

BOOK OF PROCEEDINGS

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Faculty of Education, Adekunle Ajasin University,
Akungba-Akoko, Ondo State, Nigeria.

on

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Edited By:

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FOREWORD

The Faculty of Education 2nd International Conference 2023 is aimed at bringing together diverse researchers in the field of education to discuss Security, Economy and Education for National Development. The Conference provided a setting for discussing recent developments on a wide variety of topics. One of the greatest challenges facing the world today is insecurity and economic instability. The integrated nature of today sustainability issues require citizens not to only have knowledge and skills to display certain sustainability behaviour, but also having the competencies to act upon emerging sustainability challenges including insecurity both at local, national and global levels.

The increasing threat of insecurity and economic challenges affecting the education industry necessitates urgent scientific solutions through researches. This 2nd International Conference was organized with the sole aim of raising prognosis for knowledge driven and educationally empowered sustainable future for mankind aligning with national development goals amidst the various identified vices. It was also aimed at developing a scholarly research-based community through knowledge sharing, practical solutions and greater collaborations among staff of the Faculty of Education, other staff of Adekunle Ajasin University, other academics in Nigeria and the global community.

Our objective in organising the 2nd International Conference is to provide a multi-disciplinary forum, to foster communication among participants, and to support the sharing process of diverse perspectives of the same trans-disciplinary concepts and principles to serve the myriad of interests of the international scholarly publishing community and contribution to the knowledge production and dissemination on the menace of global insecurity, economic instability and its threat to the realisation of national development with a focus on how education can be used as the instrument to bring an end to insecurity and economic challenges. Members of staff of the Adekunle Ajasin University, Faculty of Education formed an effective Local Organising Committee, which worked for more than twelve months in planning the event. The Local Organising Committee (LOC) had the onerous task of deciding on the invited speakers, accepting or rejecting papers submitted, and choosing the papers of suitable interest for oral presentation. I thank Dr. B.O. Ajidahun, the Chairman of the LOC, Dr. A.I. Oyetakin, the Co-Chairman of the LOC, and the Secretary of the LOC, Dr. J.O. Osakuade as well as other members of the LOC for their time and efforts which made the 2nd International Conference, 2023 a huge success. While it is impossible to name all those who supported this conference, a special appreciation must go to the Vice Chancellor of the Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria, Professor Olugbenga E. Ige, and his management team for providing a favourable work environment and for the approval to host this International Conference. My special thanks also go to all participants for their robust contributions to the Conference Proceedings. The Lead Paper presenter, Professor Olufemi Victor Adeoluwa, Vice Chancellor, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti, Ekiti State, Nigeria and the key note address presenters Professor Eric Nyarko-Samson, Vice Chancellor, University of Environment and Sustainable Development, Samayi, Eastern Region, Ghana, Professor C.A. Daramola, Deputy Vice Chancellor, Adekunle Ajasin University, Akungba-Akoko and Professor, HRM Oba S.A. Amusehagan, the Kalasue of Apoi Land, Ondo State.



This Conference Proceedings is in two volumes which contain most of the papers presented during the International Conference. I hope that the proceeding volumes will be interesting materials to be read by both academics and non-academics as well. There is no doubt in my mind that this 2nd International Conference has served a useful purpose, as witnessed by the number and quality of papers submitted to it. On behalf of staff of Faculty of Education, Adekunle Ajasin University, I promise that it will become a series to be sustained in this university.

Professor Moshood Ayinde Hassan

Dean, Faculty of Education, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria



PREFACE

The purpose of organizing the 2nd International Conference on Security, Economy and Education for National Development in the Faculty of Education is to provide a multi-disciplinary forum for both disciplinary and inter-disciplinary communication in the education industry. The Faculty attaches great importance to staff development. This is reflected in the various workshops, seminars and conferences being organized from time to time in order to upgrade staffs' knowledge and skills.

The essence of the book of proceedings is to assemble various researchers' views and contributions of intellectuals to academia on the very sensitive issue that has threatened global security in recent time. By this publication, we also wish to make very significant contribution to the volume and quality of literature available to researchers and other related institutions. Majority of the articles in this book cut across various disciplines in the field of education. In all, there are over a hundred (100) articles from various scholars that are accepted for publication in the proceedings which is in two volumes.

The sub-themes explored in the proceedings are Moral Education, Religious Practices, Adult Education, Counselling Education, Security Management, Technological Education Advancement, Language Education, Management Education, Political Education, Geographical Issues, Educational Philosophy, Education for Physical Fitness, Science Education, Early Childhood Education, Health Education, and other related topics for security and national development.

We are convinced that this Book of Proceedings remain a resource material for researchers, academics, faculties and humanity at large. It is therefore recommended for use in tertiary and other related institutions in Nigeria and beyond. Finally, we commend all contributors and editors for this wonderful and thought provoking publication.

Dr. B.O. Ajidahun - Chairman, Local Organising Committee

Dr. A. I. Oyetakin - Co-Chairman, Local Organising Committee



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PSYCHO-COMMUNITY'S IMPACT OF SUITABLE ECONOMY FOR NATIONAL DEVELOPMENT

Lead Paper Presentation

at the

2nd Faculty of Education International Conference
Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria
13th – 15th June, 2023.

By

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Introduction

A lot of research and interventions based on positive psychology are currently available to change the negative approach and turn constraints into acceptance of change by focusing on the well-being of individuals, groups, and communities. Every organization or country has plans and strategies to achieve its developmental goals through 'psycho-community's impact of suitable economy for national development.'

This paper explores psycho-community's impact on suitable economy for sustainable development which revolves round: 'the study of how individuals affect the economy and how the economy affects individuals' (Stephen Lea and co-authors, 2018). It is observed that human attitudes to ecological, economic, and social environment are key determinants to have suitable or otherwise economy in every community. The psychological approach to create a suitable economy implies managing its human and natural resources well in order to sustain community and national development and growth for future generations. In fact, to tackle critical global challenges, the United Nations has proposed 17 sustainable development goals: no poverty; no hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation, and infrastructure growth; reduction in inequality; sustainable cities and communities; responsible consumption and production; climate action; life below water; life on land; peace, justice, and strong institutions; partnerships to achieve the goals (United Nations, 2015). These are challenges facing every individual, community or all nations of the world. It is proposed that every individual, community or nation will address these challenges before the end of 2030.

Well-being is a key factor to sustainable community and national development and growth. Well-being is, therefore, an essential part of community life and human resources management (Di Fabio, 2017). The behaviour of individuals and groups or associations in a community can influence suitable economy or otherwise. This is the more reason why well-being and accessible to resources are critical elements to suitable economy for sustainable national development. Other factors such as climate and environmental issues, justice, security, education, inclusiveness, economic policies, emotional intelligence, peace, and conflict resolutions also play important roles.

Personal Wellness and Accessible to Resources.

According to World Health Organization (WHO), health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." It is a must-be resource that allows people to live individually, socially, and economically productive lives, providing them the freedom to work, learn and engage actively in family and community. Total well-being is considered as an uncommon wealth asset that no money can acquire. This is because a wide range of factors affect the health status like personal, economical, social, and environmental.

This is why all cases of injustice done to ecological, economic, political, people and their environments are always resisted with violent protests. For instance, environmental pollutions are threats to



life, economic and sustainable development. They have been cited for various crises and agitations all over the world, including Nigeria. The Niger Delta Republic leaders and their youth militants believe that they want to control the resources in their region because of injustice in the distribution of resources in Nigeria to their detriments, whose communities produce oil and gas resources which are the main national economic income in Nigeria. This is the main reason for the prolong crisis in Niger Delta Region. Isaac Boro fought and died as a result of agitation for self-determination, and Ogoni nine led by Saro Wiwa paid the supreme sacrifice for the same reason. All happened in the Niger Delta Region because of injustice. Today, what these heroic characters died for are still not well-attended to by the relevant authorities in Nigeria. The people in that region continue to complain about continued environmental pollution and degradation, poverty, lack of modern medical services, marginalisation, lack of social amenities, poor living conditions, etc.

This is one of the main reasons the Niger Delta youths take to arms to fight for their rights and their leaders demand for Resource Control and self-determination, making the Niger Delta Region very unsafe for economic activities and sustainable development. Consequently, oil pipelines are damaged, affecting oil and gas mining and production at the refineries. Their agitations and actions are based on violations of the human rights and freedom provisions in the 1999 (Amended) Federal Republic of Nigeria Constitution. Despite government interventions to address these challenges, there is no meaningful development to show for it in the region. The status quo remains. Such interventions include the establishment of the Niger Delta Commission (NDDC) and the Federal Ministry of Niger Delta to specifically develop the region. The United Nations (UN) recognises fundamental human rights to basic living standards. Lack of social justice to safeguard fundamental human rights in pursuance of equal rights and equal opportunities for communities and nations often creates setbacks for suitable economy and development.

The fundamental principles of social justice emphasize: Inclusion, collaboration, equal access and equal opportunities. It is well articulated in the Nigeria Constitution that no citizen of Nigeria is to be subjected to any disabilities or restrictions based solely on the fact that he/she is a member of a particular community, ethnic group, place of origin, sex, religion or political opinion, or circumstances of his/her birth. Everyone is, therefore, entitled to all the rights and freedoms set forth in the 1999 Federal Republic of Nigeria Constitutional Declarations. Any infringement on any of the Human Rights such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status always causes crisis and devastating economic damages and developmental setbacks.

Social Justice and its Importance to National Development.

Social justice promotes fairness and equity across many aspects of society. For example, it promotes equal economic, educational and workplace opportunities. It is also important to the safety and security of individuals and communities. Economic sustainability can, therefore, be secured by the following five key factors: socio-cultural respect, community participation, political cohesion, economic sustainability, and environmental sustainability. At the same time the ecosystem provides factors of production that fuel economic growth: land, natural resources, labour, and capital (which is created by labour and natural resources). Sustainable economic growth is managing these factors in a manner that there will be fairness, equity and justice in their distribution without prejudice. Social justice impacts positively on the attitudes of members of any community to secure suitable economic environment for sustainable development.

Community and National Development.

Development experts have come to understand the fact that development is not just an economic matter alone but also a psychological matter. Before it becomes an economic, political, cultural or social matter, it all begins as a psychological matter. The speed of change in communities at various levels depends on the speed of change in the attitudinal, mental and behavioral characteristics of the people in such communities. For development take place, it requires both cognitive and behavioral characteristics in order to have a 21st century human being properly-called and, consequently, a modernised society. Ideally, for members of a community to witness and sustain national development, including economic development, political development, cultural and social development, and security-defence development, they must be cognitively and behaviorally developed. This means that development begins, according to psychologists, first of all with mental, psychological and behavioral development.

The development of the mind and its transition from simplicity to complexity is a first step in all human developmental processes. The cognition of each individual, which includes a set of beliefs, ideas,



and higher functions of the mind such as thoughts, perceptions, reasoning, critical thinking, problem-solving, and decision-making, needs to be developed qualitatively in order to hope for sustainable national development. Cognitive development brings with it behavioral development and leads to the development of behaviour in the direction of positive and optimal actions in life. Therefore, a country and a community develop when there is a belief in development in the minds of the people of that community, and the behaviour of its people will rotate in the direction of development. In this paper, an attempt is made to discuss psycho-community's factors and their impacts on suitable economy for development and underdevelopment of individuals, communities and nations.

Importance of Diversity (Gender, Ethnicity, Disability, Religious Differences, etc).

Diversity is to strengthen unity if its gains are recognised, explored and used for social cultural, economic and political advantages for national unity and sustainable development. The importance of gender, ethnicity, disability, religious differences to strengthen democracy, economic development and cultural unity in diversity as a nation is fundamental to sustainable community and national development. For instance, having won the election, Mr. President, Senator Bola Ahmed Tinubu, some parliamentarians and other stakeholders were clamouring for the balance of power and inclusivity, insisting that a Christian must be included in the nation's top power hierarchy. Eventually, a Christian Senate President, Senator Godswill Akpabio, emerged. It explained that Nigeria could not afford to have a Muslim as a Senate President at this time having produced Muslims as President and the Vice-President.

The importance of diversity is tolerance, justice, equity and fairness and inclusiveness as practised in such countries like United Kingdom, Canada, United States of America, etc. One of the strengths of diversity is inclusiveness. Nigeria unity in diversity, no doubt, will be strengthened more by the following factors: socio-cultural respect, indiscriminate community participation, political cohesion, economic justice, equity and fairness, and all-inclusive treatment of gender, ethnicity, disability, religious differences for sustainable community and national development and growth.

The Role of the Community's Psychology and its Impact on suitable Economy for Community and National Development.

Essentially, psychology helps people in large part because it can explain why people act the way they do. With this kind of psychological understanding, certain behavioural patterns could be understood so that some negative attitudes could be worked upon to help people improve their decision-making, conflict resolutions, stress management, behaviour based on understanding past behaviour to better predict future behaviour. This approach advocates suitable conditions for suitable economy and sustainable national development. This approach is a current area of research study in the field of sustainable science.

The core values for community and national development include generational values, economic sustainability, social sustainability, empowerment and others. This approach will lead to suitable economy aimed to increase productions and sustainable community and national development, better physical development projects, better education, higher standards of living and less poverty, a cleaner environment, more quality of opportunities, greater individual, community and national development.

The new approach on sustainable development calls for new awareness and approach to change from old tricks to new psychological dimensions that see disturbing and economic damaging crises from a new perspective of primary prevention point of view as well as from the problem-solving perspective. This involves cultivating preventive and problem-solving attitudes to achieve sustainable development and well-being through promotion of cordial relationships and positive narratives (Di Fabio, 2017). A lot of research and interventions based on positive psychology are currently available to change the negative attitudes of people into well-being and development of individuals, groups, and communities. This can best be done with the applications of psychological principles of cross interactions that combine individual approaches and collective approaches, thereby providing for timeous interventions from a primary prevention perspective (Hofmann and Tetrick, 2003).

Suggestions

Every individual must demonstrate qualities of patriotism to sustain our community development by:

- saving lives.
- stopping damages to community and government property in our communities.



- reducing economic losses.
- stopping social disruptions in our communities and maintaining peace and collaboration with others to develop our communities.
- cooperating with members, companies and government at all levels to resume economic operations fully quickly in our communities so that our communities can enjoy development and growth.
- ensuring community collaboration and teamwork within and without in order to secure sustainable peace and security on the shared borders with other communities.
- maintaining mutual respect, honesty, and integrity in dealing with neighbouring communities.
- ensuring that tested and trusted leaders (youths, women, traders, students, traditional rulers, chiefs, etc.), who will lead by examples of integrity, transparent honesty, respect for others are chosen to lead and represent their interests in signing contract agreements with companies and other communities that share common economic resources.

Conclusion

There is no magic anywhere for sustainable community and national development rather than the psycho-community's members' maturity that will impact on suitable economy. Members of every community and community leadership have to review their past actions that are anti-developmental, and unfriendly to investors and sustainable development and growth. There is urgent need to change over to positive attitudes to resolve knotting issues for personal, community and national development to take place. All the challenges to development must be identified and every community should think outside the box to proffer lasting solutions. This calls for social emotional intelligence approach from both the youths and community leaders. Community Development Association (CDA) should be put in place to plan and identify strategies to accomplish developmental goals.

For every development plan to achieve its goals, there must be inclusiveness policy at the community and national levels. There must be productive engagements of all stakeholders to find the way forward to bring back the investors, and collaborate with government to provide adequate security and conducive business environment for sustainable development to thrive.

This paper, therefore, concludes that community members should explore the gains of psychological approach to development and make our community crisis-free. All unresolved disagreements between any warring community and investors or governments that are impeding economic activities or productivity must be resolved without further delay to pave way for suitable economy and sustainable development. Let our emotions, mindsets and attitudes explore what motivates individuals to take positive actions in our daily lives as well as allowing these to influence our wellbeing in our environment.

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THE ESSENTIALITY OF HOME AND WORKPLACE SECURITY FOR NATIONAL DEVELOPMENT

By
Prof. C. A Daramola
Deputy Vice Chancellor (Administration)
Adekunle Ajasin University, Akungba-Akoko

**Being a keynote address presented at the 2nd International Conference of Faculty of Education,
Adekunle Ajasin University, Akungba-Akoko
June 13th – 15th, 2023**

Introduction

It gives me great pleasure to once again join colleagues in the field of education for the 2nd 2023 Annual Conference of the Faculty of Education, Adekunle Ajasin University, Akungba-Akoko.

I want to begin by extending on behalf of the Dean of Education and Faculty members hearty welcome to all participating guests and warm congratulations to the Faculty.

Right now, changes in the security architecture of the country and the world of our times are unfolding in ways like never before. These changes are posing challenges that must be taken seriously by humanity. New traditional security risks are already emerging. New issues such as home and workplace security are also vying for attention. Viewed in such a context, the theme of the year's annual conference "Security, Economy and Education for National Development" cannot be more relevant.

As an ancient Chinese adage goes, "one must not change his commitment or give up his pursuit even in the face of dangerous risks". Problems are not to be afraid of, as it is one problem after another that have driven the progress of human society. We need to work together to defend people's lives and health. Safety and health are the pre-requisites for human development and progress.

