrument captures the intended data (Viswanathan, 2005). The aim of validity test is to ensure that the data gathered conforms to intended objectives and purpose of the research. Validity can be defined as the degree/extent to which the research instrument (questionnaires) measures what it was designed/expected to measure. For this study, the face validity of this research instrument is to prove that the questionnaire is valid enough to achieve the results it is meant to achieve.

3.10 Reliability of Research Instrument

In order to carry out the test of reliability on the research instrument, the test of internal consistency was carried out on the research instrument, which was a structured questionnaire. To achieve this, a pilot survey was conducted using the research instrument. The rule of thumb used in determining the internal consistency of the questionnaire was as follows as stated by George and Mallery (2003).

- To have an excellent score i.e. high-stakes testing = $\alpha \geq 0.9$
- To have a good score i.e. low-stakes testing = $0.7 \leq \alpha < 0.9$
- To have an acceptable score = $0.6 \leq \alpha < 0.7$
- The score is poor when it is = $0.5 \leq \alpha < 0.6$
- The score is unacceptable when it is = $\alpha < 0.5$

The pilot survey was conducted using ten (10) google forms, which were randomly shared online with ten students in Landmark University. The retrieved google forms were subjected to the test of internal consistency using the "Cronbach Alpha Reliability Analysis" and presented in the proceeding chapter.

3.11 Method of Data Analysis

Statistical Package for Social Sciences (SPSS), a data analysis software was used for this study. The questionnaires will be subjected to tabular and graphic representation of demographic data, correlation test to ascertain the strength of the relationship among the variables. Also, in order to investigate the significance of the variables of interest, Analysis of Variance will be conducted.

3.12 Ethical Issues

Below were the ethical issues in order to ensure that the process of research was adequately followed:

- It was ensured that respondents in this study were allowed to give their consent or choice freely on whether to provide the required adequate information.
- There was no form of any gathering of false information that would lead to the detriment and mar of the banks under study.
- It was ensured that respondents were not taking any physical nor psychological risk regarding their wellbeing
- Finally, the researcher ensured that the participants' privacies, relationships, personal information disclosure and beliefs were not threatened.

It was noted also that respondents were assured that their responses was going to be used strictly for the purpose of the research and nothing more. Therefore, only the aggregated data were analyzed.

CHAPTER FOUR

PRESENTATION OF RESULTS AND ANALYSIS

4.1 Introduction

In this chapter, the presentation of results was made and it began with the description of the participants' bio-data information. The drawn table was made from the objective raised for this study. Each tested hypothesis was drawn to derive the independent variables and dependent variable. A summary of the main findings follows the stated hypothesis. In addition, where relevant, selected findings from the personal data collected were also used to contrasts the findings of the study.

4.2 Analysis Response Rate

A total number of 350 questionnaires were administered to respondents and 329 were duly recovered for analysis which represents 95.8 percent. With the percentage of the respondent's views gotten, the analysis was deemed accurate for study. Furthermore, the descriptive analyses of the responses were also presented for clarity purpose.

Table 4.1 Analysis Response Rate

Questionnaires	**Frequency**	**Percentage (%)**
Returned	329	94
Not Returned	21	6
Total	**350**	**100**

Source: Fieldwork (2021)

4.3 Reliability Test

This study employed Cronbach Alpha which interprets the percentage of variance where the observed true scale composed of all possible items in the universe. In general, reliability of an instruments is found suitable when less than 0.6 are considered poor and those in 0.7 and above ranges are considered acceptable.

Table 4.2a: Case Processing Summary

		N	%
Cases	Valid	315	95.7
	[a] Excluded	14	4.3
	Total	329	100.0

a. Listwise deletion based on all variables in the procedure.

Table 4.2b: Reliability Statistics

Cronbach's Alpha	N of Items
.744	6

Source: Results from SPSS (2021)

The Cronbach's Alpha estimate indicates the reliability of the items in the questionnaire. Studies have established that Alpha greater than 0.7 is indicated as high reliability. Hence, the reliability test of 0.744 indicates that the questionnaire is 74 percent reliable (as shown in Table 4.2b).

4.4 Demographic Profile of the Respondents

This section displays the respondent's demographics characteristics. It depicts the respondent's gender, age, college/faculty, level in undergraduate education pursuit and the type of gadgets owned in the selected university.

Table 4.3: Frequency distribution according to Gender

	Frequency	Percent	Valid %	Cumulative %
Male	158	48.0	48.3	48.3
Female	169	51.4	51.7	100.0
Total	327	99.4	100.0	
Missing system	2	.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.3 shows that 169 respondents are Female (51.4 respondents) while 158 (48.3 percent) respondents are Male. This implies that most of the respondents utilized in the study are of the male population. Thus, the inferment of this is that the student's populations in Landmark University are majorly female, though the different is not well pronounced as the margin is small. A further representation is displayed in figure 4.1 below

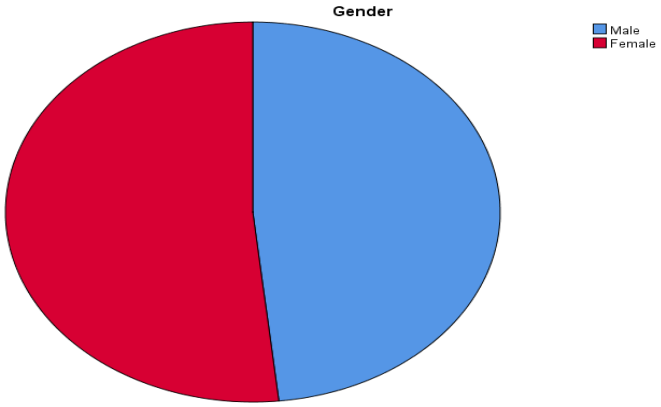


Fig 4.1 Respondents Gender Distribution

Table 4.4: Frequency distribution according to Age

	Frequency	Percent	Valid %	Cumulative %
14-18 years	48	14.6	14.7	14.7
19-21 years	210	63.8	64.2	78.9
22-25 years	59	17.9	18.0	96.9
26yrs & above	10	3.0	3.1	100.0
Total	327	99.4	100.0	
Missing System	2	.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.4 shows that 14.6 percent of the respondents are aged between 14 to 18 years, 63.8 percent are aged between 19 to 21 years, 17.9 percent aged between 22 to 25 years, 3.0 percent aged between 26 years and above. With the presence of age 19-21 years having the highest population, the indication is that Landmark University gives preference to young and vibrant people during their admission processes. This ascertains the engagement of vibrant and resourceful workforce with a dynamic mindset that is quite innovative and responsive to change, especially to the ICT trends is relatable. The distribution is further displayed in figure 4.2.

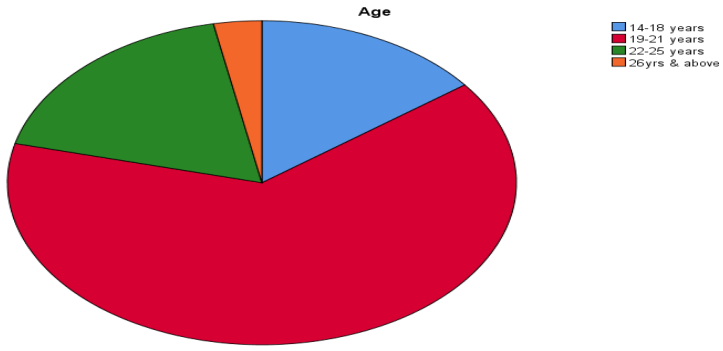


Fig 4.2 Respondents Age Distribution

Table 4.5: Frequency distribution according to College/Faculty

	Frequency	Percent	Valid %	Cumulative %
CBS	122	37.1	37.3	37.3
CAS	13	4.0	4.0	41.3
COE	111	33.7	33.9	75.2
CPAS	81	24.6	24.8	100.0
Total	327	99.4	100.0	
Missing System	2	.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.5 shows that 37.1 percent of the respondents are in the College of Business and Social Science (CBS), 4.0 percent in the College of Agricultural Sciences (CAS), 33.7 percent in the College of Engineering (COE) while in the College of Pure and Applied science (CPAS) had 24.6% respondents. Thus, it can be stated that there was a good sample representation of the opinions of the students harvested in the study in line with the total population in the as distributed as shown