And I think the topic for discussion is just at the heart of the matter, it is at the heart of our values, and at the heart of who we are. So this is an exceptional opportunity today to reflect on what we can do collectively and individually to help promote security in our homes and workplace. Protecting these values is at the heart of our mission as educators. We have long recognized the important role education can play in security and safety in national development.

It is important that we stay committed to the vision for common, comprehensive and sustainable security. In other words, human security should be a conceptual tool that leads to action. Therefore, providing security to people calls for a broader range of responsibilities than ensuring the security of the state. Obviously, the importance of security in the workplace is at an all time high. People and visitors are regularly back in offices. And a full office can be a target for security breaches, both physical and digital. Workplace threats are getting more and more sophisticated and complex.

What is the purpose of security?

The most crucial purpose of security is to protect people and their property. These include both their physical safety and their possessions. Good security measures will make it difficult for criminals to target a person or a place. In other words, security is protection from or resilience against potential harm (or other unwanted coercion) caused by others, by restraining the freedom of others to act. (Wikipedia).

The Concept of Human Security

Globally speaking, one's home and workplace and country remain strong symbols of security. They make us feel how fragile and exposed people can be, how real dangers, which, we often think of as distant measures can suddenly become very close, and affect us directly. There is much debate about the conceptual value of human security. There is a growing awareness that states cannot and will not be secure unless people feel secure too.

Here, I would like to make two points. First, human security though not a legal concept, nor can it be very precisely defined, does however represent a set of very concrete elements – places, objects, values, feelings, a job, a family. Second, and I speak as an educationist, we should not look at security just from the



point of view of theory and definition but rather examine what practical steps and measures can enable us to maintain people in, or restore them to, a state of security.

What is workplace security?

Workplace security refers to the measures put in place to protect people, assets and information from physical and digital threats. These threats can come in different forms, ranging from theft, violence and vandalism, to digital security risks such as cyber attacks, data breaches and hacking.

What are examples of workplace security?

- Preventing violence of threatening behavior in the workplace
- Controlling who enters and exits the premises
- Managing stock to prevent thefts
- Implementing cyber security measures to protect digital data

Keeping the workplace safe and secure

The following are ways to help make any office or workplace more secure

- Develop specific policies regarding the types of information employers are allowed to share with people
 - Institute a 'clear desk' policy. At the end of the work day, require all employers to store all files, folders and paper work in locked drawers or file cabinets
 - Store all sensitive documents in a locked fireproof and water proof cabinet
 - Some documents cannot be replaced. Make sure yours are safe in the event of fire or other disaster.
 - Store all proprietary and confidential information
 - Restrict access wherever possible
 - Provide ID cards/badges for all workers and visitors
 - A measure put in place to quickly determine if an unknown person has been granted access to the premises
 - Install video cameras
 - Ensure parking lots are well-lit and free of hiding places
- Every employee deserves a safe and secure work environment

What are the security measures at home?

How do we maintain security at home and workplace?

International Labour Organization (ILO) experts in Occupational Safety and Health advised on how to create a safe home and workplace environment. Everyday people die and are hurt as a result of accidents at home. More people are injured at home. However, preventing accidents in the home and at work need not be difficult, time-consuming or expensive. Many improvements can be made using only common sense. There are easy ways to implement home security tips.

The following few simple steps can make a lot of difference to your peace of mind:

1. Keep an eye on your home

With the range of security cameras, you can see and hear what's happening inside and outside your home. The latest easy to use smart security cameras can be viewed from anywhere on a smart phone, tablet or computer.

2. Light up the front drive and garden

Intruders like to operate under cover of darkness, so illuminating the surrounding when dark is a good way to deter them. It can also make it safer for you and your visitor to navigate.

3. Increase gate and fence security

Don't give intruders an easy way. Metal gates are more difficult to scale than solid wood alternatives and their open structure means they don't provide cover for an intruder. It is possible to install two different locks on a gate. Make sure that all of your fencing is in good condition.

4. Keep valuables out of sight

Invest in a safe to store your most important belongings



5. Think about where to keep your keys

6. Look like you're home, when you are not

Empty homes are more likely to be targeted by thieves, so it's a good idea to make your home look like it's occupied while you are out. Fool opportunist burglars by switching on and off lights or turning on radio to give them the impression you are at home, while away. Manage your home with your smart phone when you are away.

7. Upgrade your window and door locks

Make it more difficult for intruders to enter through vulnerable doors or windows by improving their security.

8. Photograph and mark your valuables

Take photo of your valuables and security mark them. This can help the police to recover stolen items and improve your chances of getting them back in the event of loss or theft.

9. Add a peep hole to doors

It provides a wide angle view of your visitors so that you can decide to let them in or not.

10. Take home maintenance seriously

Some home maintenance issues can be safety issues

11. Invest in a fire extinguisher

Fire extinguishers are best for small kitchen fires. If the fire is rapidly spreading, get out, don't try to put it out.

Lastly, the best defense is to use common sense inside your home. Among these same lines, teach your kids to be smart about what they do and don't let anyone into your home if they don't respect your rules.

Conclusion

Ladies and gentlemen, I have attempted to outline the complexity and essentiality of human security issues of home and workplace in this paper. I would like to insist on this point – the concepts are in place, but the measures are not. We need to work more on the “operational” aspects of human security.

To conclude, and in wishing you fruitful and interesting discussion, I would like to remind you of the stark reality that providing security to people calls for a broader range of actions and responsibilities from all of us.

Thank you.



SOLVING INDUSTRIAL, SOCIAL AND ECONOMIC PROBLEMS THROUGH ORGANISATION OF CONFERENCES: NIGERIA EXPERIENCE

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Abstract

Interactions among human beings and their settlements in form of nations, tribal groups, and other formations bring about social and economic problems. Dialogue remains a major component of such interactions through meetings, conference, workshop, colloquium, symposium and seminar. This paper is anchored on folk theory of meetings advance by Ravn which refers to the intuitive, on scientific understanding of phenomenon people have on solving industrial, social and economic problems through organisation of conferences with a focus to Nigeria experience. The paper discusses various forms of dialogue that can be employed in resolving issues and problems; discuss various issues that needs to be resolved through dialogue; discuss various type of conferences, colloquium, meetings, seminar, workshop and symposium; and explain the usefulness of dialogue in resolving conflicts. The best way of resolving social economics, political and industrial problems is recourse to dialogue and this is better than engaging in violence. Dialogue gives participants opportunity to have sense of belonging and empathy towards one another and also solve conflicts in the society. The paper concludes that every person and society should imbibe the culture of dialogue to solve any problem rather than engaging in war or whatever nature. Hence, it is recommended that every person should learn about the dynamics of dialogues in order to reduce to minimal level conflict that are shattering the society.

Keyword: Dialogue, folk theory, colloquium, symposium, conflict

Introduction

Human beings inhabit the environment that contains natural and geographical features. In order to make environment habitable, efforts are made by man to influence the environment by tampering with features of environment through technological innovations and industrial revolution. The interactions among human beings and their settlements in form of nations, tribal groups, and other formations bring about social and economic problems. The industries established by various groups of human beings are not free from conflicts. Solving all these social, economic and industrial problems can be resolved through dialogue by holding meetings or conferences.

Dialogue according to the Britannica Dictionary (www.britannica.com/dictionary/dialogue) refers to a discussion or series of discussions that two groups or countries have in order to end a disagreement. Also, it means a conversation between two or more people. The implication of this meaning of dialogue, is that even if two or more people fight or disagree within themselves or even if intra-conflict occurs within a given society or between one group and the other or between two countries, the conflict will be resolved through dialogue.

Dialogue can take any form. It could be through meetings, conference, workshop, colloquium, symposium and seminar. Whichever means, there are ways of organising and executing it. Consequently, this paper titled: “**Solving Industrial, Social and Economic Problems through Organisation of Conferences: Nigeria Experience**” is embarked upon. Towards this end, the objectives intended to be achieved in this paper include:

- i. identifying various forms of dialogue that can be employed in resolving issues and problems;
- ii. discuss various issues that needs to be resolved through dialogue;
- iii. discuss various type of conferences, colloquium, meetings, seminar, workshop and symposium;
- and
- iv. explain the usefulness of dialogue in resolving conflicts.



Literature Review

Theoretical Framework: dialogue as is own theories. However, the one that appears to be relevant in this study is folk theory of meetings advance by Ravn (2013) folk theory refers to the intuitive, on scientific understanding of phenomenon people have. Beside, folk theory of meeting assume that people want to understand why organisational meetings seem so impervious to change. There are many factors such as relevant, economic, political and motivational challenges of meetings which need to be unbundle before meetings can yield its required objective. This is explained by Ravn (2013) in table 1.

Furthermore, Ravn (2013) presented what is called alternative theory to correct the lapses inherited in folk theories of meetings. Alternative theory is transformative in nature because it brings a transformation in meetings practice. According to the scholar, the theory is built on six design principle which replaces folks theory assumption .This is reflected in table 2 adopted from Ravn

Table 1
Six Design Principle which Replace Folks Theory Assumption

Folk Assumption	Expand
1. Meetings will be If you work in an office, you go to meetings occasionally. Meeting. Some are good, some are bad. That is just the way it is. You put up with them or try to stay away.	
2. The agenda is of The agenda holds the key to the meeting. A bad meeting prime importance. will be improved by a better agenda.	
3. The chairman Pun intended. Chairing a meeting is running through a standard executes the meeting. set of formal rituals. Not exciting and not supposed to be.	
4. The leader may pleases When managers are chairpersons, they own the meeting speak as much as he and may speak at length to any and all points on the agenda. Pleases.	
5. Meetings are for Free-for-all discussions are the standard fare of meetings. discussing things. Next to management orientation, this is what meetings are for: speaking our minds.	
6. Speak up or shut up. To speak you need to grab the floor. If, for whatever reason, you do not, you can remain silent forever. It is up to you. No one helps you.	

Source: Adopted from Ravn (2013)

It is also enumerated further in table 2 on the transformative theory meetings for conducive society and progress attainment.



Table 2
A Transformative Theory of Meetings as Facilitated

Assumption	Action	Activities
i. Meetings will be them if we have the tools to do so. Distinguishing form from content and controlling form are first steps	A facilitator can change form meetings by changing their start working on	We can pull meetings into the foreground and be
ii. The agenda is of prime importance. It must specify what the discussion of each item is for: what is to be accomplished through the discussion	Focus and direction are what's important	Being a mere list of topics to be discussed, an agenda does not provide direction.
iii. The chairman executes the meeting supporting the conversation, using alternative, small-group forms of conversation to include everyone	A facilitator controls meeting form to create outcomes	A facilitator guides the meeting along by closely monitoring and
iv. The leader may speak freely people by excessive talk.	The leader must provide vision and stimulate group energy	For the meeting to create value and meaning, leaders must not wear out their
and inspiring leadership	The meeting is a platform for visionary leadership	
v. Meetings are for discussing things facilitated such that it helps us do our work better	Meetings are for barn raising and construction	Not just the exchange of assorted ideas and opinions, meeting talk is
vi. Speak up or shut up dyad, silent reflection, the round robin and cherry-picking	A facilitator uses processes that include everyone	As a matter of course, everyone participates in processes like the buzz

Source: Adopted from Ravn (2013)

Forms of Dialogue

There are various forms of dialogue that can be employed in resolving issues and problems when they arise. For instance, Amphene (1979); Omole (1984); Hassan (1994); and(1997)present some of the strategies for dialogue that can be employed. These include:

Meetings: Robinson and Davidson (2004) define meeting as an act of coming together of people; and as an assembly or gathering at prearranged time, usually to discuss specific topics. Omole (1984); and Hassan (1994) say that a meeting can take place any time between two or more people whereby one of them is chosen as a leader. According to him, various meetings exist as far as industrial training is concerned. For instance, speech-lecture is a form of meeting which is a carefully prepared oral presentation of a subject by qualified individual, characterised by formality. Audience may not actively participate in this one. For speech-forum, this is a learning technique where a qualified person discusses topics of interest. Usually, a chair-person is on the stage or podium to act as moderator during the discussion period. A period of open discussion may follow the speech.

Seminar: Seminar is a form of meeting where views, ideas and information are exchanged among group of people who gathered together for the purpose of studying a subject under the leadership of an expert or a learned person. This method involves identification of a problem and conducting necessary research to



solve the problem. The seminar leader comes to the group in order to share his or her findings with other members of the group. In other words, participants in seminar are usually of the same discipline or profession. For example, those in the medical field can organise seminar with a view to disseminating cutting edge research that has been carried out in the medical profession.

Workshop: Robinson and Davidson (2004) define workshop as course of study or work, especially of an experimental or creative kind, for a group of people on a particular project. Workshop according to Omole (1984), is a group of people with a common interest or problem, often professional or vocational who meet together for an extended period of time to improve their individual proficiency, ability, or understanding by means of study, research, and discussion. Under workshop, theory and practice may be concurrently treated. Similarly, consideration is given to the interests and needs of the participants rather than the leaders of the workshop.

Symposium: Symposium consists of series of related speeches by two to five persons qualified to speak with authority on different aspects of the same topics or related topics. According to Ampene (1979) and Omole (1984), the speakers make presentation to the audience in the presence of the chairperson who is there to guide the speeches.

Colloquium: The dictionary meaning of Colloquium is an academic conference; and a seminar. However, Ampene (1979) states that colloquium: is the discussion of an issue by a panel consisting both of persons with expert knowledge and of learners. Usually this technique is used at the end of a conference, to enable the learners to bring up some outstanding issues for open discussion with the resource persons at the conference (Ampene, 1979:119) This technique develops confidence in the learners as well as encourage participants to put their questions and comments publicly to experts.

Conference: Conference consists of a group of people (of ten or more persons), who may not be from the same disciplines, who are from different organisations and departments, but have some common interest or background knowledge coming together to exchange information and discuss mutual problems. Conference encourages exchange of ideas and improves cooperation among participants. Going through all that have been discussed here, one observes that some elements are common to one another. In other words, one dovetails to the other.

Some Issues and Problems that Require Dialogue

Social issues and problems arise because of human activities through environmental degradation, urbanization, increase in population, contact with foreign culture, information and communication technology (ICT), television, internet services and conflict among groups of people. Many other issues such as examination malpractice, cultism, terrorism, human trafficking, drug abuse, militancy, ritual killings, area boys problem, political killings, advance fees fraud (419) and violent and rigging of election are common among people this days.

Furthermore, George and Ukpog (2013), describe science and technology as a curse to man and humanity because of evils people perpetrate through it despite the fact that it helps to solve complex problems of the society. The scholars also discuss juvenile crime which are immoral behaviors exhibited by children below the ages of eighteen(18 years) or there about. Poverty is one the contemporary problems affecting Nigeria. It is a complete lack of minimal means live-liable among the people George and Ukpog (2013). Similarly, cultism is defines a group of people who follow a system of worship that is different from the usual and established form of religion in a particular society George and Ukpog (2013). All these social problems demand for intervention through the provision of therapy by the specialist, individual and group counselling, and designing of institutional frameworks by government agencies. This can be done through holding of meetings, conferences, colloquium, workshop and the likes. This is presented in figure 1

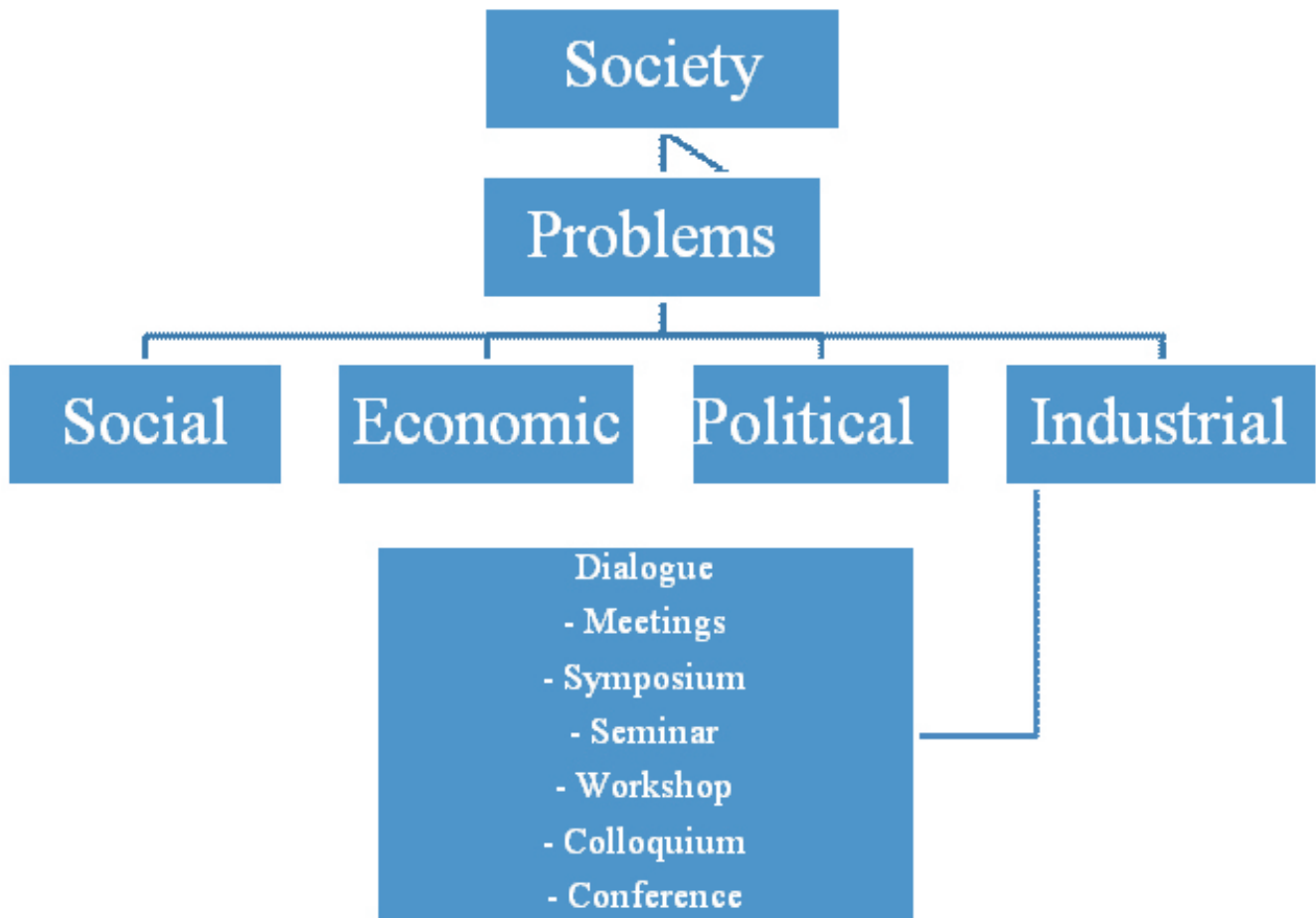


Figure 1. Cycle of settling conflicts/problems of the Society

Source: Author

There are various economic, political and industrial problems in Nigeria, for instance, the inflationary trend as reduced purchasing capacity of citizens in Nigeria, depreciation in the naira, an associated problems. In political arena there are policy summer salt, formulation of non-sustainable policies by the people at the hems of affairs, and election riggings. Inadequate raw material for the industries, inadequate power supply, unfavorable policies of the government, inadequate man-power availability, conflicts among actor in industrial sectors, marketing problems and presence of quacks in the manufacturing sectors, all this constitute problems that are faced in industry. Most of this problems can be discussed through dialogue as presented of figure 1.