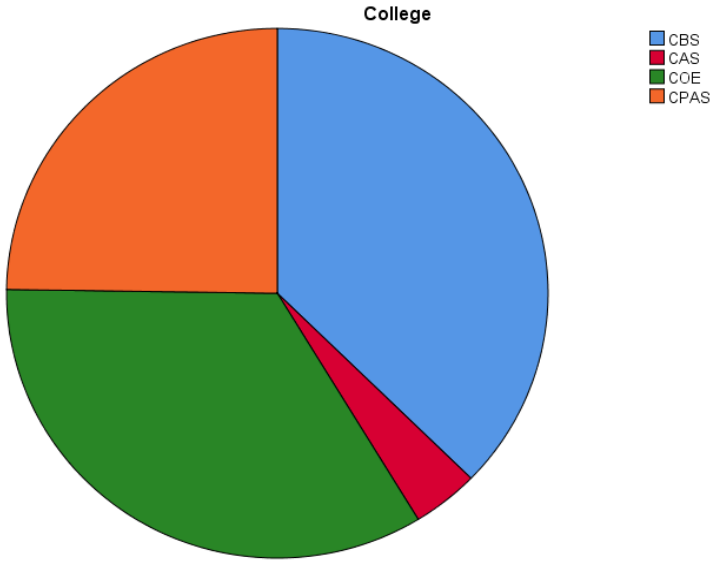


Fig 4.3 Respondents College/Faculty Distribution

Table 4.6: Frequency distribution according to Level Distribution

	Frequency	Percent	Valid %	Cumulative %
100 Level	32	9.7	9.8	9.8
200 Level	49	14.9	15.0	24.8
300 Level	35	10.6	10.7	35.5
400 Level	172	52.3	52.6	88.1
500 Level	39	11.9	11.9	100.0
Total	327	99.4	100.0	
Missing System	2	.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.6 shows that 9.7 percent of the respondents are in 100 Level, 14.9 percent in 200 Level, 10.6 in 300 Level, 400 Level were represented by 52.3 percent while 11.9 percent in 500 level as the Frequency distribution according to Level Distribution in Landmark University. This shows that majority of the respondents in the study were from 400 level and further postulating that retrieved opinions with little bias was harnessed for the study from experienced respondents on the subject matter.

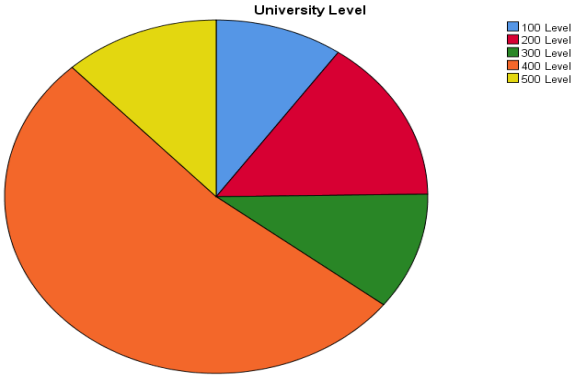


Fig 4.4 Respondents Level in University Education

Table 4.7: Frequency distribution according to Gadget Owned

	Frequency	Percent	Valid %	Cumulative %
Laptop	248	75.4	75.8	75.8
Tablet	38	11.6	11.6	87.5
None	10	3.0	3.1	90.5
Both Gadgets	31	9.4	9.5	100.0
Total	327	99.4	100.0	
Missing System	2	.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.7 shows that 75.4 percent of the respondents are owners of only a laptop device, 11.6 percent own Tablets devices while 3 percent do not own anything. Furthermore, 9.4 percent were found to own both devices. This implied that an average student of landmark has a readily accessible device to the internet world.

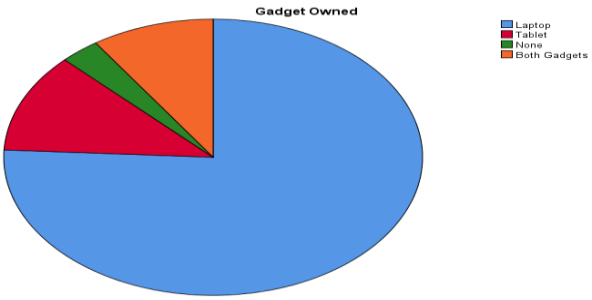


Fig 4.5 Distribution of Gadgets Owned by Respondents

4.5 Descriptive Analysis of Research Variables Based on Training and Development

The following tables below show the descriptive statistics of responses from Landmark University students in Kwara state, North Central, Nigeria. They are established on their respective views on the measured parameters of the study. The relevance of showing the descriptive statistics is to identify the degree of importance from the identified responses in the tertiary institution in line with the respective measures.

Table 4.8: I understand how my learning will contribute to achieving the intended semester academic goals.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree		3.3	3.4	3.4
Disagree		2.1	2.2	5.6
Neutral		6.1	6.2	11.8
Agree		50.5	51.6	63.4
Strongly agree		35.9	36.6	100.0
Total		97.9	100.0	
Missing System		2.1		
Total		100.0		

Source: Fieldwork (2021)

Table 4.8 reveals that a high number of the students (86.4%) in Landmark University understands how learning contributes to achieving their intended goals for the semester. This is evident with the percentage of those agreeing and strongly agreeing to be 86.4% which is more than half of the population, it shows the importance and culture of learning has not been eroded. The remaining 11.5% who are of a diverse opinion shows that to some no matter the majority view learning is not just as important.

Table 4.9: Lecturers discuss expectations for learning with students they lecture.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	5	1.5	1.6	1.6
Disagree	24	7.3	7.5	9.0
Neutral	74	22.5	23.0	32.0
Agree	170	51.7	52.8	84.8
Strongly agree	49	14.9	15.2	100.0
Total	322	97.9	100.0	
Missing System	7	2.1		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.9 shows the frequency in which lecturers discuss the expectations for learning with students they lecture. Students agree that lecturers discuss what is expected of them as it pertains to learning. This is particularly true with the percentage of those agreeing been

66.6% out of a total of 97.9%. it reveals that lecturers do not just expect the students to know what is expected of them when it comes to learning, they actually put them through making them understand the benefits of learning through interactive sessions.

Table 4.10: Lecturers actively seek knowledge and expertise from the students they manage in order to improve overall academic performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	13	4.0	4.0	4.0
Disagree	48	14.6	15.0	19.0
Neutral	94	28.6	29.3	48.3
Agree	144	43.8	44.9	93.1
Strongly agree	22	6.7	6.9	100.0
Total	321	97.6	100.0	
Missing System	8	2.4		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.10 shows the representations of students as it pertains to their view of if the lecturers actively seek their knowledge and expertise in order to improve academic performance. 50.5% of the student are in agreement leaving those in disagreement to be 18.6% and 28.6% of them are neutral. This reveals that in order to improve academic performance there is a need to seek knowledge from other students in other to help others who might be having a hard time.

Table 4.11: Feedback and self-reflection are part of the routine of all lecture activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	14	4.3	4.3	4.3
Disagree	33	10.0	10.2	14.6
Neutral	39	11.9	12.1	26.7
Agree	163	49.5	50.6	77.3
Strongly agree	73	22.2	22.7	100.0
Total	322	97.9	100.0	
Missing System	7	2.1		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.11 reveals that a high number of the lecturers use feedback and self-reflection as part of their routine when it comes to lecturing in Landmark University. 71.7% of the population agreed to this.

Table 4.12: Lecturers and Students share responsibility for learning.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	6	1.8	1.9	1.9
Disagree	13	4.0	4.2	6.1
Neutral	17	5.2	5.4	11.5
Agree	159	48.3	51.0	62.5
Strongly agree	117	35.6	37.5	100.0
Total	312	94.8	100.0	
Missing System	17	5.2		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.12 seeks to know if lecturers and students share the responsibility for learning. A very high percentage (83.9%) reveals that the responsibility for learning is not one sided both the lecturer and student have a part to play, in the instance where one fails there would be consequences which could affect learning.

Table 4.13: Students have the resources (time, materials, tools, etc.) to apply learning to their learning process.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	17	5.2	5.3	5.3
Disagree	50	15.2	15.7	21.0
Neutral	45	13.7	14.1	35.1
Agree	141	42.9	44.2	79.3
Strongly agree	66	20.1	20.7	100.0
Total	319	97.0	100.0	
Missing System	10	3.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.13 strongly reveals that in Landmark University students have the resources ranging from time to materials to gadgets etc., to see to it that learning is applied. This can be seen in the percentage of those agreeing which is 63.0%.

Table 4.14: Landmark University measures the impact of students learning on achieving academic Pursuit.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	20	6.1	6.3	6.3
Disagree	32	9.7	10.1	16.4
Neutral	61	18.5	19.2	35.5
Agree	145	44.1	45.6	81.1
Strongly agree	60	18.2	18.9	100.0
Total	318	96.7	100.0	
Missing System	11	3.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.14 reveals that in Landmark University, the school measures the impact of students learning on achieving academic pursuit. 62.3% of the population totally agree to this leaving 18.5% of them neutral and the rest in disagreement.