Benefits of using dialogue in resolving social, economic and industrial problems

The best way of resolving social economics, political and industrial problems is recourse to dialogue. This is better than engaging in violence. One of the advantages of using dialogue is that it provides information on which all the participant will base their actions they will engaged in. Also dialogue shows what is happening now rather than what is reported. Dialogue provides the opportunity for all the participant in a polemical situation to interact and exchange ideal of information in other to resolve the problems. Furthermore, dialogue gives participants to have sense of belonging and empathy towards one and other. Through dialogue, people have the opportunity to listen to the actor involved in conflicts with a view to taken actions.

Organisation of dialogue

Dialogue involves adequate and proper planning in order to have desire result some steps have to be taken before the commencement of the dialogue and after. For instance, there is a need to examine the needs for the dialogue and the forms of dialogue to be use in order achieve the desire of the objectives. Order things to be done are:



- i. setting the need for the dialogue;
- ii. determining the participants in the dialogue;
- iii. inviting the moderators to take part in the dialogue;
- iv. getting ready the necessary material to be used for hosting the dialogue;
- v. putting in place evaluation procedure after the dialogue; and
- vi. execution of dialogue.

Conclusion

One observes that all the problems in life whether social, economic, political, or industrial can be resolved by interacting with one and other through dialogue rather than engaging in conflict. Peace and harmony can reign in atmosphere that is free of conflict. Therefore, it is suggested that every person should imbibe the culture of dialogue to solve any problem rather than engaging in war or whatever nature. Besides, it is recommended that every person should learn about the dynamics of dialogues in order to reduce to minimal level conflict that are shattering the society.

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RELATIONSHIP BETWEEN SECONDARY SCHOOL MATHEMATICS TEACHERS' VARIABLES AND STUDENTS' PERFORMANCE IN MATHEMATICS IN NIGER STATE, NIGERIA

BY

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ABSTRACT

This study was conducted to determine the Relationship between Secondary School Mathematics Teachers' Variables and Students' Performance in Mathematics in Niger State, Nigeria. The research used a correlational research design. A two-stage sampling technique was employed for selecting twelve (12) schools used for this study. The mathematics teachers' variables that this study focused on were content and pedagogical knowledge. Two corresponding research questions guided the study. A total of one hundred and forty (140) mathematics teachers formed the sample size of the study. The research instrument used for this study is a 5 points Likert scale type questionnaire which was pilot tested and data from pilot test was analyzed using SPSS 23.0 software. Cranach Alpha statistical tool was used and average reliability of 0.75 was obtained. Data was collected by administering the questionnaires to the sampled mathematics teachers by the researchers with the help of research assistants from each of the sampled schools. Mean and Standard Deviation was used to analyze the data collected. The study revealed that mathematics teachers' Pedagogical and Content Knowledge (PCK) are both teachers' variables responsible for students' performance in mathematics. It was recommended that mathematics teachers should be encouraged to go for further training or to attend conferences, seminars, workshops so as to be well skilled in terms of Pedagogical and Content Knowledge (PCK).

Key Words: Content, Knowledge, Mathematics, Pedagogy, Performance and Variable.

Introduction

Mathematics is a branch of science concerned with study of numbers, shapes, structure, quality, data, measurements and logical representation of activities. This means that, mathematics is concerned with the concept and processes of counting, calculation, measurement, logical reasoning and systematic study of shapes and motions of physical objects. In studying mathematics therefore, one is expected to seek out patterns, formulate new conjectures and establish facts by rigorous deduction from appropriately chosen axioms and definitions. From the foregoing, it has become cleared that knowledge of mathematics is of paramount importance in every aspect of human life. For instance, Wittmann (2019), asserted that, knowledge of mathematics is a prerequisite in the field of medicine, engineering, finance, natural science and social sciences to mention a few. From the above finding, it can be deduced that the concepts, theories and formulae that we learn in mathematics have wide applications in our real-life. By way of extension, we need to learn and understand the mathematical concepts and formulae to be able to effectively find solutions to various problems for human comfort. This therefore, is a clear indication that, mathematics is an essential school subject since it has its relevance in all fields of human endeavors. It is on the basis of the importance of the knowledge of mathematics that it is now one of the core and compulsory subjects at both primary and secondary school levels of education in Nigeria.

Despite the importance of Mathematics, the performance of secondary school students has not been good enough as reported by Ugwuanyi, (2014). In order to address this challenge, many research studies have been conducted and many factors have been identified to be responsible for low or poor performance of secondary school students in mathematics. For instance, Salman *et al.*, (2012), Badru (2015) and Issau *et al.*, (2017), identified major causes of students' failure in mathematics to include, poor mathematical background of the students', poor teaching approach or strategies used by teachers, poor classroom



management by teachers, incompetent handling of difficult mathematics topics by teachers and also failure on the part of the teachers to relate mathematics to real life activities during teaching. From the above findings, it is disheartening to observe that mathematics teachers' methods of teaching have been identified as one of the major factors responsible for low or poor performance of secondary school students in mathematics. These findings on teachers' factors or teachers' variables has become an issue of serious concern to all the mathematics education stakeholders. This concern resulted into the emergence of mathematics education reform.

The subject of teacher variables and students' mathematics performance has been a key issue in mathematics education reform. This is because the quality of an education system is fundamentally defined by the quality of its teachers (Fauth *et al.*, 2019). A teacher is seen as a person who facilitates learning and learning gains obtained by the students themselves (Jeno *et al.*, 2017). Therefore, teacher's duty is taking advantage of a variety of teaching strategies and techniques in order to organize learning experiences and assess whether the desired behaviour has been achieved by the students or not (Abosalem, 2016). In the same vein, the United State National Centre for Education Statistics (USNCES, 2017) measured and found that teacher factor stands as a major pivot in students' performance in sciences generally and mathematics in particular. Effective teaching and learning of mathematics therefore is a function of many and interdependent teachers' factors or variables as asserted by many research studies (Retnawati *et. al.*, 2017; Abdullahi *et Al.*, 2018 & Mohammed *et al.*, 2019). There are many mathematics teachers' variables which either positively or negatively affects students' performance. Some of the teachers' variables include pedagogical knowledge, attitude, teaching experience, classroom management style or techniques, qualification, content knowledge among others.

In this study therefore, the teachers' variables focused on are Mathematics Teachers' Pedagogical and Content Knowledge (PCK). In this context, Pedagogical Knowledge (PK) is all about teachers' effectiveness in using relevant and related instructional strategies during teaching (teachers' knowledge and competency in the use of instructional strategy). Content Knowledge on the other hand is about teachers' mastery of his or her subject of teaching (CK). Combination of the two skills is simply called Pedagogical and Content Knowledge (PCK).

Pedagogical and Content Knowledge (PCK) is referred to as the knowledge of how a teacher makes the subject comprehensible to the students as well as the teachers' deep understanding of the subject itself. This implies that, Pedagogical Content Knowledge (PCK) is concerned with teacher's understanding of the topic or concepts he or she teaches and also, his or her knowledge of instructional strategies adopted in teaching a particular topic or concept. This study therefore intends to cover teachers' pedagogical content knowledge as one of the teachers' variable. This is because it has been identified as one of the factors responsible for secondary school students' poor performance at Senior Secondary Certificate Examination (SSCE) (Abdullahi *et al.*, 2021).

Statement of the Research Problem

Mathematics is a science subject which plays a pivotal role in technological advancement of an individual as well as a nation. This implies that knowledge of Mathematics is necessary for a sound individual and national advancement. Mathematics is very important in every aspect of human life as it is always used in daily activities. For instance, knowledge of Mathematics is always needed in the areas of internet technology, banking, medicine, scientific discoveries and innovation. It is used for planning of daily, quarterly and annual activities. Mathematics therefore, is a science subject that performs an interdisciplinary function.

But, it is unfortunate to observe that despite the importance attached to Mathematics in the national policy on education (FRN, 2014), students still record poor performance in Mathematics especially at SSCE level (Gaudence *et al.*, 2013). The issue of perpetual students' poor performance in Mathematics has become so worrisome to many individuals, researchers, government, as well as many organizations. In order to address this problem, researchers have identified among other factor the teachers' variables (such as teachers' teaching experience, teachers' content as well as pedagogical knowledge, classroom management, qualification, Self-efficacy and school location) to be responsible for this ugly trend. As a step towards addressing this persistent problem of Mathematics students' poor performance therefore, this study was designed to determining the relationship between Mathematics Teachers' Variables and Mathematics Students' Performance in Niger State, Nigeria. Findings of this study would at the end be used as yard stick



to conclude whether Mathematics teachers' variables are actually responsible for Mathematics students' poor performance or not.

Objectives of the Study

This study has two objectives which are to determining the:

1. relationship between Mathematics teachers' content knowledge and students' performance in Mathematics
2. relationship between Mathematics teachers' pedagogical knowledge and students' performance in Mathematics

Research Questions

Based on the above objectives of the study, the following research questions were raised to guide the study:

1. what is the relationship between Mathematics teachers' content knowledge and students' performance in Mathematics?
2. what is the relationship between Mathematics teachers' pedagogical knowledge and students' performance in Mathematics?

Literature Review

Kattou *et al.*, (2013), investigated whether a relationship existed between mathematical ability and mathematical creativity, and examined the structure of this relationship. They validated the relationship between the two constructs by tracing groups of students that differed across their mathematical ability and investigated the relationships amongst these students' performance on a mathematical ability test and the components of mathematical creativity. Questionnaire was administered to 359 elementary school students using two tests, a mathematical ability and a mathematical creativity test. The data analysis revealed that there was a positive correlation between mathematical creativity and mathematical ability. Confirmatory factor analysis also suggested that mathematical creativity is a sub component of mathematical ability. This theory emphasized on the fact that mathematics teacher's ability to teach effectively couple with sound content knowledge will help improve mathematics students' creativity and subsequently, their performance. This study used similar instrument for data collection but the instrument was administered to Mathematics teachers who were the respondents of the study unlike the reviewed study that used students.

On teachers' pedagogical knowledge, Peng *et al.*, (2013), conducted research on whether classroom instructional approach could determine creativity of students. The findings revealed that mastery-instructional approaches help shaped individual learners' performance and positively influenced their creativity. Also, Fisanick (2010), explored the relationship between students' participation in science fair competitions and three characteristics of teacher behavior. Out of the 101 questionnaires distributed to middle school teachers at the different PJAS regional competitions, teachers completed 60 questionnaires. The sample in this study included 60 middle school science teachers from western Pennsylvania, who sponsored students in one of the PJAS regional 6,7, 8, 9, or 10 science fair competitions. The reliability of the instrument used was 0.79. The processes involved in the science fair provide students with opportunities for academic rigor, model necessary skills for the workplace, addresses gaps in science achievement, and comprises of appropriate practices for students in middle school. Middle school students will not voluntarily choose to conduct science fair projects and therefore, educators must provide students with the best possible pedagogy for achieving content and skills in science by utilizing science fair projects. Demanding that students should conduct projects for a science fair helps them gain technical knowledge of skills and gets them ready for standardized science tests. Inspiring students to take part in science fair competitions might also help them develop skills and experiences which they may not have had access to in classroom. Encouragement from their teachers can help students get over their fears about science fair projects and competitions (Fisanick, 2010). Data analyses for this study began with descriptive statistics for the demographic information survey, the Science Fair survey, and the LPST survey. Further 117 analysis included total scores representing teacher control, teacher attitude, and teacher preferences for a student learning mode.

A Pearson correlation measured the degree of relationships between teacher attitudes and teacher preferences for a particular student-learning mode and the demographic data. Finally, binary logistic



regressions were used to identify any significant variables in this study that would predict the middle school science teacher behaviour of requiring middle school students to participate in science fair competitions. From the data analyses, it was confirmed that no significant correlation existed between middle school science teachers' positive self-efficacy towards a science fair competition and teachers' preferences for a competitive, cooperative, or individualistic student-learning mode. Analysis of select data variables with binary logistic regressions suggested that middle school teachers that mandated their students to take part in science fair competitions also wanted them to participate in science fair projects (Fisanick, 2010). The present study used similar research design, instrument, method of data collection and data analysis but different subjects or respondents were used.

In a South African case study on perceptions of stakeholders on participation in Science Expos conducted by Ngcoza *et al.* (2016), 20 out of 24 schools took part in Science Fairs. Eleven of these schools were from poorly resourced communities. Participants of the study were drawn from Students, teachers and Expo organizers. Purposive sampling techniques were used to select participants as well as the schools to be used. The sample comprised of two Expo organizers, three science teachers and five students. Research instruments used were individual semi-structured interviews and two focus group interviews with the students (Ngcoza *et al.*, 2016). Data collection consisted of individual semi-structured interviews with teachers and focus group interviews with students who had participated in the Science Expo. Informal interviews were held, taped and recorded word for word with Expo coordinators. The research approach was a qualitative case study approach with an interpretive paradigm. Results of the study showed that after participating in the Science Expo, students had more motivation to studying sciences. (Ngcoza *et al.*, 2016). The present study employed similar research design involving the use of ex-post facto but mathematics teachers are the respondents instead of students that were used in the study reviewed.

Methodology

This research used a correlational research design, but data collected on the Mathematics teachers' variables using the questionnaire was used to answer the research questions raised for the study. Total population of teachers in the study area is three thousand, one hundred and thirty-five (3,135) teachers. Target population on the other hand comprises of 893 Secondary school Mathematics Teachers. A two-stage sampling technique was employed for this study. The first stage involved random sampling by balloting of two (2) Local Governments Areas each from the three Senatorial Zones of Niger State (Niger South, Niger East and Niger North representing Zones A, B and C respectively) using simple random sampling technique. This gave a total of six (6) Local Government Areas that were used for the study. Two (2) public secondary schools were purposively selected from each of the six (6) Local Government Areas selected for the study based on school location. All the mathematics teachers in all the sampled schools were used for the study. The sample size of the study is one hundred and forty (140) mathematics teachers.

The research instrument used for this study is a 5 points Likert scale type questionnaire designed by the researchers to answer the research questions. The questionnaire has responses and weighing ranging from Highly knowledgeable (HK) = 5, Mostly Knowledgeable (MK) = 4, Partially Knowledgeable (PK) = 3, Low Knowledgeable (LK) = 2 and Not Knowledgeable (NK) = 1 with decision mean of 3.00. On the other hand, questionnaire on research question two is based on a 4 - point scale with responses ranging from Completely Responsible (CR), Mostly Responsible (MR), Partially Responsible (PR) and Not Responsible (NR). The weighing is: Completely Responsible (CR) = 4, Mostly Responsible (MR) = 3, Partially Responsible (PR) = 3 and Not Responsible (NR) = 1 with decision mean of 2.50.

The questionnaire was validated by experts in the areas of Mathematics, Mathematics Education as well as Test and Measurement unit. The experts made some corrections, suggestions and observation about the instrument which were used by the researchers to produce the final copy of the instrument used for this study.