Table 4.15: Management actively support learning through their words and actions.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	16	4.9	5.1	5.1
Disagree	43	13.1	13.6	18.7
Neutral	89	27.1	28.2	46.8
Agree	130	39.5	41.1	88.0
Strongly agree	38	11.6	12.0	100.0
Total	316	96.0	100.0	
System	13	4.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.15 shows that management actively supports learning through their words and learning. A percentage of 51.1 shows this. This reveals that in Landmark University management supports the students through learning through their words and actions.

Table 4.16: I feel welcome and respected.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	35	10.6	11.1	11.1
Disagree	63	19.1	20.1	31.2
Neutral	86	26.1	27.4	58.6
Agree	110	33.4	35.0	93.6
Strongly agree	20	6.1	6.4	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Table 4.16 seeks to know if the student feels welcomed and respected in Landmark University. 39.5% of the agreed that they really do feel welcomed and respected, 26.1% of them are indifferent about the need to feel welcomed and respected while 29.7% of them do not feel welcomed and respected.

Table 4.17: I understand course expectations and how my performance is evaluated

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	5	1.5	1.6	1.6
Disagree	33	10.0	10.3	11.9
Neutral	35	10.6	10.9	22.8
Agree	198	60.2	61.9	84.7
Strongly agree	49	14.9	15.3	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.17 reveals that a high number of students (75.1%) in Landmark University understands course expectations and how their performance is evaluated. This reveals that when it comes to the issue of academic performance the students know what is expected of them.

Table 4.18: I feel challenged to learn a lot in this course.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	18	5.5	5.7	5.7
Disagree	34	10.3	10.7	16.4
Neutral	60	18.2	18.9	35.2
Agree	154	46.8	48.4	83.6
Strongly agree	52	15.8	16.4	100.0
Total	318	96.7	100.0	
Missing System	11	3.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.18 reveals that a high number of the students (62.6%) in Landmark University feel challenged to learn more in their courses. This reveals that the mental capabilities of these students are being challenged and hence improves learning and academic performance.

Table 4.19: Course activities effectively promote my learning and interest in the subject.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	17	5.2	5.3	5.3
Disagree	30	9.1	9.4	14.7
Neutral	35	10.6	10.9	25.6
Agree	183	55.6	57.2	82.8
Strongly agree	55	16.7	17.2	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.19 shows that course activities carried out in Landmark University promotes learning and interest in their courses with a percentage of 72.3% agreeing.

Table 4.20: The learning tools (e.g. course texts, notes, slides, videos, exams, projects, etc.) support my learning.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	6	1.8	1.9	1.9
Disagree	15	4.6	4.7	6.6
Neutral	40	12.2	12.5	19.1
Agree	148	45.0	46.3	65.3
Strongly agree	111	33.7	34.7	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.20 this table reveals that learning tools which could be any form such as tests, notes, slides,videos, exams, projects and the likes supports learning. 78.7% which is a significantly high number reveals this.

Table 4.21: I am invited to be an active participant in my learning (either face to face or online).

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	13	4.0	4.1	4.1
Disagree	24	7.3	7.5	11.6
Neutral	70	21.3	21.9	33.4
Agree	154	46.8	48.1	81.6
Strongly agree	59	17.9	18.4	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.21 reveals that a high number of the students (64.7%) in Landmark University agree that they are usually involved to be an active participant in their learning process.

Table 4.22: I have opportunities to learn with and from other students in this course

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	4	1.2	1.3	1.3
Disagree	7	2.1	2.2	3.5
Neutral	29	8.8	9.2	12.7
Agree	195	59.3	61.7	74.4
Strongly agree	81	24.6	25.6	100.0
Total	316	96.0	100.0	
Missing System	13	4.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.22 shows that majority of the student 83.9% of the students have opportunities to learn with and from other students through group readings, use of library and e learning facilities and other means.

Table 4.23: The feedback I receive on my work is useful to me for making changes and improvements.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	10	3.0	3.1	3.1
Disagree	16	4.9	5.0	8.1
Neutral	43	13.1	13.4	21.6
Agree	179	54.4	55.9	77.5
Strongly agree	72	21.9	22.5	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.23 reveals that a high number of students (76.3%) in Landmark University are aware that receiving feedbacks from their work is vital to making changes and improvements on their academic performance. This reveals that learning and the need to improve academically is not a one-way process.

Table 4.24: I know where to go for help in this course if, and when, I need it.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	10	3.0	3.2	3.2
Disagree	19	5.8	6.0	9.1
Neutral	47	14.3	14.8	24.0
Agree	167	50.8	52.7	76.7
Strongly agree	74	22.5	23.3	100.0
Total	317	96.4	100.0	
Missing System	12	3.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.24 reveals that a high number of the students (73.3%) in Landmark University are aware of what to do and where to go if they need help in a course.

Table 4.25: I find communication with the Lecturers (e.g. office hours, email, Canvas, etc.) effectively supports my learning

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	19	5.8	6.0	6.0
Disagree	24	7.3	7.6	13.6
Neutral	88	26.7	27.8	41.3
Agree	130	39.5	41.0	82.3
Strongly agree	56	17.0	17.7	100.0
Total	317	96.4	100.0	
Missing System	12	3.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.25 reveals that 56.5% of the student in Landmark University find communicating with lecturers effective as it supports their learning. 26.7% of them do not really care if they communicate with lecturers or not for whatever reason but 13.1% of them disagrees on the stand of communicating of lecturers has been part of an effective learning process.

Table 4.26: I made myself ready in all my subjects' activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	2.1	2.2	2.2
Disagree	32	9.7	10.1	12.3
Neutral	57	17.3	17.9	30.2
Agree	148	45.0	46.5	76.7
Strongly agree	74	22.5	23.3	100.0
Total	318	96.7	100.0	
Missing System	11	3.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.26 reveals that 67.5% of the students make themselves available in all their subjects activities. This accounts for more than half of the population.

Table 4.27: I pay attention and listen during every discussion.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	11	3.3	3.4	3.4
Disagree	26	7.9	8.2	11.6
Neutral	65	19.8	20.4	32.0
Agree	170	51.7	53.3	85.3
Strongly agree	47	14.3	14.7	100.0
Total	319	97.0	100.0	
Missing System	10	3.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.27 reveals that students of Landmark University pay attention in class and listens during every discussion. This representation is shown with a percentage of 66.0%.

Table 4.28: I want to get good grades in every subject.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	8	2.4	2.5	2.5
Disagree	3	.9	.9	3.5
Neutral	11	3.3	3.5	6.9
Agree	118	35.9	37.2	44.2
Strongly agree	177	53.8	55.8	100.0
Total	317	96.4	100.0	
Missing System	12	3.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.8 reveals that a high number of students (89.7%) in Landmark University understand the need for good grades and also want them in every subject. This reveals that they understand that learning is good and it's a pathway to good grades.

Table 4.29: I actively participate in every discussion.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	2.1	2.2	2.2
Disagree	46	14.0	14.4	16.6
Neutral	88	26.7	27.6	44.2
Agree	132	40.1	41.4	85.6
Strongly agree	46	14.0	14.4	100.0
Total	319	97.0	100.0	
Missing System	10	3.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.29 reveals that a high number of students (54.1%) in Landmark University actively participates in every discussion. 26.7% of them are neutral and 16.1% do not participate in every discussions.

Table 4.30: Feedback and self-reflection are part of the routine of all lecture activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	10	3.0	3.2	3.2
Disagree	21	6.4	6.6	9.8
Neutral	64	19.5	20.3	30.1
Agree	158	48.0	50.0	80.1
Strongly agree	63	19.1	19.9	100.0
Total	316	96.0	100.0	
Missing System	13	4.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.30 reveals that 67.1% of the students see feedback and reflection as part of the routine of all lecture activities. This reveals that in learning communication is key and feedback is necessary in this cycle of learning.

Table 4.31: I enjoy homework and activities because they help me improve my skills in every subject

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	11	3.3	3.4	3.4
Disagree	42	12.8	13.2	16.6
Neutral	72	21.9	22.6	39.2
Agree	149	45.3	46.7	85.9
Strongly agree	45	13.7	14.1	100.0
Total	319	97.0	100.0	
Missing System	10	3.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.8 reveals that 59% of the students appreciates homework and activities because it helps to improve their skill in every subject. This reveals that a large number of students see homework and other activities as important.

Table 4.32: I exert more effort when I do difficult assignments

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	2.1	2.2	2.2
Disagree	25	7.6	7.9	10.1
Neutral	46	14.0	14.5	24.6
Agree	151	45.9	47.6	72.2
Strongly agree	88	26.7	27.8	100.0
Total	317	96.4	100.0	
Missing System	12	3.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.32 shows that when it comes to the issue of whether or not Landmark University students exert more efforts when it comes to difficult assignments it shows that they actually do with a percentage of 72.6%.