A pilot test was conducted to determine the reliability of the questionnaire (instrument) using split half method. Twenty (20) Mathematics teachers were used. Data collected were analyzed using SPSS 23 software. Cranach's alpha statistical tool was used to determine the reliability coefficient of the questionnaire (instrument). Reliability coefficient obtained for research question one (Mathematics Teachers' Content Knowledge) is 0.72. For research question two (Mathematics Teachers' Pedagogical Knowledge) is 0.78. Average of the above reliabilities coefficients was calculated and found to be 0.75 ($0.72 + 0.78 = 1.5 / 2 = 0.75$). This value is an indication that the instrument is consistent and reliable.



Data was collected by administering the questionnaires to the sampled mathematics teachers by the researchers with the help of research assistants from each of the sampled schools. Mean and Standard Deviation were the statistical tools used for data analysis

Results And Discussion

Research Question One: what is the relationship between Mathematics teachers' content knowledge and students' performance in Mathematics?

To answer research question one, mean and standard deviation were used and the result is presented in Table 1

Table 1 Mean and Standard Deviation of Mathematics Teachers' Content Knowledge

S/N	Items on Research Question One	N	MEAN(X)	SD	DECISSION
1	Ability to teach how to change common fractions to decimal fractions and percentages	140	3.78	1.67	Responsible
2	Ability to teach how to apply ratios and the unitary method to solve problems with percentages	140	3.74	1.65	„
3	Ability to teach how to solve quadratic equation Using different methods	140	3.61	1.58	„
4	Ability to teach how to construct frequency tables from a given data	140	3.66	1.61	„
5	Ability to teach how to calculate the angles of the sectors in a pie chart	140	3.68	1.62	„
6	Ability to teach how to multiply and divide direct Numbers	140	3.66	1.61	„
7	Ability to teach how to express decimal fractions in standard form	140	3.73	1.65	„
8	Ability to teach how to use factorisation to find the square roots of perfect squares	140	3.66	1.61	„
9	Ability to teach angles of elevation and delevation	140	3.61	1.58	„
10	Ability to teach how to round up numbers to a given number of significant and or decimal places	140	3.60	1.57	„
11	Ability to teach how to identify and define parallelograms, rhombuses and kites	140	3.53	1.45	„
12	Ability to teach how the various quadrilaterals relate to each other	140	3.61	1.58	„
13	Ability to teach effectively the stages involved in factorisation of binomials in Mathematics	140	3.64	1.59	„
14	Ability to teach how to represent statistical data in an ordered form including rank orders, lists and tables	140	3.55	1.46	„
15	Ability to explain and plot a graph of linear Equation effectively while teach	140	3.46	1.42	„
GRAND TOTAL			3.63	1.47	„

Table 1 shows the mean and standard deviation of mathematics teachers' content knowledge.

The table indicates that, in all the items the highest mean is 3.78 with standard deviation of 1.67 while the lowest mean (x) is 3.46 with standard deviation of 1.42. The decision mean (x) is 3.00 meaning that both the lowest and highest means are greater than the decision mean (x) of 3.00. In addition, the grand mean (x) is 3.63 with standard deviation of 1.47 which is also greater than the decision mean (x) of 3.00. This result therefore indicates that mathematics teachers' content knowledge is one of the teachers' variable that is



responsible for students' performance in mathematics.

Research Question Two: what is the relationship between Mathematics teachers' pedagogical knowledge and students' performance in Mathematics?

To answer research question two, mean (\bar{x}) and standard deviation were used and the result is presented in Table 2

Table 2 Mean and Standard Deviation of Mathematics Teachers' Pedagogical Knowledge

S/N	Items on Research Question Two	N	MEAN(X)	SD	Decision
1	Different Instructional strategies employed by Mathematics teachers during instruction	140	3.12	1.24	Responsible
2	Separate and appropriate lesson plans employed by Mathematics teachers during instruction	140	3.11	1.23	„
3	Ability to begin each lesson with a motivational jokes to encourage students towards Mathematics during instruction	140	3.04	1.15	„
4	Sequential presentation of Mathematics lesson by Mathematics teachers during instruction	140	3.10	1.23	„
5	Ability to effectively control his / her class during instruction	140	2.60	0.89	„
6	Ability to effectively link the students' prior knowledge to the new topic during instruction	140	3.09	1.22	„
7	Ability to apply different instructional strategies during instruction	140	2.89	0.95	„
8	Ability to effectively treat each student on the basis of his / her ability level during instruction	140	3.01	1.02	„
9	Ability to effectively use improvised instructional material during instruction	140	2.95	0.98	„
10	Ability to effectively break down complex mathematical concepts into achievable steps during instruction	140	2.90	0.95	„
11	Method of teaching students by understanding the underlying logical rules and not by memorization	140	2.96	0.98	„
12	Employ instructional strategy that helps my students to solve Mathematics problems involving diagrams as quickly as possible	140	3.00	1.02	„
13	Employ instructional strategy that helps many students to solve Mathematics problems involving the application of formula as quickly as possible	140	3.14	1.25	„
14	Encourages their students to be able to represent every Mathematics problem using graph	140	2.96	0.98	„
15	Encourages their students to be confident in solving Mathematical problems	140	2.92	0.96	„
GRAND TOTAL			2.79	1.07	

Table 2. shows the mean (\bar{x}) and standard deviation of mathematics teachers' pedagogical knowledge. The table indicates that, in all the items the highest mean (\bar{x}) is 3.12 with standard deviation of 1.24 while the lowest mean (\bar{x}) is 2.60 with standard deviation of 0.89. The decision mean (\bar{x}) is 2.50 meaning that both the lowest and highest means are greater than the decision mean (\bar{x}) of 2.50. In addition, the grand mean (\bar{x}) is 2.79 with standard deviation of 1.07 which is also greater than the decision mean (\bar{x}) of



2.50. This result therefore indicates that mathematics teachers' pedagogical knowledge is one of the teachers' variables that is responsible for students' performance in mathematics.

Findings And Discussion

The study revealed that:

1. Mathematics teachers' content knowledge is one of the teachers' variable that is responsible for students' performance in mathematics
2. Mathematics teachers' pedagogical knowledge is also one of the teachers' variables that is responsible for students' performance in mathematics.

Research question one indicates that mathematics teachers' content knowledge is one of the teachers' variable that is responsible for students' performance in mathematics. This finding is in line with the findings of Kattou *et al.* (2013) who investigated whether a relationship existed between mathematical ability and mathematical creativity and reported that, mathematics teachers' ability to teach effectively couple with sound content knowledge helps improve mathematics students' creativity and subsequently, their performance. In addition, research question two also indicates that mathematics teachers' pedagogical knowledge is one of the teachers' variables that is responsible for students' performance in mathematics. This finding is in line with finding of Peng *et al.* (2013) who reported that mastery-instructional approaches help shaped individual learners' performance and positively influenced their creativity. Above findings therefore indicates that, there is a relationship between mathematics teachers' variables and students' performance in mathematics.

Recommendations

From the findings, of this study, it is hereby recommended that mathematics teachers should be encouraged to go for further training or to attend conferences, seminars, workshops so as to be well skilled in terms of Pedagogical and Content Knowledge (PCK).

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COGNITIVE ABILITIES AS CORRELATES OF LEARNING ATTITUDE AND STUDY HABIT AMONG SECONDARY SCHOOL STUDENTS IN ONDO STATE, NIGERIA.

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ABSTRACT

There have been persistent worries expressed by stakeholders of education in Nigeria over the problem of poor study habit among secondary school students. This study therefore examined cognitive abilities as correlates of learning attitude and study habit among secondary school students in Ondo State, Nigeria. Two (3) research questions were raised and Two (2) hypotheses were formulated to guide the study. This research study employed the descriptive research design of the survey type. The population comprised all senior public secondary school students and in Ondo State, Nigeria. Multi-stage and stratified random sampling techniques were used to select 300 sample consisted of 300 students. Two validated instruments were used. The reliability coefficients of the two instruments were 0.83 and 0.70 respectively. Data collected were analysed using both descriptive and inferential statistics. All the hypotheses formulated were tested at 0.05 level of significance. The findings indicated that, there was significant relationship between cognitive ability and study habit of secondary school students ($r = 0.458$, $P < 0.05$). Also, there was a significant relationship between learning attitude and study habit of secondary school students ($r = 0.462$, $P < 0.05$). Based on the findings, it was concluded that cognitive ability was a major factor influencing study habit of secondary school students. Despite the students' good learning attitude, moderately high cognitive ability, the study habit of students was poor. It was therefore recommended that there should be synergy among parents and stakeholders in education to help students develop good and consistent study habit so as to help stabilise the level of comprehension among secondary school students in Ondo State. Also, government should be more committed to the provision of needed facilities for teaching and learning in secondary schools, Ondo State, Nigeria.

Keywords: Cognitive abilities, learning attitudes, study habit.

Introduction

One of the major ways by which poverty and backwardness in all spheres of life could be reduced to the barest minimum in the society is through education. The growth of any society could depend largely on the standard of its educational system. Education is the total process of human learning by which knowledge is imparted, faculties trained and skills developed. Secondary schools do not only occupy a strategic place in the educational system in Nigeria, it is also the intermediary school between the primary and the tertiary levels of education. According to Asikhai (2010), education at secondary school level is expected to be the bedrock and the foundation towards higher knowledge in the university. Secondary school education if well managed, it may be used as an instrument to achieve a more growing economic, social, political, technological, scientific and cultural development in a country, it may also as well be an investment. Secondary school students are expected to be aware of what their syllabus spells out for them, in other to be able to spread out subject topics through a systematic learning strategy to adequately prepare for examinations.

The outbreak of COVID -19 pandemic across the globe appears to have pushed education to the next level of digital learning. It becomes painful, when secondary school student refuses to study hard and drop-out from school without achieving required result, which could be measured through their academic achievements. Study habit of secondary school students may determine their academic attainment as observed by the researcher. Poor study habit may be related to mass failure of many secondary school students. Some factors tend to be associated with study habit of many secondary school students, they include cognitive abilities and learning attitude.



There seems to be a positive relationship between cognitive ability and study habit among secondary school students. This shows that high cognitive ability and effective study habit may result to good academic attainment. Cognitive ability, may refer to general intelligence which is important for human adaptation and survival. This involves the capacity to “reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience beyond memorization or imitation (Okebukola, 2004). Cognitive ability supports the ability to comprehend situations figure out what is needed and plan a course of action. The importance of cognitive ability can never be over emphasised in all human endeavours, especially in study or learning process. According to Okebukola (2004) cognitive ability involves skills the brain use to think, learn, reason, understand, remember and pay attention.

Cognitive ability is the use of mental activities that help an individual to comprehensively understand the idea or content of a given study material and with which should positively influence a good study habit enabling learners to retain content of study material to the point of use. Kelli (2009) posits that for students to succeed in their studies, they must be able to appropriately assimilate course content, digest it, reflect on it and be able to articulate the information in written and/or oral form.

Learning attitude could be described as disposition of students towards their academic activities. It may be positive or negative learning attitude, which may directly affect students' level of involvement in learning activities.

Learning attitude tends to be an act and manner of students toward learning, the learning attitude of a student may influence students' study habit either positively or negatively, the belief of a student towards education should influence his learning attitude, positive learning attitudes may be a driving force behind the good study habits. According to Adedeji (2008), Attitude refers to a complex mental state involving beliefs, feelings, values and disposition. He further explained that the disposition of student toward learning will greatly determine the value the learner places on learning and also influence the attitude of the learner.

The learning attitude of secondary school students in Ondo state and in Nigeria at large seems to have brought about mixed reactions of both positive and negative dispositions toward learning. Some students' learning attitude may depict interest, value, endurance, persistence, motivation and encouragement towards learning. This category of students may be active in learning activities both in school and at home. On the other hand some other students may display laziness, lethargy, discouragement, impatience, low-motivation and burdensomeness towards learning activities. Such students may be coming late to school, skip classes, refuse to take notes and may even abscond from school. The two sides of both positive and negative dispositions mention above may without doubt generate high and low level of participation of students toward learning. Many factors may have under-pined the drive of the dispositions afore mentioned, environmental factors may also be a player. On the positive side, the academic success of many prominent people in the society from all fields of studies, people whose academic profile has set the pace for others to follow and are in key leadership positions in the society by the virtue of their prowess in their fields of studies and also the availability of scholarship opportunities home and abroad may be a motivating factor and source of attractiveness for some students toward learning. On the other hand unemployment that has eaten deep into the system of our country may be a major discouraging factor of many students towards learning, observing that many of the popular rich musician in Nigeria had drop out of school and they seems to be the major role models of some students, this may spur some other students to drop out to be come online fraudstars, and the quick money making syndrome (Yahoo-yahoo) making money without going through the rigor of learning by burning the mid-night candle. Accoding to Olowolabi (2014), they do not consider reading as an important aspect of live, students prefer to watch movies and home videos. He further explained that the introduction of internet technology has not helped matters. Instead of reading, most students spend hours browsing at the cyber café, some even work overnight at the café. Any students with this disposition may not see the need for learning and may thus show a discouraging attitude in the class room and toward learning generally.

Study habits is the behaviour displayed when preparing for tests or learning academic material. *It denotes an appropriate pattern of study strategies tested over time by a learner and found to be result oriented. Looking at the numerous subject topics embedded in the secondary school syllabus one would think that secondary school students should have a good study habit, but the learning attitude of many seems to place a question mark on their study habit* Mark and Howard (2009) made a remark that the most challenge common to the success of students is mostly lack of effective or positive study habit. They further maintain that if students can be motivated to develop good study habit with self-discipline, they might have good chances of performing incredibly well in their academic pursuit. Many of the secondary school



students don't seem to be interested in learning until the date of an examination is fixed, then, they may want to show some level of seriousness because of the value their parents or guardian place on good performance, this may be the bases for their attraction to learning or probably they want to just feel among amidst their equal. They may start to memorise some *things within short a period on topics that ought to have been spread out over time through strategic and systematic study*. How can this be an effective way of study? Evans (2015), spelt out proper study habit as: Regular class attendance, Notes taking during teaching, concentration during study, studying with aim of comprehension not memorizing, preparing a personal time table, following a time table, having proper rest periods, daily revision of note taking, having regular place of study, proper use of school library.

Adolescents often struggle with meeting academic demands, despite having access to resources and opportunities. This situation can be attributed to poor study habits, low cognitive abilities, and negative learning attitudes. The problem is further compounded by a lack of understanding of how each of these factors affects the studying behavior of adolescents. Therefore, this study aims to examine the extent to which cognitive abilities and learning attitudes relate to the study habits of adolescents.

The aim of this study is to investigate the relationship between cognitive abilities, learning attitudes and study habits among secondary school students. The study will examine whether cognitive abilities and learning attitudes have significant relationship between learning attitude and study habit of secondary school students. The study also aims to identify the factors that contribute to students' study habits to help develop appropriate interventions. The findings from this study will provide valuable information on the development of effective teaching and learning strategies to enhance academic performance and success among adolescent students.

The main objectives of this study will be to:

1. Investigate the study habit of secondary schools students in Ondo State.
2. Examine the relationships between cognitive ability and study habit of secondary schools students
3. Find out the attitude of students towards learning in Ondo State.

Research Questions

The study seeks to answer the following questions:

1. What is the study habit of secondary schools students in the study area?
2. What are the attitude of students towards learning in Ondo State?
3. What are the students' cognitive ability in the study area?

The following hypotheses were formulated to guide the study.

Research Hypotheses

1. There is no significant relationship between cognitive ability and study habit of secondary school students in Ondo State.
2. There is no significant relationship between learning attitude and study habit of secondary schools students in Ondo State.

This research study employed the descriptive research design of survey type. The survey research was adopted in order to capture a large number of pupils amongst the population of secondary school students. This adapted research design was suitable for this study because it involves collection of information from a sample of Secondary Schools Students on their perception on "Student Study Habit Inventory (SSHI)". In all Ondo State Senatorial districts.

The population comprised of all Secondary School Students in three Senatorial districts of Ondo State. The study adopted a sample of three hundred (300) SSS 1 students from six public senior secondary schools in three senatorial district of Ondo State, which are; Ondo north, Ondo central and Ondo south senatorial districts that wrote the 2018/2019 Junior Secondary School Promotional Examination.

Multi-stage family was used to select 300 student participants for this study, students between the ages of 10 and 22 years old. The students were randomly selected from government-owned secondary schools in six local government area of the state.

The instruments used for data collection for the study were Cognitive ability, Learning Attitude,



Study Habit Scale (CFQLASSHSI).

Cognitive Failure Questionnaire (CFQ), Learning Attitude Scale, Study Habit **Inventory**(CFQLASSHSI) consisted 42 item altogether with two sections (A and B) Section A is demographical information of the student respondents such as Name of School, LGA, Gender, etc. section B consisted of 15 items on Study Habit, 15 items on Student Learning Attitude and 12 items on Cognitive Ability. Study Habit **Inventory** (SHI) was adapted, it was developed by Bakare (1977),it consisted 45 items, out of which 15 items were used with little adjustment. Learning Attitude Scale (LAS) was self-designed instrument by the researcher with 15 items. Cognitive Failure Questionnaire (CFQ) developed by Broad bent and adapted by the research, it consisted 25 items of which 12 items were selected from the aspect of forgetfulness, distractibility, error of perception and memory.