Table 4.33: Solving problems is a useful hobby for me

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	16	4.9	5.1	5.1
Disagree	29	8.8	9.2	14.3
Neutral	68	20.7	21.6	35.9
Agree	152	46.2	48.3	84.1
Strongly agree	50	15.2	15.9	100.0
Total	315	95.7	100.0	
Missing System	14	4.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.8 reveals 61.4% of the student agrees that solving problems is a useful hobby for them. 20.7% of the total number of the students are on the fence about this stance.

Table 4.34: I am more engaged when the smart board is being used for lectures

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	12	3.6	3.8	3.8
Disagree	14	4.3	4.4	8.2
Neutral	80	24.3	25.1	33.2
Agree	150	45.6	47.0	80.3
Strongly agree	63	19.1	19.7	100.0
Total	319	97.0	100.0	
Missing System	10	3.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.34 reveals that more than half of the students (64.7%) are more engaged in lectures when the smart board are being used as opposed to when it's not. This reveals that a lot of the students enjoy interactive sessions when the board is being used as it aids learning.

Table 4.35: My favorite lectures are from the use of smart boards

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	11	3.3	3.4	3.4
Disagree	49	14.9	15.3	18.8
Neutral	91	27.7	28.4	47.2
Agree	113	34.3	35.3	82.5
Strongly agree	56	17.0	17.5	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.35 reveals that 51.3% of the students' favorite lecture times are ones that the lecturers make use of the smart boards. Even though 18.2% of them do not agree with this.

Table 4.36: Feedback and self-reflection are part of the routine of all lecture activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	79	24.0	24.7	24.7
Disagree	126	38.3	39.4	64.1
Neutral	57	17.3	17.8	81.9
Agree	43	13.1	13.4	95.3
Strongly agree	15	4.6	4.7	100.0
Total	320	97.3	100.0	
Missing System	9	2.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.36 reveals that a very low number of student (17.7%) agree that feedback and self-reflection are part of all lecturers activities. It reveals that even though it might be a priority to some, it is certainly not a priority to all or many.

Table 4.37: I struggle to comprehend with the smart board usage

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	102	31.0	32.1	32.1
Disagree	131	39.8	41.2	73.3
Neutral	41	12.5	12.9	86.2
Agree	33	10.0	10.4	96.5
Strongly agree	11	3.3	3.5	100.0
Total	318	96.7	100.0	
Missing System	11	3.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.37 reveals that only a small percentage of students (13.3%) struggle to comprehend with the smart board usage while 70.8% of them actually do not struggle to comprehend with the smart board usage and the rest are neutral and do not really care if it is being used or not as it does not significantly impact on their ability to comprehend either positively or negatively.

Table 4.38: I would rather have lectures without smartboard

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	116	35.3	36.9	36.9
Disagree	92	28.0	29.3	66.2
Neutral	61	18.5	19.4	85.7
Agree	33	10.0	10.5	96.2
Strongly agree	11	3.3	3.5	99.7
32	1	.3	.3	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.38 reveals that students prefer to have lectures with the smart boards (63.3%) as opposed to those who don't (13.3%). This reveals that the smart board learning is necessary in modern times.

Table 4.39: My Lecturers struggle to make use of the smart board

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	65	19.8	20.6	20.6
Disagree	87	26.4	27.6	48.3
Neutral	91	27.7	28.9	77.1
Agree	58	17.6	18.4	95.6
Strongly agree	14	4.3	4.4	100.0
Total	315	95.7	100.0	
Missing System	14	4.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.8 reveals that lecturers do not struggle to make use of the smart boards with a percentage of 21.9 while a large number of them do not struggle 46.2%.

Table 4.40: The smartboard is beneficial to my learning as a student

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	12	3.6	3.8	3.8
Strongly disagree	8	2.4	2.5	6.3
Disagree	49	14.9	15.5	21.8
Neutral	159	48.3	50.3	72.2
Agree	88	26.7	27.8	100.0
Strongly agree	316	96.0	100.0	
Total	13	4.0		
Missing System	329	100.0		
Total				

Source: Fieldwork (2021)

Table 4.8 reveals that a high number of the students (75%) in Landmark University believe that the smartboard is beneficial to their learning. This implies that the introduction of the smartboards was good move which has improved academic performance.

Table 4.41: I have a computer or am able to get access to one easily on a regular basis

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	2.1	2.2	2.2
Disagree	12	3.6	3.8	6.0
Neutral	31	9.4	9.8	15.9
Agree	156	47.4	49.5	65.4
Strongly agree	109	33.1	34.6	100.0
Total	315	95.7	100.0	
Missing System	14	4.3		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.411 reveals that a high number of the students (80.5%) in Landmark University have computers and are able to get access to on easily and on a regular basis. This implies that the students are technology inclined and have the needed help in their learning process to boost academic performance.

Table 4.42: I am fairly comfortable with keyboarding

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	12	3.6	3.8	3.8
Disagree	31	9.4	9.9	13.7
Neutral	34	10.3	10.8	24.5
Agree	150	45.6	47.8	72.3
Strongly agree	87	26.4	27.7	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.42 reveals that more than half of the students (72.%) are comfortable with keyboarding while 13% of them are not.

Table 4.43: I believe that high quality learning can take place without face-to-face interaction

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	11	3.3	3.5	3.5
Disagree	40	12.2	12.7	16.1
Neutral	55	16.7	17.4	33.5
Agree	119	36.2	37.7	71.2
Strongly agree	91	27.7	28.8	100.0
Total	316	96.0	100.0	
Missing System	13	4.0		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.43 reveals that 63.9% of the students believe that high quality learning can take place without face-to-face interactions. This suggests that students would rather learn online instead of having to go a physical class all the time.

Table 4.44: I am able to go to class at times and locations that I choose instead of being tied to a set time and place

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	32	9.7	10.2	10.2
Disagree	51	15.5	16.2	26.4
Neutral	73	22.2	23.2	49.7
Agree	101	30.7	32.2	81.8
Strongly agree	57	17.3	18.2	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.44 reveals that 48% of the students believe that they are able to go to class at times and locations that they choose instead of being tied to a time and place. The number of students that are against this position are 15.2%. this suggests that students can decide when and where to have their lectures.

Table 4.45: I am able to go to class prepared because of Online Course Compacts

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	20	6.1	6.4	6.4
Disagree	32	9.7	10.2	16.6
Neutral	85	25.8	27.1	43.6
Agree	125	38.0	39.8	83.4
Strongly agree	52	15.8	16.6	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.45 shows the percentages of students that agree, disagree or are neutral to the fact that they able to go to class prepared because of the online course compacts made available. 53.8% of them agree to this either strongly or they just agree.

Table 4.46: Based on the available online course compact, I do not mind meeting my instructors or classmates in person

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	20	6.1	6.4	6.4
Disagree	12	3.6	3.8	10.2
Neutral	86	26.1	27.5	37.7
Agree	146	44.4	46.6	84.3
Strongly agree	49	14.9	15.7	100.0
Total	313	95.1	100.0	
Missing System	16	4.9		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.46 shows that based on the available online course compact 59.3% of the students do not mind meeting their instructors or classmates in person while 9.7% of them believe that it is not enough to be able meet their instructors or classmates in person with.

Table 4.47: I am familiar with Landmark University Online Course Compacts

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	17	5.2	5.4	5.4
Disagree	31	9.4	9.9	15.3
Neutral	75	22.8	24.0	39.3
Agree	138	41.9	44.1	83.4
Strongly agree	52	15.8	16.6	100.0
Total	313	95.1	100.0	
Missing System	16	4.9		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.47 reveals that a high number of the students (57.7%) in Landmark University are familiar with their online course compacts made available to them.

Table 4.48: My lecturers struggle to tally online course compacts with occurring lectures

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	30	9.1	9.6	9.6
Disagree	70	21.3	22.5	32.2
Neutral	106	32.2	34.1	66.2
Agree	83	25.2	26.7	92.9
Strongly agree	22	6.7	7.1	100.0
Total	311	94.5	100.0	
Missing System	18	5.5		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.48 reveals that (31.9%) of the students in Landmark University believe that their lecturers struggle to tally online course compacts with occurring lectures. While 30.4% of the believe that the lecturers do not know how to.

Table 4.49: I ask questions when I have a problem or question from the provided online course compacts

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	15	4.6	4.9	4.9
Disagree	54	16.4	17.5	22.3
Neutral	90	27.4	29.1	51.5
Agree	113	34.3	36.6	88.0
Strongly agree	37	11.2	12.0	100.0
Total	309	93.9	100.0	
Missing System	20	6.1		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.49 reveals that 34.3% of the students are likely to ask questions when they have problems or questions from the course compacts provided or made available online. This relates to the level of high interactivity.

Table 4.50: my learning ability and adaptability of is low (in comparison to expected use of the biometrics usage

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	49	14.9	16.0	16.0
Disagree	63	19.1	20.5	36.5
Neutral	113	34.3	36.8	73.3
Agree	61	18.5	19.9	93.2
Strongly agree	21	6.4	6.8	100.0
Total	307	93.3	100.0	
Missing System	22	6.7		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.50 reveals that 19.1% of the students believe that their learning ability and adaptability is low when compared to the expected usage of the biometrics. While the neutrality of 34.3% reflects the level of recognition of biometric usage.

Table 4.51: I am very dissatisfied with the situation within the university with the biometrics usage

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	20	6.1	6.4	6.4
Disagree	36	10.9	11.5	17.8
Neutral	87	26.4	27.7	45.5
Agree	84	25.5	26.8	72.3
Strongly agree	87	26.4	27.7	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.51 reveals that a high number of the students (25.5%) in Landmark University are dissatisfied with the situation within the university with the biometrics usage. This dissatisfaction refers to the ill perception of the device by the university students.

Table 4.52: The number of Student's complaints within the last semester has increased strongly

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	12	3.6	3.8	3.8
Disagree	17	5.2	5.4	9.2
Neutral	56	17.0	17.8	27.1
Agree	97	29.5	30.9	58.0
Strongly agree	132	40.1	42.0	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.52 reveals that a high number of the students' complaints (40.1%) at the last semester has increased strongly at Landmark University.

Table 4.53: Reputation of our University in eyes of the customers has increased from the engagement of our Biometrics Records

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	24	7.3	7.7	7.7
Disagree	47	14.3	15.1	22.8
Neutral	106	32.2	34.0	56.7
Agree	90	27.4	28.8	85.6
Strongly agree	45	13.7	14.4	100.0
Total	312	94.8	100.0	
Missing System	17	5.2		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.53 reveals that a high number of the students (27.4%) in Landmark University were of the reputation of our university in eyes of the customers has increased from the engagement of our Biometrics Records. This ensures that the biometrics engagement has a positive image to the University.

Table 4.54: Absenteeism is in our classes (relative to lecture) is very low.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	15	4.6	4.8	4.8
Disagree	47	14.3	15.2	20.0
Neutral	82	24.9	26.5	46.5
Agree	108	32.8	34.8	81.3
Strongly agree	58	17.6	18.7	100.0
Total	310	94.2	100.0	
Missing System	19	5.8		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.54 reveals that a high number of the students (32.8%) at Landmark University were of the opinion that Absenteeism is in classes (relative to lecture) is very low. This can be accentuated to the respective measures taken by the university to tackle the stated problems.

Table 4.55: Biometrics Records has made knowledge comprehension very high

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	70	21.3	22.4	22.4
Disagree	79	24.0	25.2	47.6
Neutral	89	27.1	28.4	76.0
Agree	51	15.5	16.3	92.3
Strongly agree	24	7.3	7.7	100.0
Total	313	95.1	100.0	
Missing System	16	4.9		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.55 reveals that 24% of students in Landmark University were of the perception that biometrics records have not made knowledge comprehension very high. Thus, it can be stated that the use of biometrics does not have a relationship with the comprehension of knowledge by the students.

Table 4.56: Biometrics Records has made students trust in leadership low

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	24	7.3	7.6	7.6
Disagree	43	13.1	13.7	21.3
Neutral	87	26.4	27.7	49.0
Agree	102	31.0	32.5	81.5
Strongly agree	58	17.6	18.5	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.56 reveals that majority of the students (31%) in Landmark University were of the opinions that biometrics records has made students trust in leadership low. Thus craving for the creation of another means of disbursing a trust channel.

Table 4.57: Perception of the biometric records by the University has increased Student's Academic performance

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	50	15.2	16.0	16.0
Disagree	77	23.4	24.7	40.7
Neutral	97	29.5	31.1	71.8
Agree	68	20.7	21.8	93.6
Strongly agree	20	6.1	6.4	100.0
Total	312	94.8	100.0	
Missing System	17	5.2		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.57 reveals that a high number of the students (23.4%) were of the mindset that the use of biometric records by the University did not increased Student's Academic performance. This awareness means the engagement of the records as against the intended use does not meet its purpose of academic pursuit. This suggests that the institution must seek another means of improving the academic attainment of the students as against the use of biometric records.

Table 4.58: Landmark University conduct biometrics records for all academic functions

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	23	7.0	7.3	7.3
Disagree	25	7.6	8.0	15.3
Neutral	52	15.8	16.6	31.8
Agree	100	30.4	31.8	63.7
Strongly agree	114	34.7	36.3	100.0
Total	314	95.4	100.0	
Missing System	15	4.6		
Total	329	100.0		

Source: Fieldwork (2021)

Table 4.58 reveals that high number of Landmark University (34.7%) conduct biometrics records for all academic functions. This awareness means the presence and useful engagement of the biometrics records was found to be of a useful engagement to the university community. Thus suggesting that the biometrics usage is adopted as a culture in the institutions.

4.6 HYPOTHESIS TESTING

4.6.1 Test of Hypothesis One

The first hypothesis was formulated based on research question and research objective,

Research Objective 1:

To ascertain the impacts of the deployment of smart boards on students' Academic Performance

Research Question 1:

How has the deployment of smart boards in classrooms impacted students' Academic Performance?

Hypothesis One

H_{0i}: The use of smart boards has no significant impact on student's academic performance.

$H_{1:}$ The use of smart boards has significant impact on students' Academic Performance.

Hypothesis one was statistically tested using multiple regression to (i) identify whether or not there is a relationship, and (ii) examine the degree of the relationship, between the independent variable (that is, the smart boards) and dependent variable (students' Academic Performance); (iii) to access the predictor importance of the variables and finally (iv) to analyze the significance effect of the variables under study.

Table 4.59: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077[a]	.006	.003	.59887
a. Predictors: (Constant), students' academy performance				

Source: Fieldwork (2021)

The model summary table shows how much of the variance of the dependent variable (students' academic performance) is explained by the independent variable (smart boards Usage). In this case, the R square shows a coefficient determination R square (R^2) of about 0.003 if expressed by a percentage will be 0.3%. This infers that 0.3% variation of students' academic performance is predicted by the measures of smart board usage.

The adjusted R square of 0.6 (0.006%) showed variability of the independent variable (smart boards) while the standard error of the estimate indicates .59887 which signifies error term. This indicates that 0.3% of the variations in student's academy performance are explained by smart boards.

The findings are supported by Analysis of Variance ANOVA (F test) results that the model or none of the parameters was equal to Zero.

Table 4.60 **ANOVA[a]**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.673	1	.673	1.876	.172[b]
	Residual	113.691	317	.359		
	Total	114.364	318			

a. Dependent Variable: smart boards

b. Predictors: (Constant), students' academic performance

Decision Rule: Reject the Null hypothesis, when the significance value is below 0.05.

Do not reject hypothesis, when significance value is greater than 0.05.

Interpretation of Result: The ANOVA table shows that the F value is 1.876 at .172[b] significance level. The implication is that smart board has a significant effect on students' academic performance

Decision: Reject the null hypothesis. Therefore, there is a significance influence of smart boards on students' academic performance

Table 4.61: Coefficient Table for the Independent Variable (smart boards)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.527	.187		18.887	.000
	SBU	.086	.063	.077	1.370	.172

a. Dependent Variable: students' academy performance
Source: Field Survey Result (2021)

The coefficient table above depicts the statistical significant contribution reflected in the simple model expressing the extent to which variables included in the model contributed to the prediction of the dependent variable via the viewing of the sig column in the table and checking for the multicollinearity in the model. The level of significance was based on a level of 0.05 for a two-sided test, with the absolute value of the test statistics (T) greater than or equal to the critical value of 1.96. The model revealed that smart board had statistical significance in predicting students' academy performance with high beta values (*beta* = .077) with Tval (1.370) lower than 1.96, sig. .000 $p < .05$). This means that the presence of smartboard in the University for lectures is of a low impact in knowledge transfer in the students' academy performance. This implies that for each unit increase in smart board usage, there are up to .077-unit increase respectively in students' academy performance.

Decision: The significance level below 0.05 implies a statistical confidence of above 95%. This implies that the presence of smartboard does not influence students' academy performance. Thus, the null hypothesis (H_{03}) was accepted, while the alternate hypothesis (H_{a3}) which says the use of smart boards has significant impact on students' academy performance was rejected.