The instruments were on two rating scales, a 5-point scale with response option 1(Never); 2(Rarely); 3(Sometimes); 4 (Frequently); 5(Always) and a 4-point scale ranged from: SD- Strongly Disagree (1); D- Disagree (2); A-Agree (3); SA-Strongly Agree (4) were used.

The items in the questionnaire were carefully reviewed by experts in the related field for necessary corrections and modification, which established the face and content validity of the instruments.

Test-retest method was used and a reliability coefficient of 0.83 and 0.70 were obtained which deemed the instruments reliable for use.

The researcher requested for permission from the school authority of the selected senior secondary schools and administered the instruments. The researcher introduced the instrument to the students and after necessary familiarity was established. The data were collected using the checklist. The responses were collated for data analysis.

The responses from the participants were analyzed using descriptive statistics of mean and standard deviation. All the formulated hypotheses were tested using inferential statistics subjected to PPMC, ANOVA, and regression as appropriates using SPSS version 22.0. The entire hypothesis were tested at 0.01 and 0.05 alpha levels.

Research Question 1: What is the study habit of secondary schools students in Ondo State secondary schools?

In other to find out the study habit of secondary school students in Ondo State, a descriptive statistics of frequency, percentage, mean and standard deviation was used in carrying out the analysis of students' study habit as shown in table 5. A standard mean score of 3.0 is chosen, being the average mean of five scale rating, ranging from 1(Never), 2(Rarely), 3(Sometimes), 4 (Frequently), 5(Always). A mean average greater than 3.0 implies a good study habit, while, a mean average less than 3.0 implies poor study habit.

**Table 1: Descriptive table Of Study Habit of Secondary Schools Students in Ondo State**

S/N	Student Study Habit	1	2	3	4	5	N	\bar{X}	SD	Remark
1	When my assigned homework is too long or hard, I study the easier parts of the lesson.	80 26.7%	55 18.3%	77 25.7%	25 8.3%	63 21.0%	300	2.49	.821	Poor
2	I begin my assignment as soon as the teacher gives them to me to avoid pile up	60 20.0%	39 13.0%	116 38.7%	28 9.3%	57 19.0%	300	2.87	.863	Poor
3	I complete and submit my assignment on time	42 14.0%	45 15.0%	37 12.3%	50 16.3%	126 42.0%	300	3.29	.911	Good
4	I find that having many other things to do causes me to get behind in my school work	112 37.3%	63 21.0%	68 22.7%	28 9.3%	29 9.7%	300	2.05	.743	Poor
5	I study at least three hours each day after school	35 11.7%	63 21.0%	96 32.0%	50 16.7%	56 18.7%	300	3.05	.952	Good
6	I spend too much time on some subject and not enough on others	59 19.7%	67 22.3%	107 35.7%	36 12.0%	31 10.3%	300	2.89	.873	Poor



7	In taking notes, I tend to write down things which later turn out to be unimportant	76 25.3%	51 17.0%	103 34.3%	34 11.3%	36 12.0%	300	3.5 0	.951	Good
8	I have trouble picking out the important point in the material studied	69 23.0%	53 17.7%	95 31.7%	43 14.3%	40 13.3%	300	2.6 7	.830	Poor
9	I miss important points while copying notes in the class during teaching	119 39.7%	44 14.7%	86 28.7%	22 7.3%	29 9.7%	300	2.3 0	.726	Poor
10	When I sit down to study; I find myself too tired, bored or sleepy to study	103 34.3%	32 10.7%	103 34.3%	40 13.3%	22 7.3%	300	2.1 0	.740	Poor
11	I prefer to study my lessons alone rather than with others	45 15.0%	40 13.3%	128 42.7%	13 4.3%	74 24.7%	300	3.2 0	.882	Good
12	At the beginning of study period, I plan my work so that I will make the best use of my time	46 15.3%	38 12.7%	85 28.3%	34 11.3%	97 32.3%	300	2.5 2	.742	Poor



13	I find that day dreaming distracts my attention from my lesson while studying	75 25.0%	46 15.3%	100 33.3%	38 12.7%	41 13.7%	300	2.49	.730	Poor
14	I find it hard to keep my mind on what I am studying for a long time	84 28.0%	30 10.0%	97 32.3%	31 10.3%	58 19.3%	300	3.00	.972	Good
15	Environmental interruption distracts me while studying	86 28.7%	52 17.3%	78 26.0%	51 17.0%	33 11.0%	300	2.90	.821	Poor
Average Mean = 2.75, Std.D = .86										

Source: *Field survey, 2021*

The result in table 5 shows that students study habit in secondary schools in Ondo State is poor as evident in an average mean of 2.75 which is below the standard mean of 3.0. However, item number 3, 5, 7, 11, and 14 shows good study habit. While item number 1, 2, 4, 6, 8, 9, 10, 12, 13 and 15 shows poor study habit. The result also shows that students rarely study the easier part of their assignment despite being given a hard assignment (2.49), sometimes find it hard to keep what they have been studying for long in mind (3.00), frequently preferred to study alone (3.20), they frequently put unimportant things in their mind while taking note (3.50), however, they frequently study for at least three hours each day after school (3.05), they do not find out sometimes that having many other things to do causes them to get behind in their school work (2.05), sometimes do not plan their work in the beginning of their study period to make best use of their time (2.52), frequently have trouble in picking out the important thing in the studied material (2.67), sometimes miss important points while copying down notes in the class during teaching (2.30), frequently find their self too tired, bored and sleepy while seated down to study (2.10), sometimes get disturbed by environment interruption while studying (2.90). Although, they sometimes spend too much time on one subject than another which causes undistributed study time (2.89). Conclusively, 5 Items shows good study habit while, 10 items shows poor study habit.

Research Question 2: What are the attitude of students towards learning in Ondo State?

In other to find out the attitude of secondary school students towards learning in Ondo State, a descriptive statistics frequency, percentage, mean and standard deviation was used in carrying out the analysis of student learning attitude. A standard mean score of 2.50 was chosen, being the average mean of four linkert scale ranging from Strongly Agree(4), Agree(3), Disagree(2), Strongly Disagree(1). A mean average greater than 2.50 implies a positive attitude towards learning, while, a mean average less than 2.50 implies negative attitude towards learning. Analyzed samples consisted of 300 respondents. Descriptive analysis table is shown in table 2;

**Table 2: Descriptive Table Showing Students Attitude towards Learning in Secondary Schools in Ondo State.**

S/N	Student Learning Attitude	SA	A	D	SD	N	\bar{X}	SD	Remark
1	I like being in school	75 25.0%	174 58.0%	10 3.3%	41 13.7%	300	3.56	.984	Positive
2	I wish I do not have to study	46 15.3%	48 16.0%	112 37.3%	94 31.3%	300	2.30	.854	Negative
3	I study to fulfilled my parent expectation	68 22.7%	149 49.7%	40 13.3%	43 14.3%	300	3.20	.921	Positive
4	I study because I love to learn	80 26.7%	168% 56.0%	32 10.7%	20 6.7%	300	3.42	.975	Positive
5	This days society only look at richness and not academic success	46 15.3%	113 37.7%	56 18.7%	85 28.3%	300	3.87	.993	Positive
6	What we learn in school is useless	46 15.3%	29 9.7%	93 31.0%	132 44.0%	300	2.42	.862	Negative
7	I often have a sense of success without the effort of schooling	42 14.0%	75 25.0%	83 27.7%	100 33.3%	300	2.35	.815	Negative
8	I persist when my homework becomes boring or challenging	49 16.3%	93 31.0%	93 31.0%	65 21.7%	300	2.50	.915	Positive
9	I always feel assignment is too burdensome to complete	55 18.3%	76 25.3%	85 28.3%	84 28.0%	300	2.12	.803	Negative



10	It does not matter if I write notes during class or not	45 15.0%	76 25.3%	74 24.7%	105 35.0%	300	2.18	.817	Negative
11	Education is good for my future employment	93 31.0%	134 44.7%	42 14.0%	31 10.3%	300	2.89	.932	Positive
12	I proactively study without being told at home	68 22.7%	131 43.7%	59 19.7%	42 14.0%	300	2.85	.929	Positive
13	I skip school when I think necessary	52 17.3%	61 20.3%	88 29.3%	99 33.0%	300	2.35	.854	Negative
14	There are many ways to succeed without college education.	46 15.3%	89 29.7%	97 32.3%	68 22.7%	300	3.51	.953	Positive
15	I like to learn more even when I failed a subject against my expectation	76 25.3%	152 50.7%	26 8.7%	46 15.3%	300	3.30	.942	Positive
Average Mean = 2.85, Std.D = .90									

Source: *Field survey, 2021*

The result in table 2 shows that students' attitude towards learning in secondary schools in Ondo State secondary schools is positive as evident in an average mean of 2.85 which is above the standard mean of 2.50. However, item number 1, 3, 4, 5, 8, 11, 12, 14 and 15 shows students' positive attitude towards learning. While item number 2, 6, 7, 9, 10 and 13 shows students' negative attitude towards learning. The result also shows that likes to learn even when they failed a subject against their expectation (3.30), study proactively at home without being told (2.85), persist even when their homework becomes boring (2.50), study to fulfil their parents expectation (3.20), study because they love learning (3.42), like being in school because they love to study (3.56). However, they disagreed that assignment is too burdensome for them to complete (2.12), it does matter if they take note in class or not (2.18), do not skip school even when they think it is necessary (2.35). Although, they agreed Education is good for their future employment (2.89), without college Education, there are many ways to succeed (3.51), and that present day society only look at richness and not academic success. Conclusively, 9 Items shows students' positive attitude towards learning while, 6 items shows students' negative attitude towards learning.

Research Question 3: What are students' cognitive ability in the study area?

In other to find out the cognitive ability of students in the study area, a descriptive statistics of frequency, percentage, mean and standard deviation was used in carrying out the analysis. The cognitive ability (skill) in this study area is limited to memory and reasoning only. A standard mean score of 3.0 is chosen, being the average mean of five scale rating, ranging from 1(Never), 2(Rarely), 3(Sometimes), 4 (Frequently), 5(Always). A mean average greater than 3.0 implies a high cognitive ability, while, a mean



average less than 3.0 implies low cognitive ability. The descriptive analysis table is shown below.

Table 3: Descriptive table of students' Cognitive Ability in Secondary Schools in Ondo State.

S/N	Cognitive Ability	1	2	3	4	5	N	\bar{X}	SD	Remark
1.	When I read something I find myself to read again and again to remember?	66 22.0%	21 7.0%	52 17.3%	28 9.3%	133 44.3%	300	3.59	.951	High
2.	While studying I use to re member vividly later what I studied?	28 9.3%	44 14.7%	95 31.7%	50 16.7%	83 27.7%	300	3.87	.973	High
3.	I fail to listen well to my teacher during class?	174 58.0%	28 9.3%	55 18.3%	24 8.0%	19 6.3%	300	2.29	.811	Low
4.	I find that I have not satisfactorily follow my study plan?	70 23.3%	54 18.0%	104 34.7%	35 11.7%	37 12.3%	300	3.15	.793	High
5.	I find it very difficult to understand examination questions	105 35.0%	49 16.3%	80 26.7%	42 14.0%	24 8.0%	300	3.05	.928	High
6.	when my teacher teaches in the class room I don't really understand	21 7.0%	39 13.0%	71 23.7%	53 17.7%	116 38.8%	300	3.19	.953	High
7.	I find my attention quite satisfactory during study	37 12.3%	54 18.0%	66 22.0%	57 19.0%	86 28.7%	300	3.50	.921	High



8.	I can't think of anything to study after school hour	93 31.0%	53 17.7%	66 22.0%	46 16.0%	40 13.3%	300	2.67	.730	Low
9.	After each study I use to find time for critical thinking on what I studied what you studied?	65 21.7%	46 15.3%	87 29.0%	43 14.3%	59 19.7%	300	3.30	.826	High
10.	I find the level of my comprehension unsatisfactory during and after study	50 16.7%	70 23.3%	109 36.3%	32 10.7%	39 13.0%	300	2.10	.740	Low
11.	My level of thinking always prove supportive during and after study	40 13.3%	54 18.0%	75 25.0%	47 15.7%	84 28.0%	300	3.20	.882	High
12.	I find it difficult to effectively read during study	93 31.0%	40 13.3%	69 23.1%	40 13.3%	58 19.3%	300	2.52	.742	Low
Average Mean = 3.04, Std.D = .85										

Source: Field survey, 2021

The result in table 3 shows that students cognitive ability in secondary schools in Ondo State is moderately high as evident in an average mean of 3.04 which is above the standard mean of 3.0. However, item number 1, 2, 4, 5, 6, 7, 9 and 11 shows high cognitive ability of the students. While, item number 3, 8, 10 and 12 shows low cognitive ability of the students. The result also shows that students' level of thinking always prove supportive during and after study (3.20), sometimes find time for critical thinking on what they have studied (3.30), find their attention quite satisfactory during study (3.50), sometimes do not satisfactorily follow their study plan (3.15), they get to remember vividly everything while studying (3.87). However, they find it difficult to effectively read during study (2.52), sometimes find it difficult to understand examination questions (3.05), failed to listen to their teachers during class (2.29) and sometimes can't think of anything to study after school hours (2.67). Conclusively, 8 Items shows high cognitive ability while, 4 items shows low cognitive ability.



Hypothesis 1: There is no significant relationship between cognitive ability and study habit of secondary school students in Ondo State.

Table 4: Correlation table showing the significant relationship between cognitive ability and study habit of secondary school students.

	N	Mean	SD	Df	r _{cal}	r _{tab}
Cognitive Ability	300	35.3967	7.0188	299	0.458	0.1946
Student Habit		42.3567	8.8349			
TOTAL	300					

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 indicated that the calculated t-value is 0.458 (r_{cal} =0.458) and table value is 0.1946 (r_{tab}=0.1946). Since the calculated value is greater than the table value; therefore, this hypothesis is rejected. This implies that, there is significant relationship between cognitive ability and study habit of secondary school students.

Hypothesis 2: There is no significant relationship between learning attitude and study habit of secondary schools students in Ondo State.

Table 5: Correlation Table Showing the Significant Relationship Between Learning Attitude and Study Habit of Secondary Schools Students.

	N	Mean	SD	Df	r _{cal}	r _{tab}
Learning	300	37.6233	2.022025	299	0.318	0.1946
AttitudeStudent Habit		42.3567	8.83495			
TOTAL	300					

** . Correlation is significant at the 0.01 level (2-tailed).

Field survey, 2021

The Correlation result on hypothesis 2 showed the result at 0.01 alpha level of significance, where (P<0.05), calculated value (r_{cal} = 0.318) and the table value (r_{tab} = 0.1946). This Hypothesis however affirmed that the calculated value is greater than the table value the correlation significant of 0.01 levels. Hence, the hypothesis is hereby rejected. This implies that, there is significant relationship between learning attitude and study habit of secondary school students.

Based on the analysis of the collected data the following were observed that:

- There is significant relationship between cognitive ability and study habit of secondary school students.
- There is significant relationship between learning attitude and study habit of secondary school students.
- Students of senior secondary schools in Ondo State have positive attitude towards learning.
- That there is low cognitive ability among Students of senior secondary schools in Ondo State.

From the findings, it could be established from the study that despite the fact that most of the students understand and have the knowledge of the importance of education they still find it difficult to study, due to several factors such as distractions in school and home environment, attitude and personal interest of the students among others which as a result enhance their moderately high cognitive ability and poor study habit. It was also deduced from the findings that the students have positive attitude towards learning but it appears that there is no enough motivational strategies couple with peer influence which hindered



consistency in the study area which also facilitated moderately high cognitive ability of the students and definitely resulted to poor study habit.

Findings shows that majority of the students are interested in coming to school regularly which most have been impelled by their positive attitude towards learning, but the habit of the students in study area defeated the purpose of their good learning attitude.

The findings also put forward that in order to find a lasting solution to the problem of poor study habit in secondary schools, there is need, for the Federal and the state government, Ministry of education, teachers and parents to know their roles in helping the secondary school students of Ondo state to leverage a balance in the study habit of study are. Based on the findings it is affirmed that the role of the parents in ensuring that their wards finds importance in education is very significant as it revealed that the parents have grip over their children as to encourage them to have interest in learning.

Findings also revealed that the roles of school administrators in ensuring strict adherence in monitoring of students as regards their personal study habit should be of a great importance. While the roles of the State Ministry of Education is to implementation processes of Curriculum that is students' study habit friendly in the Secondary School level and to create monitoring team from the Ministry to enforce the good teaching and learning environment, availability of policy formulation, provision of approachable good study habit friendly curriculum and syllabus with favourable time table.