4.6.2 TEST OF HYPOTHESIS TWO

The Two hypothesis was formulated based on research question and research objective,

Research Objective 2:

To determine the degree to which online course compact enhances students' academy performance

Research Question 2:

How has the provision of online course-compact enhanced students' academy performance?

Hypothesis Two

H_{02}: The provision of online course-compact does not significantly enhance students' academy performance.

H_2: The provision of online course-compact significantly enhance students' academy performance.

Hypothesis two was statistically tested using multiple regression to (i) identify whether or not there is a relationship, and (ii) examine the degree of the relationship, between the independent variable (that is, the online course-compact) and dependent variable (students' academy performance); (iii) to access the predictor importance of the variables and finally (iv) to analyze the significance effect of the variables under study.

Table 4.62: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.460[a]	.212	.209	.53109
a. Predictors: (Constant), OCC				

Source: Fieldwork (2021)

The model summary table shows how much of the variance of the dependent variable (students' academy performance) is explained by the independent variable (online course-compact). In this case, the adjusted R square of 0.209 (20.9%) showed variability of the independent variable (online course-compact) while the standard error of the estimate indicates .53109 which signifies error term. This indicates that 20.9% of the variations in students' academy performance are explained by online course-compact.

The findings are supported by Analysis of Variance ANOVA (F test) results that the model or none of the parameters was equal to Zero.

Table 4.63 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.726	1	23.726	84.120	.000[b]
	Residual	88.282	313	.282		
	Total	112.008	314			

a. Dependent Variable: students' academy performance
b. Predictors: (Constant), OCC

Decision Rule: Reject the Null hypothesis, when the significance value is below 0.05.

Do not reject hypothesis, when significance value is greater than 0.05.

Interpretation of Result: The ANOVA table shows that the F value is 84.120 at .000[b] significance level. The implication is that online course-compact has a significant effect on students' academy performance

Decision: Reject the null hypothesis. Therefore, there is a significance effect of online course-compact on students learning experience

Table 4.64: Coefficient Table for the Independent Variable (Online Course Compact)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.988	.197		10.111	.000
	OCC	.500	.055	.460	9.172	.000
a. Dependent Variable: students' academy performance						

The coefficient table above depicts the statistical significant contribution reflected in the simple model expressing the extent to which variables included in the model contributed to the prediction of the dependent variable via the viewing of the sig column in the table and checking for the multicollinearity in the model. The level of significance was based on a level of 0.05 for a two-sided test, with the absolute value of the test statistics (T) greater than or equal to the critical value of 1.96. The model revealed that online course compact had statistical significance in predicting students' academy performance with high beta values (*beta* = .460) with Tval (9.172) higher than 1.96, sig. .000 $p < .05$). This means that the presence of online course-compact in the University for lectures is of a high impact in knowledge transfer in the learning experience of the students. This implies that for each unit increase in online course-compact, there are up to .331-unit increase respectively students' academy performance.

Decision: The significance level below 0.05 implies a statistical confidence of above 95%. This implies that the presence of online course-compact influences students' academy performance. Thus, the null hypothesis (H_{03}) was rejected, while the alternate hypothesis (H_{a3}) which says the provision of online course-compact significantly enhance students' academy performance was accepted.

4.6.3 Test of Hypothesis Three

The third hypothesis was formulated based on research question and research objective,

Research Objective 3:

To explore the extent to which biometric records influences students' academic performance.

Research Question 3:

To what extent has biometric records influenced students' academic performance?

Hypothesis Three

H_{03}: Biometric records does not significantly influence students' academic performance

H_3: Biometric records significantly influence students' academic performance

Hypothesis three was statistically tested using multiple regression to (i) identify whether or not there is a relationship, and (ii) examine the degree of the relationship, between the

independent variable (biometric records) and dependent variable (students' academic performance); (iii) to access the predictor importance of the variables and finally (iv) to analyze the significance effect of the variables under study.

Table 4.65: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.230[a]	.053	.050	.58221

a. Predictors: (Constant), SAP

The model summary table shows how much of the variance of the dependent variable (students' academic performance) is explained by the independent variable (Biometric records). In this case, the R square shows a coefficient determination R square (R^2) of about 0.53 if expressed by a percentage will be 53%. This infers that 53% variation of students' academic performance is predicted by the measures of Biometric records

The adjusted R square of 0.050 (5%) showed variability of the independent variable (Biometric records) while the standard error of the estimate indicates .58221 which signifies error term. This indicates that 5% of the variations students' academic performances are explained by Biometric records.

The findings are supported by Analysis of Variance ANOVA (F test) results that the model or none of the parameters was equal to Zero.

Table 4.66 **ANOVA[a]**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.911	1	5.911	17.438	.000[b]
	Residual	106.097	313	.339		
	Total	112.008	314			

a. Dependent Variable: SAD

b. Predictors: (Constant), BR

Decision Rule: Reject the Null hypothesis, when the significance value is below 0.05.

Do not reject hypothesis, when significance value is greater than 0.05.

Interpretation of Result: The ANOVA table shows that the F value is 17.438 at .000[b] significance level. The implication is that Biometric records has a significant effect on students' academic performance

Decision: Reject the null hypothesis. Therefore, there is a significance influence of Biometric records on students' academic performance

Table 4.67: Coefficient Table for the Independent Variable (Biometric records)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.921	.206		14.180	.000
	BR	.256	.061	.230	4.176	.000
a. Dependent Variable: SAD						

Source: Fieldwork (2021)

The coefficient table above depicts the statistical significant contribution reflected in the simple model expressing the extent to which variables included in the model contributed to the prediction of the dependent variable via the viewing of the sig column in the table and checking for the multicollinearity in the model. The level of significance was based on a level of 0.05 for a two-sided test, with the absolute value of the test statistics (T) greater than or equal to the critical value of 1.96. The model revealed that Biometric records had statistical significance in predicting students' academic performance with high beta values (*beta* = .230) with Tval (4.176) higher than 1.96, sig. .000 $p < .05$). This means that the presence of Biometric records in the University for lectures is of a high impact in knowledge transfer in the academic performance of students. This implies that for each unit increase in Biometric records, there are up to .230-unit increase respectively in students' academic performance.

Decision: The significance level below 0.05 implies a statistical confidence of above 95%. This implies that the presence of Biometric records influences students' academic performance. Thus, the null hypothesis (H_{03}) was rejected, while the alternate hypothesis (H_{a3}) which says Biometric records significantly influence students' academic performance was accepted.

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATION, LIMITATIONS OF STUDY AND SUGGESTIONS FOR FURTHER STUDY

5.0 INTRODUCTION

This chapter is divided into four sections namely: summary of findings, conclusion, and recommendations as well as the limitation of the study and suggestion for further study.

5.1 SUMMARY OF THE FINDINGS

The study is to examine the effect of ICT Deployment on Students' Academic Performance in Landmark University, Omu-Aran, Kwara State.

This study make use of quatitative analysis of the questionnaires administered.

The key findings of this study are as follows:

Landmark University measures the impact of students learning on achieving academic Pursuit by providing ICT resources (time, materials, tools, etc.) for learning process.

Through the provision of ICT infrastructure student understand course expectations and how their performance is evaluated through the provision of course compacts that promotes and enhance learning interest.

Through the deployment of ICT student can communicate with their lecturers via emails for feedbacks and other academic support.

The installation of smart boards in classrooms for lectures has significantly improved student learning experience which in turn has improved student academic performance.

The study also established that students are more engaged in learning process when the smart board is being used for lectures.

The possession of personal computer by students has made access online course compact efficient and helped improved students' learning experience without a face-to-face lecturer interaction.

Based on the available online course compact, students do not mind meeting instructors or classmates in person and ask questions when they have a problem or question from the provided online course compacts.

The provision and deployment of ICT as a tool for learning has increase the reputation of Landmark University in eyes of the customers' parents, guardians and prospective students respectively.

The use of biometric data capturing for class attendance and other university functions and assemblies have reduces absenteeism especially for lectures since attendance are prorated.

5.2 CONCLUSIONS

The study reveals that there is no significance influence of smart boards on students' Academic Performance in Landmark University.

The study also proofs that the presence of smart board influences student learning culture and it use has no significant impact on students' Academic Performance in Landmark University.

Online course-compact has significant effect and enhances students' Academic Performance in Landmark University.

The use of Biometric data capturing for records has a significant influence on students' academic performance in Landmark University.

5.3 RECOMMENDATIONS

1. There is need to prioritize lecturers and facilitators training and capacity building programs in the use of ICT infrastructure with emphasis on the smart boards in order to be a step ahead of students who are more tech savvy to avoid compromising and manipulations of academic resources.