In conclusion, all of the above are very essential especially for the implementation of good study habit and higher cognitive ability among students in secondary schools in Ondo State. Therefore, everyone in the world in general and in Ondo state in particular should embrace all the possible ways of encouraging good study habit and high cognitive ability among secondary schools in this New Millennium. To this end, it becomes undisputable that good study habit, high cognitive ability and good student teacher teaching and learning relationship has to be well handled in Ondo State and in Nigeria at large. The implementation of the policies binding on good study habit, high cognitive ability and good student, teacher teaching and learning relationship must be effected at all levels of education especially at the secondary school level so as to attain a high level of all round national development in Nigeria.

Recommendations

Based on the findings, the following recommendations are made:

1. Schools and teachers should identify students with moderate cognitive abilities but poor study habits and provide them with extra support to develop effective study habits.
2. Teachers should conduct interventions, such as teaching study skills, to help students develop better study habits, irrespective of their cognitive abilities and learning attitudes.
3. Parents can support their children's study habits at home by creating a conducive environment for studying, monitoring their children's progress, and encouraging them to develop good study habits.
4. More studies should be conducted to examine other variables, such as motivation and self-regulation that may affect study habits among adolescent students.

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VOCATIONAL AND TECHNICAL EDUCATION STUDENTS' INTERNET-BASED KNOWLEDGE FOR EFFECTIVE PARTICIPATION IN SOCIO-ECONOMIC RECOVERY IN OYO STATE

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Abstract

The study focused on the perceived internet-based knowledge of vocational and technical education students for effective participation in socio-economic recovery in Oyo State. To achieve the objectives of the study, two research questions and hypotheses guided the study. The study adopted a survey research design. One thousand and five hundred students from Colleges of Education in Oyo state formed the population of the study. Proportionate sampling technique was adopted to select 320 respondents. Self-structured questionnaire was developed to collect data for the study. The instrument was face-validated by three experts and reliability of 0.72 was obtained. The questionnaire was administered to 320 respondents. Mean and standard deviation were used to answer research questions while t-test statistics was used to test the hypotheses. Finding revealed that knowledge of vocational students on internet is moderate low especially on how internet contributes to the socio-economic recovery of the state. Based on the findings of the study, the following recommendations were made among others; the government through its agencies should design an adequate procedures for proper integration of the ICT into the school curriculum right from the secondary schools to the higher institutions with the policies that will emphasize the teaching and learning of internet for economic use and the school management should develop manpower in line of ICT through sponsorship to the conference and workshop within and outside the country.

Keywords: Internet, Vocational Students, Participation, Socio-Economic, Recovery,

Introduction

Internet is an important component of technology that pervades every aspects of human endeavor. The word internet is a global computer network providing a variety of information and communication facilities, consisting of [interconnected](#) networks using standardized communication protocols. According to John (2023) internet is an autonomous, public, cooperative medium that is routinely accessed by millions of users to collect information, conduct transactions, or communicate with each other. Internet has been the most useful technology of the modern times which helps not only in our daily lives, but also our personal and professional lives developments. Wikipedia, (2023) sees internet as the global system of interconnected [computer networks](#) that uses the [Internet protocol suite](#) to communicate between networks and devices. Babatunde and Raymond (2019) expressed that the internet is fundamentally designed to be open and global hence making the facility to serve as the hub for technological innovation and economic growth and development.

The use of internet has many advantages; for instance E-mail is now an essential communication tools in business; presence of huge amount of information available on the internet for just about every subject, ranging from government law and services, trade fairs and conferences, market information, new ideas and technical support; many services are provided on the internet like net banking, job searching, purchasing tickets, hotel reservations, guidance services on array of topics engulfing every aspect of life and online shopping through e-commerce. James and Charles (2011) corroborated that Internet accounted for 21 percent of the GDP growth in mature economies over the past 5 years and large enterprises and national



economies have reaped major benefits from this technological revolution, individual consumers and small, upstart entrepreneurs have been some of the greatest beneficiaries from the Internet's empowering influence.

World Development Report (2016) indicated that internet contribute to economic recovery in three major interrelated ways. One is that the internet can help overcome information problems. In some instances, a mutually beneficial transaction might not take place because the two parties simply had no way to find each other or acquire enough information to confidently proceed with the transaction; in such cases, the transaction costs are essentially infinitely high. The emergence of e-commerce platforms has made it much easier for small producers to find customers, and even for individuals who cannot use traditional marketing tools like advertising or trade shows. A web shop has attracted customers from all over the world. The internet, by vastly lowering search and information costs, creates these markets. This has many benefits, but the most important, arguably, is that it fosters inclusion in new and existing markets, in social interaction, or in government service delivery systems. With these numerous advantages accrued to the manifestations of internet, Infact, it creates a good experience of economic recovery for individuals and businesses in the Country.

Every educational programme has its aims and objectives, vocational and technical education programme is a type of education that provides students with required knowledge, skills, competences and values to be self-reliance and also to contribute maximally to the economic development of their immediate environment. According to UNESCO and the International Labor Organization (ILO)(2016), vocational and technical education refers to the aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life. Federal Republic of Nigeria (2009) highlighted the objectives of vocational and technical education at the tertiary level as to give training and impart the necessary skills for the production of technicians, technologists and other skilled personnel who shall be enterprising and self-reliant and to provide the technical knowledge and skills necessary for agricultural, industrial, commercial and economic development of Nigeria. This could be inferred that in today's technological development it is imperative for the vocational and technical students to develop high level of expertise in the use of and application of internet knowledge most especially in the area of social networking, online service and business promotion in other to play a good role in any aspect of economy and at large contribute significantly to the socio-economic recovery of the nation.

According to Kenton (2023) social networking refers to using internet-based social media sites to stay connected with customers. Social networking can have a social purpose, a business purpose, or both through sites like Facebook, Twitter, Instagram, and Pinterest. It is a significant opportunity for marketers seeking to engage customers. Social networking involves the development and maintenance of personal and business relationships using technology. This is done through the use of social networking sites, such as [Facebook, Instagram, and Twitter](#). These sites allow people and corporations to connect with one another so they can develop relationships and share information, ideas, and messages.

Social networking is an online platform that people uses to develop a social relationship with others with similar thoughts and personal interest, backgrounds, real-time connections or career activities. There are several social media networking sites for instant messaging, sharing or posting views, and much more. Trillions of people over the world connect through social networking to share views on a personal level. But most people use social networking to interact with their family and friends to gain knowledge or for entertainment purposes. Business people use social media to plan the target audience and execute it via attractive advertisements that pop out when related to a search. It also helps them trace the audience's ideas by throwing multiple options to the customer, getting feedback from the client ends, and promoting it in a reachable way by elevating their business to the next level. The specialist also uses social media to enhance the knowledge in the related fields and develop a network with like-mind people in a similar industry and support each other in their career growth. It is termed as group-centered, which is described as websites that simplify the building of complex systems to share the various types of content webpage. It offers an interaction space to persist out the interaction of the person. The interactions via computer networks support and build new social tie-ups. It is popularly emerging as an online community.

The success of the social networking site can be visible in their supremacy in civilization. LinkedIn



is a career-based social networking site where professionals share their opening related to a product. The company publishes its achievements on the site to get the world's attention. Some unique features in social networking are that they share a mutual connection with people and help us to contact our old missed friends. The social network includes online shopping where people do not even connect to a person sitting at home; he can get his things without stepping out. The product will be delivered to his doorstep. It can be noticed that the product you search for in Google, will be popped out in your Facebook newsfeed, Instagram and Twitter advertisement. Other than this, it will throw a notification that this product has some special offer codes. Everything you search on google or discuss with your friends in some chatting app is tracked and traced by social networking, which allows all the businesses and corporates to develop their enterprise by fooling the people around (Priya, 2023).

An online service is simply a business that is operated, managed or delivers services primarily over the Internet. Luan and Lin (2003) defined online service as an interactive content-centered and internet based customer service, driven by customers and integrated with related organizational support processes and technologies with the goal of strengthening the customer service-provider relationship. Meng, (2002) viewed online service as any service or functionalities that can be accessed by a business or a consumer programmatically over the internet by using the standard service specification and a standard communication protocol.

Mary (2023) described online business as a process of conducting online business on the web, internet, extranet or a combination thereof. These customer-internet and [management-focused business processes](#) include buying and selling goods and services, servicing customers, processing payments, managing production and supply chains, collaborating with business partners, sharing information, running automated employee services and recruiting employees. E-business is similar to [e-commerce](#) but encompasses much more than online purchasing transactions. Functions and services range from the development of intranets and extranets to the provision of e-services over the internet by [application service providers](#). Enterprises conduct e-business to buy parts and supplies from other companies, collaborate on sales promotions and conduct joint research (Ben, 2023).

Electronic communication systems, such as email, video conferencing and [online collaboration platforms](#) increase productivity by decreasing delays between inquiries and responses whether the communication is among employees, employees and external business partners, or employees and customers. Decision-making is faster, resulting in more agile companies that are responsive to stakeholder needs and market demands. Electronic communication has also eliminated, in some cases, employee business travel and supported more open, collaborative cultures so any employee can contribute ideas. Realizing the importance of technology, Oyo State government partnered with the IpNX to provide free high speed broadband internet connection to two public secondary schools in the State in a bid to improve access to technology for students and teachers. This will increase access to the internet and provide more opportunities for students and teachers to find the best practices, create new solutions, connect and inspire each other, all towards the achievement of better learning outcomes. The empowerment of students in this way is pivotal to the digital transformation and socio-economic development of Nigeria (Folashade, 2020). Discussion as regards to the internet is rising considering this new technology (internet) creates an edge in terms of expediting business transactions activities more efficiently than the previous traditional business practices and thus contributes to the growth of the economy of a country. Interestingly, several previous empirical pieces of evidence reveal that internet improves economic growth of a country (Choi & Yi, 2009; Jin & Jin, 2014; Salahuddin & Gow, 2016; Sassi & Goaid, 2013). The relationship between internet usage and economic development has been studied in several countries such as South Africa, MENA countries and high-income countries (Salahuddin & Gow, 2016). Although the researchers utilise different method (Autoregressive Distributed Lag, Generalised Method of Moments and correlation coefficient) and sample countries yet, the studies report similar finding with internet user positively related to economic growth and discovery. Hence, this new emerging technology inspired researcher to assess vocational education students' internet-based knowledge for effective participation in socio-economic recovery in Oyo state.

Statement of the Problem

Technology is an essential factor affecting economic development in the world. It improves



efficiency and productivity, promotes competition and innovation, and provides opportunities for employment generation to millions of people worldwide. This shows that proper adoption of technology would assist in the economic development considering its benefits. The use of internet has been appreciated due to the unprecedented economic achievements in the business environment. With this reality, government at all in the Nigeria, most especially in Oyo state government invested huge amount of money on the technology in both secondary schools and higher institutions in the state with the main aim of preparing students with the internet based knowledge that could be utilized to participate effectively in the economic activities in the state.

It is believed that acquisition of internet knowledge such as social networking and online business services will create many online job opportunities for the teeming youths thereby enhancing the standard of living of people in the state. Vocational and technical students are expected to be well-acquitted with the use of internet. This will afford them the opportunity to be self-reliance and contribute maximally to the Oyo state socio-economic development. However, it is observed that majority of the youths in the state are still finding it difficult to be economically engaged despite the numerous opportunities accrued to the use of internet. Hence, this is prompt the researcher assessment of internet-based knowledge of vocational and technical education students for effective participation in socio-economic recovery in Oyo state.

Purpose of the Study

The main purpose of the study was to assess vocational and technical education students' internet-based knowledge for socio-economic recovery in Oyo state. Specifically; the study sought to:

1. Assess the vocational and technical students' socio-networking knowledge for socio-economic recovery in Oyo state.
2. Determine the vocational and technical students' online service knowledge for socio-economic recovery in Oyo state.

Research Questions

Two research questions were raised to guide the study.

1. To what extent do vocational and technical students possess socio-networking knowledge for socio-economic recovery in Oyo state?
2. To what extent do vocational and technical students possess online service knowledge for socio-economic recovery in Oyo state?

Research Hypotheses

Two null hypotheses were formulated for the study and tested at 0.05 level of significance.

- H_{01} : There is no significant difference in mean responses of male and female respondents on the extent vocational and technical student possess socio-networking knowledge for socio-economic recovery in Oyo state?
- H_{02} : There is no significant difference in the mean responses of male and female respondents on the extent vocational and technical students possess online service knowledge for socio-economic recovery in Oyo state?

Methodology

A descriptive survey design was used to carry out this study. The population for the study comprised 1, 320 Vocational and Technical Education in Emmanuel Alayande College of Education, Oyo State. Proportional sampling technique was adopted to select the sample of 320 respondents for the study. A-15 items structured questionnaire developed by the researchers: Internet Based Knowledge and Economic Recovery Questionnaire (IBKERQ) validated by three (3) experts was used for data collection. The instrument was designed on four (4) ratings scale of Very Highly Extent (VHE), Highly Extent (HE), Moderately Extent (ME), and Low Extent (LE) with the assigned numerical values of 4, 3, 2 and 1 respectively. The pilot study conducted yielded a reliability coefficient of .75 using Cronbach Alpha which was high enough for the instrument to be considered reliable. A total of 320 copies of instrument were distributed to the respondents with the help of two (2) research assistants and the same number was retrieved which represent 100% rate of returned. Descriptive statistics of mean and standard deviation were used to answer the research questions while t-test statistics was used to test the hypotheses. Therefore, the class real



limit of 3.50-4.00 (Very High Extent), 2.50-3.49 (High Extent), Moderately Extent (1.50-2.49) and Low Extent (0.01-1.49) was used as a decision rule.

Results

Research Question 1: To what extent do vocational and technical students possess socio-networking knowledge for socio-economic recovery in Oyo state?

Table 1: Mean Ratings and Standard Deviation on the Extent Vocational and Technical Students Possess Socio-Networking Knowledge for Socio-Economic Recovery in Oyo state?

S/N	I have knowledge of social networking to:	Mean	SD	Remark
1.	get connected with the customers	2.49	0.76	M E
2.	display products online for the customers	1.32	0.79	L E
3.	create good relationship with my business partners	2.40	0.78	M E
4.	share business ideas with business colleagues	2.01	0.61	L E
5.	contact my target market	1.50	0.80	L E
6.	promote the brand of my products	2.37	0.75	L E
7.	get feedback from my customers	2.20	0.72	L E
8.	explain the features of my products to the customers	1.21	0.67	L E
Weighted Average		1.94	0.74	L E

Source: Field Survey 2023

Result in table 1 showed the extent vocational and technical students utilized social networking for socio-economic recovery with mean ratings ranging from 1.21 to 2.48 and weighted average of 1.94. Table 1 indicated that social networking knowledge of the vocational and technical students in Oyo State is low. Based on the findings, the standard deviations of all items were ranged from 0.67 to 0.80 meaning that the opinion of the respondents is closely related.

Research Question 2: To what extent do vocational and technical students possess online service knowledge for socio-economic recovery in Oyo state?

Table 2: Mean Ratings and Standard Deviation of the Respondents on the extent do vocational and technical students possess online service knowledge for socio-economic recovery in Oyo state?

S/N	I have online service to perform the following business functions:	Mean	SD	Remark
1.	Buying and selling goods to the customers	2.40	0.77	M E
2.	Servicing customers	1.62	0.69	L E
3.	Processing payment	1.70	0.71	L E
4.	Managing products	2.07	0.77	L E
5.	Collaborating with the business partners	1.56	0.87	L E
6.	Sharing business information with business colleagues	1.42	0.75	L E
7.	Running automated employee services	1.20	0.76	L E
Weighted Average		1.71	0.76	L E

Source: Field work 2023

The result in table 2 above revealed that the respondents' knowledge is low considering online service for effective participation in the socio-economic recovery in Oyo state with a mean score ranged from 1.56-2.40 but indicated low knowledge on the item 6 and 7 with the mean value of 1.20-1.40 . The standard deviation ranged from 0.69 to 0.78 indicating closeness in their responses.



Research Hypotheses

H₀₁: There is no significant difference in mean responses of male and female respondents on the extent vocational and technical student possess socio-networking knowledge for socio-economic recovery in Oyo state?

Table 3: Summary of t-test of the difference in the mean ratings of male and female Respondents on the extent vocational and technical student possess socio-networking knowledge for socio-economic recovery in Oyo state?

Group	N	Mean	SD	df	P-value	Decision
Male	120	2.43	1.45	318	0.08	NS
Female	200	3.19	0.64			

P>0.05

Source: Field Survey, 2023

The analysis of data in Table 3 reveals that there are 120 male and 200 female students in the study. The table shows the mean and standard deviation of male and female responses ($\bar{x}=1.45$, SD=0.64) and ($\bar{x}=3.19$, SD=0.64). There was no significant difference in the mean responses of male and female respondents on the extent vocational and technical students possess social-networking knowledge for socio-economic recovery in Oyo state ($t_{318}=P>0.05$). This, therefore, means that hypothesis one was accepted. This implies that male and female respondents do not differ in their responses regarding the possession of social networking for socio-economic recovery in Oyo State.

H₀₂: There is no significant difference in the mean responses of male and female respondents on the extent vocational and technical students possess online service knowledge for socio-economic recovery in Oyo state?

Table 4: Summary of t-test of the difference in the mean ratings of male and female Respondents on the extent vocational and technical student possess online service knowledge for socio-economic recovery in Oyo state?

Group	N	Mean	SD	df	P-value	Decision
Male	120	2.70	0.77	318	1.05	NS
Female	200	3.01	0.97			

P>0.05

Source: Field Survey, 2023

The analysis of data in Table 4 reveals that there are 120 male and 200 female students in the study. The table shows the mean and standard deviation of male and female responses ($\bar{x}=2.70$, SD=0.77) and ($\bar{x}=3.01$, SD=0.97). There was no significant difference in the mean responses of male and female respondents on the extent vocational and technical student possess online service knowledge for socio-economic recovery in Oyo state ($t_{318}=P>0.05$). This, therefore, means that hypothesis two was accepted. This implies that male and female respondents do not differ in their responses regarding the possession of online service for socio-economic recovery in Oyo State.

Discussion of Findings

Result in table 1 showed that the respondents social networking knowledge is low to participate effectively in the socio-economic recovery of the state most especially on the following economic activities



such as: getting connected with the customers, displaying products online for the customers, creating good relationship with business partners, sharing business ideas with business colleagues, contacting target market, promote the brand of my products, getting feedback from customers and explaining the features of products to the customers. The findings of James and Charles (2011) showed that those utilizing Web technologies grew more than twice as fast as those with a minimal Web presence. These Web-knowledgeable enterprises also created more than twice as many jobs as companies that are not heavy Internet users. They have increasingly engaged customers, incorporating their feedback into product innovations and streamlining their research pipelines. Abdinur and Ahmed (2022) in their findings indicated that Internet influences economic growth as it alters how people work and organizes the flow of information and ideas. Internet penetration has spearheaded the modernization of the economy and rejuvenated traditional business activities. The Internet empowered businesses to transform the virtual value chain at all levels and business types. The Internet also shifted how a product is designed, produced, and distributed as well as the wholesale change and the reach of the consumer. The Internet provides small and medium enterprises with a dynamic supply chain and global workforce.

The result of the table 2 showed that the respondents possess online service for effective participation in the socio-economic recovery. Mary (2023) described online service as the conduct of online business processes on the web, internet, extranet or a combination thereof. These customer- internal and [management-focused business processes](#) include buying and selling goods and services, servicing customers, processing payments, managing production and supply chains, collaborating with business partners, sharing information, running automated employee services and recruiting employees. Palvia et al. (2018) ICTs have been found to have a transformative effect on socio-economic development. They concluded that ICTs lowered the cost of doing business by facilitating access to both information and consumers through the internet, thereby reducing the need for a physical store. Access to ICTs was also instrumental in facilitating communication and connectivity that enabled the firms to sustain a long-term relationship with customers. Moreover, they found that ICTs empowered citizens by enabling access to free online educational material and news and by enhancing the “voice” of the people through online forums. The result of the table 3 indicated that there is there was no significant difference in the mean responses of male and female respondents on the extent vocational and technical students' possess social-networking knowledge for socio-economic recovery in Oyo state.

The result of the table 3 indicated that there is there was no significant difference in the mean responses of male and female respondents on the extent vocational and technical students' possess online service knowledge for socio-economic recovery in Oyo stat

Conclusion

Based on the findings of the study, it is concluded that the extent social-networking and online services knowledge of vocational and technical students in Oyo state is low to participate effectively in the socio-economic recovery in the state. As many studies have actualized the significant of internet as a catalyst to the economic development, this shows that meaningful development may not be achieved in Oyo state without proper and adequate knowledge for effective utilization of internet in modern day business activities. However, every attempt must be made to give much awareness to the students in the state on how to use internet for profitable outfit.

Recommendations

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

1. The government through its agencies should design an adequate procedure for proper integration of the ICT into the school curriculum right from the secondary schools to the higher institutions with the policies that will emphasize the teaching and learning of internet for economic use.
2. The school management should develop manpower in line of ICT through sponsorship to the conference and workshop within and outside the country.
3. The teachers and lecturers should engage themselves on the acquisition of internet based knowledge and how they can utilize the knowledge to assist the students to be able to contribute maximally to the economic recovery of the using internet economically.
4. The students should tailor their useful time towards learning how to internet services to conduct profitable ventures. This will make them to be more responsible in their immediate society.



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FAMILY SUPPORT ON WELLBEING OF PEOPLE WITH DISABILITIES IN ONDO STATE, NIGERIA

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Abstract

Every member of each family is expected to care for people with disabilities within the family. The care should come in different ways in order to see that life is bearable for people with disabilities. The purpose of this study was to examine the extent of the support rendered by family members in order to sustain people with disabilities in terms of hygienic environment; formal and non-formal education; and necessary medication. The population of the study comprised teaching and non-teaching staff with disabilities, and students with virtual and physical disabilities in selected schools meant for people with disabilities. Sample size of 150 was selected randomly using multistage sampling procedure. The research design for the study was descriptive survey. Questionnaire was used to obtain data from the respondents. Frequencies, percentages, means, and standard deviations were used to analyse the data. The results indicated that family support is important in terms of hygiene, education, and medications. Based on the findings, it was recommended that families having people with disabilities should support them in all ramifications in order to promote their standard of living, thus making them to be useful for themselves, their family members, and their country by contributing to their national development

Keywords: Family support, disabilities, social workers

Introduction

A person is referred to be disabled when he or she is unable to perform at least one of the normal activities in life. When someone is experiencing difficulty in hearing, communicating, moving, seeing, learning, eating, and we have some with intellectual and psychosocial disabilities. Boyen (2022) highlighted some of the different types of disabilities: these are sensory, learning disability, physical disfigurement and neurological. World Health Organisation (2022) also reiterated large numbers of children in need of special attention had been a result of violence and injuries sustained during unrest in their countries. Holden, Clark and Abualghaib (2019) opined various factors contributed to having increase in cases of disability in Nigeria. Apart from people born with deformity in their bodies, there are cases of outbreak of chronic and infectious diseases, examples are polio, stroke leading to inability to walk, small pox which could affect being able to see, hear or talk. There might be issues of attacks on communities, schools, and homes; fire outbreak, homes and road accidents resulting in people losing parts of their body. Recognising areas of impairment of individual, family members are expected to come to the assistance of people with special needs in order to make living convenient for them.

Some family members of people with special needs tend to hide them at homes with the feelings that it is shameful, and members of the society should not know they are nurturing children, husbands and wives with disabilities (Odongo, 2018). The Government at different levels, Non- Governmental Organisations and individual philanthropist have been trying their bests in different ways to assist such families and individuals with special needs in the society. United Nations (2023) was of the view that persons with disabilities are supposed to be given equal rights with other members of the society. These rights embrace equal legal treatment; right to freedom of speech; employment; formal and non-formal education; appointment to political posts and being able to vote; leadership; marriage recreation; possessing properties; good health services ; accommodation; feeding; entry into banks, and owning bank account. As all these things are necessary for people with special needs, the support of their family members are also important for them to be achieved.



Thompson (2019) observed family members are often left alone to cater for their disabled people, especially in the old cultural setting among Nigerians. Griffin (2023) highlighted some tips to follow when dealing with or intend to support people with disabilities: Do not address them with their disability; ask before offering assistance to them; make yourself available, and donate money for their wellbeing; enlighten others on the need to support people with disabilities. It is also necessary to know the terms to use when communicating directly with them; they are to be addressed politely and correct those who address them wrongly; appropriate questions are to be asked when there are needs for questioning. It is also necessary to make one available for them in one's area of specialisation; assist them when they feel like moving around, and interact with them to make their lives interesting.

The major support of disabled people should be from their homes. Parents should be the major or first discovery of disability in children, especially those born with disabilities. When parents discovered their children are not developing normally as expected, some parents still neglect them. Parents are the pillars of children with disabilities, immediate attention is necessary. The way parents perceive them will help a lot on the way children with disabilities will perceive themselves. The researcher observed family members or parents play a lot on the discovery and solution to their problems. For example, not being able to talk or cry very well could be observed by mothers or family members at a child's early stage through the position of the tongue when a child is crying. If taken to hospital early, the position of a child's tongue will be corrected. Cases of challenge of later life can be solved while a child is very small.

Onalu and Nwafor (2021) stated the psychological conditions of people with disabilities are improved when they are given necessary care. Family support helps in coping with different challenges individual with disabilities are facing. People with situations challenging their lives can end up in serious or complicated issues if they are not enjoying or experiencing family, friends, community or group support. Morales (2022) observed that with family support for people with disability, some positive impacts will be experienced: transparency and relationships within family will be improved, each member will be made responsible, and stress will be reduced on a particular person resulting in healthy relationships. Thus, there is the need for division of responsibilities and delegation of roles when caring for disabled person. European Economic and Social Committee (2022) concluded that as family members are particular about good health services for the disabled, they should also care for their own health conditions, because someone caring for a person with special needs also needs special treatment.

Since disabled people are always being neglected by their family members in different ways, the study therefore, aimed at examining the extent of family support on hygienic condition, education and medication for people with disabilities in selected schools for the virtually impaired and the physically challenged in Ondo State, Nigeria.

Review of Related Literature

Some scholars have discussed different ways by which families can support people with disabilities. Roberts (2021) advised that parents having children with disabilities have to plan and make lives convenient for them. Onalu and Nwafor (2021) indicated depression is common among people with physical disabilities. This could be the result of various challenges they always face like exclusion socially, and isolation; mental ill health could be added when a person with disability is isolated, but with the assistance he enjoys from friends and family support, depression will be reduced. People with disabilities will happily associate themselves with people and happenings in the society, they will be involved in decision making and participate in national development; also, visiting them occasionally makes them feel appreciated; their life span will also be prolonged. The World Bank (2019) indicated many people with special needs are living in poor conditions with little opportunity for schooling, poor health condition, and low employment opportunities. The World Bank is making sure that each of them is reached for good condition of sustainable lives and making them socially and economically involved in the society.

Onalu et al (2021) observed in a family or society where poverty is rampant especially where the affected person or members of the family do not cherish or conscious of hygienic environment, people with disability always feel the impact more than any other set of people, as they are not likely to receive adequate health care, and can easily be infected with diseases. Purisitasari, Allenidekania and Augustini (2020) claimed families, schools and communities are to train people with special needs the skills on how to care for



themselves individually on personal hygiene without relying on another person. For example, a family can support their disabled person in form of information and equipment for personal hygiene like being able to go to toilet, brush their teeth, functions of health care also take the form of providing shelter, clothing and food.

United Nations Education Scientific Commission (2022) indicated that in developing countries, a good number of children with disabilities of about ninety per cent are not attending schools, in which Nigeria is not left out with at least 95.5 per cent being affected (Onyedinefa). Family support for people with disabilities can be exhibited in form of passion and commitment when one start a foundation to pay their school fees, this will do a lot in helping them develop their talents through formal and non-formal education (Nduta et al (2020). Emerson, Feer, For, and Sander (2012) claimed that the general development and performance in education of children with disability is the reflection of the participation of parents in their children. Attaining formal education is a stepping stone for people with disabilities as they love to express their challenges and grievances to the government, they cherish electing or selecting their leaders to be part of government in power, this serves as motivation to be involved in formal education.

Family Support Programme (fsp.unc.edu) opined in order to make life convenient for people with disabilities, family members are to get information about appropriate places where disabled people can receive adequate and relevant health care services. Nduta et al (2020) further stated rehabilitation and health care centres can be constructed to make health care and therapy accessible to them, support can be in form of partnering with Non-Governmental Organisations to take part in different projects to assist people with disabilities. Morales (2020) stated the efforts and care of family members influence the emotions and personality of disabled people, especially on basic activities of daily living like administering and managing of their medications, keeping them in company, taking their bath, and assisting during meals.

In support of the view of the United Nations (2023), they observed that support for disabled people are expected to be expressed in areas of good medication; feeding; neat environment; housing, education, encouragement, and hope for the best in future.

Haruna (2017) indicated that social workers in Nigeria always come to the assistance of people with disability to reduce the rate at which these disabled people depend on their family members and the society in general. Amadasun (2020) observed where the activities of social workers are not pronounced, then the disabled people there will suffer.

Research Questions

The research questions that guided the study were as follows:

1. To what extent does family provision of hygienic environment help in sustaining people with disabilities?
2. To what extent does family provision of formal education help in sustaining people with disabilities?
3. To what extent does family support on medication help in sustaining people with disabilities?

Methodology

Descriptive survey design was used for the study. The descriptive research studies are designed to obtain information on the current status of phenomena. The research was directed towards determining the nature of a situation, as it existed at the time of the study. The justification for the use of the design was that it would provide detailed assessment of family support for people with disabilities in selected schools in Ondo State.

The population of the study was made up of people with disabilities in two of the schools meant for disabled people in Ondo State. The two schools are Ondo State School for the Physically Impaired, Okeagbe, along Ogbagi Road, Ikare Akoko North East, and Ondo State School for the Visually Impaired, Owo, Ikare Road, Owo. The estimated population was 150.

The researcher used sample size of 150 selected randomly using multistage sampling procedure. The first stage was simple random by balloting to select two schools for disabled people in Ondo State. The second stage was cluster to select all students and members of staff living with disability in the two schools selected in stage one. Respondents were all the people with physical disabilities comprising 80 respondents from the school in Ikare, and 70 respondents with visual disability in their school in Owo.



The research instrument for the study was a questionnaire. There were four items for each of the areas of family support for people with disabilities, namely: hygiene, education, and medication. The questionnaire was content- validated by two experts in the field of guidance and counselling, and adult education at Adekunle Ajasin University, Akungba Akoko. The items on each family support for people with disabilities were structured along a four point scale ranging from 4 (Very True of Me), 3 (True of Me), 2 (Rarely True of Me), 1 (Never True of Me).

Data collection was done by taking permission from the headmasters in the two schools used for the study. The purpose of the study was explained to the respondents to prevent them from fearing, as far as giving information about their family support at sustaining them as people with disability was concerned. With the guidance and cooperation of their trained teachers for special people, the respondents answered and returned all the questionnaires. The return rate was hundred per cent.

The data was analysed using descriptive statistical tools, namely: frequencies, percentages, means and standard deviations were used to answer all the research questions.

Results

Research Question 1: To what extent has the family support helped in sustaining the hygienic condition of people with disability?

Table 1: Extent to which family support the hygienic condition of people with disability/special needs

S\N	Items	Very True of Me	True of Me	Rarely True of Me	Never True of Me	\bar{X}
13	My cloth are always clean.	87	50	8	5	3.46
14	I live in a clean environment.	90	47	9	3	3.76
15	I have access to daily grooming.	64	52	30	4	3.17
16	I have a good sanitation practice.	79	45	19	7	3.30
Grand Mean= 3.4						

Source: fieldwork 2023

The findings from the table indicate that there is a moderate level of family support in maintaining the hygienic condition of people with disabilities. Respondents reported relatively high agreement in terms of clean clothes and living in a clean environment, while access to daily grooming and good sanitation practices received moderate agreement. These results highlight the importance of ongoing family support in promoting hygienic conditions for individuals with disabilities.

Research Question 2: How has family support on education helped in sustaining people with disability?

Table 2 - How the family has helped in sustaining people with disability in their education



S\N	Items	Very True of Me	True of Me	Rarely True of Me	Never True of Me	Σ
17	Interested in sending me out formal education.	78	43	12	17	3.21
18	Made effort to support me through non formal education.	57	64	18	11	3.11
19	Ready to sponsor me to any level of education.	69	66	11	4	3.33
20	Assist and support with my school homework and assignment.	56	57	9	28	2.94
Grand Mean= 3.1						

Source: fieldwork 2023

The findings from the table indicates that education plays a significant role in sustaining people with disabilities. Participants generally expressed a positive perception, with moderate agreement, regarding the importance of formal education, support through non-formal education, and willingness to sponsor education at any level. However, there was a slight disagreement concerning the level of assistance and support received for school homework and assignments. These findings underscore the significance of inclusive and supportive educational opportunities for individuals with disabilities, while also highlighting the need for improvement in providing comprehensive support in certain areas.

Research Question 3: How has family support helped in sustaining people with disability through medication?

Table 3

How medication is sustaining people with disability

S\N	Items	Very True of Me	True of Me	Rarely True of Me	Never True of Me	Σ
21	My family provide necessary aid for my convenience.	63	43	23	21	2.98
22	I go for regular treatment for better living.	54	39	28	29	2.78
23	I have access to health insurance.	58	28	21	43	2.67
24	I have personal doctor.	43	32	19	56	2.41
Grand Mean= 2.7						

Source: fieldwork 2023

The findings from the table indicates that medication plays a significant role in sustaining individuals with disabilities. The respondents reported receiving necessary aid from their families, seeking regular treatment, and having varying levels of access to health insurance. While the presence of a personal doctor was reported to a lesser extent, it remains an important factor in providing comprehensive healthcare. Overall, the findings highlight the importance of medication, along with family support, regular treatment, and access to health insurance, in supporting the well-being of people with disabilities.



Discussion of Findings:

Finding to research question 1 showed that their families supported by ensuring their clothes and environment were always clean. The findings were in support of Purisitasari et al (2020) and Onal et al (2021) that if people with special needs do not receive adequate health care, they can easily be infected with diseases, and families and communities needs to train people with disabilities the skills of how to care for themselves individually on personal hygiene.