2. Investment in cyber security infrastructure is a must in order to protect the integrity of student academic and management records.

3. Having seen the tremendous impact of the deployment of ICT infrastructure on students' academic performance; in addition to physical class attendance, there is need to take the bold step of charting are road map for reducing the use paper-based exams or better put; providing alternatives to paper based test and providing computer-based assessment for theory and objective based exams for students by 50% in the next 10 years.

4. This move will also help students with bad writing skills do well academically due to digital writing aids.

5.4 SUGGESTION FOR FURTHER STUDY

The study was delimited to the deployment of ICT infrastructure in classes and a tool for aiding academic performance.

However, further studies can be carried out using other variables not captured in this research in the area of the deployment of ICT infrastructure for assessing students' learning Culture and learning experience in Landmark University.

REFERENCE

Adeoye Y.M., Oluwole A. F., and. Blessing l. A. (2013) Appraising the Role of Information Communication Technology (ICT) as a Change Agent for Higher Education in Nigeria, *International Journal of Educational Administration and Policy Studies*,.5 (8) 177-183.

Ahmed J.U., (2009) Use of ICT in the Private Universities of Bangladesh, *International Journal Of Educational Administration,* Vol. 1, no. 1,77 –82.

Ajayi, I.A., (2008) Towards Effective Use of ICT for teaching in Nigerian Colleges of education. *Asian Journal of Information Technology*, 7(5): 210—214.

Anagbogu, German-James and Bisong, Anthony. (2020). Perception of Web-Quest Technology and Competence On Learning Effectiveness Among National Open University Students' In Akwa-Ibom State, Nigeria: Implication For Global Competitiveness.

Abbitt J., and Ophus, J. (2008). What we know about the impacts of web quests: a review of research. *Aace Journal*, 16(4), 441-456

Aina, L.O. (2004). Coping With the Challenges of Library and Information Services: The Need for Institutionalized Professional Development. *Nigerian Library Association Conference Proceedings*. p.4.

Alessi, S.M., and Trollip, S.R. (1985). Computer-Based Instruction: Methods And Development, Englewood cliffs, nj: prentice-hall.

Bakkabulindi F.E.K., Mugagga A.M., Shopi J.M., Kabasiita A.J. (2015). Application Of The Unified Theory Of Acceptance And Use Of Technology To The Use Of ICT By Undergraduates In The School Of Education, Makerere University, *African Higher Education Review (Aher)*, Vol.9 no. 1&2, 4-17.

Bhattacharyai and Sharmak. (2007). India in the Knowledge Economy –An Electronic Paradigm, International, *Journal of Educational Management.* 21(6) 543-568.

Bereiter, C. (2002). Education and Mind in the Knowledge Age. mahwah, nj: lawrence erlbaum associates.

Bransford, J.D., Brown, A.L., & Cocking, R.R. (eds.) (2000). How People Learn: Brain, Mind, Experience, And School. Washington, DC*: National Academics Press*

Chinwe M.T.N. (2010). The Use of ICT in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife. University of Nebraska - lincoln digitalcommons@university of nebraska – lincoln. Library philosophy and practice (e-journal) libraries at university of nebraska-lincoln.

Debarun C., Soumya K., Dhara & Adrinil S., (2018) Effectiveness of ICT in strengthening the process of higher education system in India. *Amity Journal of Management Research3 (1),*

Egoeze F., Misra S., Maskeliūnas R., and Damaševičius R. (2018). Impact of ICT on Universities Administrative Services and Management of Students Records: ICT in

University Administration. *International Journal of Human Capital and Information Technology Professionals, 9, 2, 1-16.*

Evoh, C.J. Policy Networks and the Transformation of Secondary Education through ICTs in Africa: The Prospects and Challenges of the Nepad E-Schools Initiative. *int. j. educ. dev. using inf. commun. technol*. 2007, 3, 64–84.

Federal Ministry of Education. (February 2019) National Implementation Guidelines for ICT in Education

Goodyear, P., Retalis, S. Learning, Technology and Design. In Technology-Enhanced Learning; Brill Sense: Rotterdam, the Netherlands, 2010

Hyunjin Cha 1, Taejung Park 2, And Jongwon Seo. received: 24 March 2020; accepted: 1 April 2020; published: 8 April 2020. What Should Be Considered When Developing ICT-Integrated Classroom Models For A Developing Country?

Imoro Pars Naabahajara1and Musah Bukari (2017) Students' Perception Of ICT on Teaching and Learning At Wurishei Community Al-Badah Junior High School, Tamale, Ghana. 23(1): 1-10, 2017; article no.jesbs.37154issn: 2456-981x *(Past Name: British Journal Of Education, Society & Behavioural Science, Pastissn*: 2278-0998)

Jegede O. (2002). An Integrated ICT -Support for ODL in Nigeria: The Vision, The Mission and The Journey So Far. Being Paper Prepared for The Learntec-Unesco 2002 Global Forum on Learning Technology, Karlsruhe, Germany 3-8 February, 2002. *Retrieved from portal.unesco.org on* 8/9/2006.

Jegede, S.A Department of Curriculum Studies, Faculty of Education, Ekiti State University, Ado-Ekiti, Nigeria. Students' Perception Of The Availability And Utilization Of Information And Communication Technology (ICT) In The Teaching And Learning Of Science Subjects In Secondary Schools In Ekiti State, Nigeria. *International Journal Of Education & Literacy Studies* ISSN 2201-568x (print), ISSN 2201-5698 (online) vol. 1 no. 1; July 2013. URL: http://dx.doi.org/10.7575/aiac.ijels.v.1n.1p.94

Jager, A.K. and Lokman A.H. (1999). "Impacts of ICT in education; the role of the teacher and teacher training", *Paper Presented at the European Conference on Educational Research, Lahti, Finland* 22-25 September, 1999

Kulik, J.A. (1994). "Meta-Analytic Studies of Findings on Computer-Based Instruction". in e. l. baker and h. f. o'neil, jr.(eds.), "technology assessment in education and training" hillsdale, nj : lawrence Erlbaum

Kozma, R.B. ICT, Education Reform, and Economic Growth: A Conceptual Framework; white paper; intel: santa clara, ca, usa, 2008.

Kozma, R.B. A Framework for ICT Policies to Transform Education. In Transforming Education: The Power of ICT Policies; Unesco: Paris, France, 2011; pp. 19–36.

Krubu, D.E and Osawaru, K.E. (2011). The Impact of Information and Communication (ICT) In Nigerian University. *Retrieved April 10. from digital commons. unl.edu/cgi/viewcontent.cgi?article1614&context=libphilprac*.

Makura, A. (2014). Students' Perceptions of the Use of ICT in A Higher Education Teaching and Learning Context: The Case of a South African University, *Mediterranean Journal of Social Sciences*. 5. 43-47. 10.5901/mjss. 2014.v5n11p43.

Massaquoijg (2006). Trends and Advances in Engineering Education in Africa, *Retrieved from http://www.Imillionpaper.Com on* 28/1 0/2006.

Mcluhan. M. (1962). The Gutenberg Galaxy: The Making of Typographic Man. Toronto. *University Of Toronto Press*.

Majumdar, S. (2004). Integrating ICT in Teaching & Learning: A Functional Approach Presented at the Unesco-Apeid Writing Workshop for a Guideline and Competency Based Standards for Teachers' Pedagogy technology Integration, Hua Hin, Thailand. March 28-31

Noor-ul-amins. (2013). An Effective Use Of ICT For Education And Learning By Drawing On Worldwide Knowledge, Research, And Experience: ICT as a Change Agent For Education (A Literature Review), *Scholarly Journal Of Education*, Vol. 2, no. 4, 38-54

North Central Regional Educational Laboratory (NCREL). (2003). Indicator: Range Of Use, [online]. *available:www.ncrel.org/engange/framewk/efp/range/efranra.htm* [July 15, 2003

Olaorei. B. (2014).The Impacts (Positive And Negative) of ICT On Education In Nigeria, Developing Country Studies, vol.4, no.23, 154-156.

Oni A., and Uko E.S. (2016). Utilization of ICTs as teaching aids in two higher education institutions in Lagos, *Makerere Journal Of Higher Education*, Vol. 8,no. 2, 129 –138.

Odionye, C.M. Uses and Applications of ICTs in Nigerian University Libraries: The Case of UNN. *Research Journal of Mass Communication and Information Technology* vol. 2 no.3 2016 ISSN: 2545-529x www.iiardpub.org

Rambe, P. and Nel, L. (2013). Students' Perceptions On The Usefulness Of Educational Technologies At A South African University. Paper Presented At the 411-Xvi. *Retrieved On 09 May 2014 from Http://Search.Proquest.Com/Docview/1467836016?Accountid=15731*

Rodríguez, P.; Nussbaum, M., Dombrovskaia, L. ICT for Education: A Conceptual Framework for the Sustainable Adoption of Technology-Enhanced Learning Environments In Schools. *Technol. Pedagog. Educ*. 2012, 21, 291–315. [crossref]

Sanyal B.C. (2001). New Functions of Higher Education and ICT to Achieve Education for all. Paper Prepared for the Expert Roundtable on University and Technology-For-Literacy and Education Partnership in developing Countries, *International Institute for Educational Planning, UNESCO, Paris*.

Sharma R. (2003). Barriers in Using Technology for Education in Developing Countries, *IEEE0-7803-7724-9103. Singapore Schools', Computers & Education*.41 (1)49—63.

Stensaker, B., Maassen, P., Borgan, M., Oftebro, M.and Karseth, B. (2007). Use, Updating and Integration of ICT in Higher Education: Linking Purpose, People and Pedagogy. Higher Education, 54: 417-433.

Ser (1997). Ict En Arbeid: Advies Informatic-En Communication Technology En Arbeid. Den Haag : Ser Sociaal -Economische Raad

Salam, S.; Zeng, J.; Pathan, H. Impediments to the Integration of ICT in Public Schools of Contemporary Societies: A Review of Literature. *J. Inf. Process. Syst*. 2018, 14, 252–269.

Tok, B.R & Sora M. (2013). Perspective of Emerging Integrating Technology (ICT) In Learning and Teaching. *International Journal of Information and Education Technology*, 3 (2) 282-285.

Tondeur, J., Valcke, M., and Van Braak, J.A. Multidimensional Approach to Determinants of Computer Use in Primary Education: Teacher and School Characteristics. j. comput. assist. learn. 2008, 24, 494–506. [crossref

Technology Overview in Schools - ICT Infrastructure. *https://www.pdsttechnologyineducation.ie/en/technology/*

Unesco. (2002). Information And Communication Technology In Education: A Curriculum For Schools And Programme Of Teacher Development (Eds J. Anderson And T. Van Weert). Unesco, Paris. *[Online]. Available: http://unesdoc.unesco.org/images/* 0012/ 001295/129538e.pdf [accessed 8 april 2004].

Unesco. (2005). Regional Guidelines on Teacher Development for Pedagogy-Technology Integration [Working Draft] (Ed S. Majumdar). Unesco, Bangkok. .

Ugwuanyi, C.F. (2012). Influence of ICT Literacy Skill on Its Application for Library Use Among Academic Librarians In South-East Nigeria. *Unpublisbed Masters Project. Department Of Library Science. University Of Nigeria, Nsukka*.

Udochukwu, C., Njoku, D., Alphonsus, O., & Rex, A. (2019). The Impact of ICT Based Learning In Tertiary Institutions In Nigeria *International Journal Of Engineering Applied Sciences And Technology.* 4. 1-6. 10.33564/ijeast. 2019. V04i02.001.

United Nations Educational, Scientific and Cultural Organization (UNESCO). Transforming Education: The Power of ICT Policies. Available Online: *http://www.unesco.org/new/fileadmin/multimedia/field/dakar/pdf/transforming%20education%20the%20power%20of%20ict%20policies.pdf* (accessed on 25 may 2018)

Vajargah K.F, Jahani, S. and Azadmanesh, N. (2010). Application of ICTs in Teaching and Learning At University Level: The Case Of Shahid Beheshti University. *The Turkish Online Journal of Educational Technology*, 9 (2), 33-39.

Womboh, B.S.H and Abba, T. (2008). The State Of Information and Communication Technology (ICT) In Nigerian University Libraries: The Experience of Ibrahim Babangida Library, Federal University Of Technology, Yola. Library Philosophy and Practice.pp.1-6

Yunus, M.M., Nordin, N., Salehi, H., Embi M.A and Salehi Z. (2013). The Use of Information Technology (ICT) In Teaching Esl Writing Skills. *English Language Teaching*, 6 (7), 1-8.

APPENDIX

QUESTIONNAIRES

THE ICT DEPLOYMENT AND ACADEMIC PERFORMANCE IN LANDMARK UNIVERSITY

Dear respondent,

I kindly solicit your assistance in filling this questionnaire on the "ICT DEPLOYMENT AND ACADEMIC PERFORMANCE IN LANDMARK UNIVERSITY". This information supplied is to form the basis of the study. Therefore, your identity is protected and information supplied is purely for academic research. The questionnaire has been structured in a very simple and convenient pattern. Thank you.

Yours faithfully,

OLAONIPEKUN Oluwasegun Ayotola
(Researcher)

SECTION A: BIO-DATA

INSTRUCTION: *Read the questions carefully and tick (✓) as appropriate the correct answers as they relate to the questions.*

1. **Gender:**
   Male ( ) Female ( )
2. **Age:**
   14-18 years ( )
   19-21 years ( )
   22-25 years ( )
   26yrs & above ( )
3. **College:**
   CBS ( ) CAS ( ) COE ( ) CPAS ( )
4. **Level:**
   100 ( ) 200( ) 300( ) 400( ) 500( )
5. **Gadget Owned:**
   Laptop ( ) Tablet ( ) None ( )

Please indicate the extent to which you agree with the following statements below.
Tick as appropriate in the boxes using a tick (√) or cross mark (x)

Section B: Students Learning Culture						
S/N	**Statement**	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1	I understand how my learning will contribute to achieving the intended semester academic goals.					
2	Lecturers discuss expectations for learning with students they lecture.					
3	Lecturers actively seek knowledge and expertise from the students they manage in order to improve overall academic performance					
4	Feedback and self-reflection are part of the routine of all lecture activities.					
5	Lecturers and Students share responsibility for learning.					
6	Students have the resources (time, materials, tools,					

	etc.) to apply learning to their learning process.					
7	Landmark University measures the impact of student's learning on achieving academic Pursuit.					
8	Management actively support learning through their words and actions.					
Section C: Student's Learning Experience						
	Statement	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1	I feel welcome and respected.					
2	I understand course expectations and how my performance is evaluated					
3	I feel challenged to learn a lot in this course.					
4	Course activities effectively promote my learning and interest in the subject.					
5	The learning tools (e.g. course texts, notes, slides, videos, exams, projects, etc.) support my learning.					
6	I am invited to be an active participant in my learning (either face to face or online).					
7	I have opportunities to learn with and from other students in this course					
8	The feedback I receive on my work is useful to me for making changes and improvements.					
9	I know where to go for help in this course if, and when, I need it.					
10	I find communication with the Lecturers (e.g. office hours, email, Canvas, etc.) effectively supports my learning					
Section D: students' Academic Performance						
	Statement	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1	I made myself ready in all my subjects					
2	I pay attention and listen during every discussion.					
3	I want to get good grades in every subject.					
4	I actively participate in every discussion.					
5	I gain focus when I see technical problems					
6	I enjoy homework and activities because they help me improve my skills in every subject					
7	I exert more effort when I do difficult assignments					
8	Solving problems is a useful hobby for me					
Section E: Smart Board Usage						
	Statement	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
1	I am more engaged when the smart board is being used for lectures					
2	My favorite lectures are from the use of smart boards					
3	The use of smart boards confuses my lectures knowledge acquisition					
4	I struggle to comprehend with the smart board usage					
5	I would rather have lectures without smart board					

6	My Lecturers struggle to make use of the smart board					
7	The smart board is beneficial to my learning as a student					
Section F: Online Course Compacts						
1	I have a computer or am able to get access to one easily on a regular basis					
2	I am fairly comfortable with keyboarding					
3	I believe that high quality learning can take place without face-to-face interaction					
4	I am able to go to class at times and locations that I choose instead of being tied to a set time and place					
5	I am able to go to class prepared because of Online Course Compacts					
6	Based on the available online course compact, I do not mind meeting my instructors or classmates in person					
7	I am familiar with Landmark University Online Course Compacts					
8	My lecturers struggle to tally online course compacts with occurring lectures					
9	I ask questions when I have a problem or question from the provided online course compacts					
Section G: Biometrics Records						
1	my learning ability and adaptability of is low (in comparison to expected use of the biometrics usage					
2	I am very dissatisfied with the situation within the university with the biometrics usage					
3	The number of Student's complaints within the last semester has increased strongly					
4	Reputation of our University in eyes of the customers has Increased from the engagement of our Biometrics Records					
5	Absenteeism is in our classes (relative to lecture) is very low.					
6	Biometrics Records has made knowledge comprehension very high					
7	Biometrics Records has made students 'trust in leadership low					
8	Perception of the biometric records by the University has increased Student's Academic performance					
9	Landmark University conduct biometrics records for all academic functions					