Findings under research question 2 revealed that family support for people with disability on education was moderate in some areas. This finding is in line with the views of Emerson et al (2021) that the general development and performance in education of children with disability is the reflection of the participation of parents in their education.

Findings to research question 3 showed that their families supported them with good medication to satisfy their health care services. This finding is in line with Nduta et al (2020) and Morales (2020) that family members can receive information about how people with disabilities can get adequate and relevant health care services, also family members are to help them administer and manage their medications.

Conclusion

The results indicated that people with disabilities were able to maintain hygienic condition which was moderate; supporting their educational system was also moderate, and their families supported them at receiving necessary medications.

Implications for Social Work

From the findings and conclusion, social workers need to pay more attention to caring for people with disabilities by encouraging their parents to send them out for formal education. At the same time, parents to support and provide for them in every area of their needs.

Recommendations

Based on the discussions above, the following recommendations are put forward:

- Parents to support children with disabilities going to school on their homework and assignments.
- People with disabilities should be provided with personal doctors by their family members for a healthy living.
- Social workers to be available for assistance in different ways where people with disabilities could be found.

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MATHEMATICS EDUCATION: TOOL FOR SECURITY AND NATIONAL DEVELOPMENT

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Abstract

The world today due to the technological advancement is filled with insecurity which poses threats of different forms to human lives and properties. Security is needed to assuage these threats to lives and properties and maintain safety, survival and national development. This paper examined mathematics education as tool for security and national development. It begins with the meaning of security, three levels of maintaining security and four elements comprising effective security system. Further, it expatiated mathematical skills useful in solving problems and understanding the world. Finally, it examined four aspects of mathematics application in ensuring national security and development. It is therefore recommended amongst others that there should be regular review of mathematics curricular at all levels of education to incorporate more feasible mathematical skills and techniques useful in adapting to the advancements in the world and tackling insecurity in Nigeria.

Keywords: Mathematics education, mathematical models, mathematical techniques, security, national development.

Introduction

The rising technological advancement witnessed in the modern world today facilitated by developments such as globalization and the spread of networked and higher-connected technologies has been accompanied by different security and safety challenges such as cyber crime, terrorism and environmental disasters posing threats to human lives and properties across the globe, the educational institutions not left out (Berg & Prins, 2023; Narasimman, 2023). Understanding the need for security measures and procedures is essential to every organisation in order to protect sensitive information, recognise and respond to potential threats, and prevent future attacks that may pose harm to the organisation and its stakeholders (Hse, 2023).

Security is simply safety and protection from threats to survival, daily life and dignity of human beings (Degaut, 2016). However, security has been defined variously from different perspectives at different times. Meerts (2018) defined security as “a state of being free from many kinds of dangers and threats (e.g. war, unemployment, illness, or accidents)”. Afolabi (2016) asserts that security entails the presence of peace, safety, gladness, human and physical resources, protection or absence of threats to human dignity resulting in the development and progress of the human society. In sum, it is a process of avoiding threats to life and properties of precious values.

Cyber security challenges have developed in a bid to respond to this new world, which is also witnessed in the educational institutions. There is therefore the need to develop the means of tackling these security challenges to ensure safer cyberspace and society at large. Narasimman (2023) defined cyber security as the process of protecting the networks, computers, servers, mobile devices, electronic systems and data against threats and malicious intrusions otherwise referred to as information security. Viruses, worms, spyware, Trojans and ransom ware are the common methods used by attackers to control computers and networks. This process is essential in curbing major challenges such as theft and destruction of different data types comprising sensitive information. Industries using networks are being affected by cyber security threats such as the healthcare, finance, manufacturing and government.

One of the challenges faced in higher institutions of learning amongst others is insecurity (Jacob, Jegede & Musa, 2022). Aside the attack from terrorist groups such as Boko-Haram, herdsmen militia, and so on; insecurity has been experienced in the area of attack to data and information. The introduction of advanced learning gadgets, the internet and globalization contribute to making students very smart in learning, insecurity is thus a major challenge in Nigeria and institutions of higher learning have not been spared. Kpee and Osiobe (2014) asserts that all aspects of the society including public institutions such as schools, churches, mosques and gatherings of people for different purposes are prone to insecurity.



This article therefore discusses the following: the three levels of maintaining security; four elements comprising effective security system; mathematical skills useful in solving problems; and four roles of mathematics in different areas of security.

Three Levels of Maintaining Security

Buzan (1991, as cited in Afolabi, 2016) identified three levels of maintaining security namely individual, national and international, regarded as human security, national and international security respectively.

The human security is concerned with the safety and protection of human lives, properties and dignity. This is categorized into seven dimensions reflecting the key components of human development namely: economic security implying assured basic income which is the protection from threats to basic income such as poverty, unemployment, indebtedness and lack of income; food security implying physical and economic access to food, that is, the protection from threats to food availability and accessibility; health security implying access to medical treatment and improved health conditions, that is, the protection from threats to human life such as diseases, unhealthy lifestyle and death; environmental security which is living in a healthy physical environment, implying the protection from threats against the natural environment such as natural disasters and pollutions (air, water and land) endangering human survival; personal security referring to protection of individual lives from every form of physical violence and threats to self such as suicide, drug abuse, etc.; community security entailing the protection from threats due to violence from any of the social groups such as family, community, ethnic group, etc.; and political security which is the protection from threats against the fundamental human rights of the citizens (Afolabi, 2016; Hussein, Gnisci, & Wanjiru, 2004).

National security on the other hand, is described as the protection of a nation's interest against internal threats and challenges while the international security entails the safety of the vulnerable from different parts of the world and protection of nations/ states from deprivations of different kinds such as social, economic and political deprivations (Afolabi, 2016).

Four Elements which form Effective Security System

Forsyth (2019) emphasized four elements composing an effective security system namely protection, detection, verification and reaction applicable to all organisations. Protection entails the act of creating barrier to defend against threat, intrusion or trespass on properties. Detection is a form of security (such as, technology) which alerts one of any form of intrusion or threats. Verification is a security mechanism that verifies the exact level of threat posed while reaction is the response to any form of intrusion events detected and verified.

Mathematics Skills Useful in Solving Problems

Mathematics has been viewed as an effective tool in tackling security problems and solving crimes via various skills it develops in students having effect on national development (Charles-Ogan, 2014). In other words, mathematics has the potency of improving a nation economically, socially and politically in order to enhance the standard of living of her citizens. Mathematics is crucial in solving Nigeria's security challenges as well as ensuring her prosperity (Odeniyi, 2023). Sa'adatu (2014) opines that mathematics education is a major instrument in tackling security challenges being faced in Nigeria because of the skills it develops in tackling real life problems. It has to do with reasoning and not memorisation and develops both analytical and problem solving skills which aids the development of the following abilities: the ability to think creatively, critically and logically; the ability to structure and organise; ability to process information; enjoyment of intellectual challenges; the skills to solve problems useful in investigating and understanding the world (Klerlein & Hervey, 2023).

Roles of Mathematics in different Areas of Security

Aspects of mathematics application in ensuring national security include:

Cryptography (Data Security)

Cryptography is the process of keeping data confidential and maintaining its integrity via the use of codes to secure communications among computer systems, devices and applications (RSI Security, 2022). It is a tool used in securing sensitive data transmission over the networks and Information Technology (IT)

infrastructure making it difficult for attackers to read the information even when compromised. Thus, it protects sensitive information from threats of unauthorised access without the key used in encrypting and decrypting data. Two primary methods of cryptography in securing data are: encryption and decryption (RSI Security, 2022).

Data encryption is the process of using mathematical algorithm in converting plaintext (ordinary or clear text) into ciphertext (difficult to decipher form) which can only be accessed using cryptographic key. This secures data transmission and minimizes the risks of data being compromised. Decryption is the process of reversing encryption using a cryptographic key matching the encryption algorithm. Algorithm is a mathematical concept containing series of mathematical operations used for cryptographic key generation, digital signing, verification to protect data privacy, web browsing on the internet and confidential communications such as credit card transactions and emails (Richards, 2021).

Cryptography is useful in securing sensitive emails containing sensitive data; encrypting databases containing sensitive information; protecting sensitive company data; and encrypting HTTPS (Hypertext Transfer Protocol Secure) to secure websites URL (Uniform Resource Locator) using the HTTPS protocol to safeguard the confidentiality, integrity, and authenticity of transactions on the internet.

Two types of cryptography used for cyber security applications are symmetric and asymmetric cryptography. Symmetric cryptography otherwise called secret key cryptography permits the sharing of same cryptographic key used in encrypting and decrypting data between users. It is usually used in securing local storage of sensitive data on drives or servers. On the other hand, asymmetric cryptography is used in securing the transmission of sensitive data across public networks having two keys otherwise called public key cryptography. One key is private key used in encrypting or decrypting data while the other is a public key supplied to anyone being communicated with by either of the users (RSI, 2022).

Hence, mathematics via algorithms helps in securing the transmission of sensitive data over the internet networks between or among users.

Financial Security

Ahmad and Sabri (2014) defined financial security as the state of having constant income or other resources (assets, wealth) for sustaining the present and future standard of living. Securing one's financial well-being is an essential necessity in life. Mathematics is useful in making financial plan (to ensure expenses don't exceed income) and resolving financial issues in order to secure the financial future of both individuals and organisation (U.S. Securities and Exchange Commission, 2023).

Financial security utilises mathematical techniques, formulas, equations and models in identifying, managing and resolving financial problems and threats in the financial field. Mathematical models are essential in studying specific financial problems, analyzing and solving financial problems in a scientific and convenient way based on the functional relationship between variables. Mathematics is also useful in risk management in analyzing market data, finding patterns in data and predicting risks. Aspects of mathematical concepts applicable include probability theory, calculus and so on.

Hence, mathematics helps in building and managing financial resources, protecting against major economic shocks and building wealth.

Food Security

Food security has been defined as “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (The World Bank, 2023). It implies the protection from threats against the production, availability, accessibility and consumption of good and healthy food.

Three components of food security include: the availability of sufficient quantities of appropriate food, accessibility to adequate income or resources to obtain quality food, and utilisation that is the consumption or absorption of nutrients in the food.

Mathematical approaches are needed to optimize agriculture in order to produce more resilient crops through selective breeding and genetic modification. Ensuring food security promotes sustainable development, trade and a healthier environment. This is possible via the utilisation of complex mathematical modeling or applied mathematics and efficient mathematics skills to boost productivity. Mathematics also enables the gathering of relevant data on how to increase production and meet the ever-increasing global demand for food (iCrowdNewswire, 2021). Mathematics skills and models can be applied



to assess the possible outcomes of any course of action taken in the agricultural field which in essence increases the success of agriculture by enabling the making of more favourable decisions.

Economic Security

Economic security is defined “as the ability of individuals, households, and communities to meet their basic and essential needs sustainably: including food, shelter, clothing, healthcare, education, information, livelihoods and social protection” (GSDI, 2023). It is simply the protection against the threats to accessing basic social security that is, basic and essential infrastructure such as inequalities in education, health and employment (that is unemployment) which are threats to sustainable national development.

Bamigbola (2021) emphasized insecurity as one of the problems against realizing optimal national life amongst others which can be resolved using “techniques of mathematical optimization” in order to enhance the nation's economic fortunes. Hence, he emphasized system's improvement and wastage elimination as two essential strategies utilised in mathematical optimization.

Conclusion

This paper examines the application of mathematics as a tool for maintaining national security and development. The insecurity challenges experienced against information, finance, food and economic can be resolved using mathematical approach, that is, mathematics techniques and models, thus enhancing safety of lives and properties, survival and national development.

Recommendations

1. More mathematics experts should be involved in tackling the security matters in the nation, Nigeria.
2. Mathematics curricular at all levels of education should be regularly revised to incorporate more feasible skills that are useful in adapting to the advancements experienced in the world today so as to tackle the insecurity encountered in the nation.
3. Government should invest financially in the training of mathematics experts so as to acquire advance skills in tackling complex security issues in the country.

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INVESTIGATING THE AVAILABILITY OF QUALIFIED SCIENCE TEACHERS FOR EFFECTIVE TEACHING AND LEARNING OF SCIENCE SUBJECTS IN SENIOR SECONDARY SCHOOL IN ONDO STATE

BY

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Abstract

This study investigated the availability of qualified science teachers for effective teaching and learning of science subjects in senior secondary schools. The study adopted a descriptive research design of the survey type. Three research questions were formulated to guide the study. The population of the study consisted of all secondary schools' teachers and principals in Akoko South West Local Government Area of Ondo State. The sample comprised of 120 teachers and 30 principals randomly selected from six secondary schools. The instrument used for this research was a questionnaire which was validated face and content wise and the reliability of the research instrument yielded a coefficient value of 0.76. The descriptive statistics of frequency count and simple percentage were used to analyse the research questions. The findings revealed that the availability of professional science teachers in our schools was low due to factors which are prevalent such as irregular payment of teachers' salaries, low wage, and lack of qualitative teaching resources amongst others. Based on the findings of the study, the following recommendations were made: There should be a general reform of teacher education by government in all teacher training institutions; ensuring the adequacy of pre-service teachers' content and pedagogical knowledge in order to meet up with the current trend in education; and government should put up a strategy of checking the proliferation of teacher education in the country to ensure the standard is not compromised.

Keywords: Qualified Teachers, Teaching, Learning, Science Subjects.

Introduction

The global assertion that education is the basic means to sustainable development as well as a means to economic growth of a nation has led to increase in enrolment of students in schools. It is expected that quality education will produce quality human resources required for a nation (Ibokun, 2009). He asserted that no nation or society can rise above the quality of her educational system. Quality education has become very necessary for the advancement of technology and the introduction of basic education has increased the demand for education. This means that teachers who are the most vital resources in the education sector need to be motivated due to the role they play in the growth of the economy. Despite the advancement of science and technology the importance of availability of quality teachers cannot therefore be over emphasized (Adegbemile, 2011). This also corroborates the views of Okebukola (2010) who identified teacher quality and dedication as significant predictors of quality of education. The teachers hold the key to nation building.

The success or failure of any nation depends on the quality of her teachers. Teachers are important inputs into the educational system. Aghenta (2010) described them as "the key factors in formal education." Adesina (2011) called them the "key input of a highly-skilled labour resource" while Adeyemi (2014) regarded them as the hub of the educational system. Teachers therefore constitute an important aspect in students' learning. Supporting this point, Umeasiegbu (2011) argued that "the level of performance in any school is intimately related to the quality of its teachers" while "the quality of any school system is a function of the aggregate quality of teachers who operate it." His argument was in agreement with Moore (2004) contention that competent teachers would improve effective teaching in schools. Mullens (2003) also supported the argument and remarked that the level of a teacher's subject matter competence is a prime predictor of student learning. He argued that it is not simply the completion of schooling that could contribute to a teacher's effectiveness in the classroom but actual achievement in terms of subject matter competence. Improvement in the quality of education is determined by the quality of teachers. Therefore quality teaching and learning is sine qua non for students' academic performance.



The controversy over the falling standard of education has been on the front burner of national discourse over the years. This has been linked to several factors which include shortage of quality teaching staff, political instability, lack of facilities, politicization of education etc. In the same vein, qualifications of teachers in both primary and secondary schools have been questioned due to poor performance of students in examinations. Some of the states in Nigeria have sacked some of their teaching staff who failed to pass qualifying tests in their respective states. Also the student teacher ratio of one (1) to thirty – five (35) students has increased in alarming rate. This has also affected teaching and learning. Thus the abysmal performance of teachers is a major factor responsible for the poor students' academic performance in the science subjects especially Biology (Ewaton, 2010). Some studies have revealed that a number of variables for students' poor performance range from teachers' academic qualification, motivation, payment of salaries and wages (Daso, 2013 and Akinsolu, 2010), while Ayodele (2013) argued that the teacher factor is not the only factor but a combination of other variables such as teachers year of experience, teacher student ratio and utilization of instructional materials. Amaewhule (2018) opined that the most important resource in an organisation is the quality of the people who staff it. They are the most valuable assets. The vitality and effectiveness of a school are directly linked to the quality and resourcefulness of the staff. No responsible academic institution would commit funds to facilities without the required human resources. Amaewhule (2018) furthermore, explained that human resources are weakened if they are not properly employed as they may be ineffective.

Abe and Adu (2013) and Wiki (2013) opined that a teaching qualification or teacher's qualification is one of a number of academic and professional degrees that enables a person as a registered teacher in primary or secondary school. For instance Abe and Ado (2013) reported a positive significant relationship between teachers' variables such as area of specialization, gender, educational qualification and the learning outcomes of secondary school students. Adodo and Oyeniyi (2013) reported that teachers' qualification contributed marginally to students' academic achievement. Although Wiki (2013) noted a positive relationship between teachers' qualifications and students' academic achievement, Edu and Kalu (2012) reported that the inadequate qualification of teachers contributed to students' repetition of a class. High teacher experience was cited by Odumbe, Simatwa and Ayodo (2015) as one of the factors that enhance performance in day secondary schools. Biology as one of the science subjects and a science of life is full of technical terms and concepts some of which may not be easy for students to understand. It needs a qualified and competent teacher to explain them clearly (Ramelingam, 2012).

Several studies have revealed that students' academic performance in WAEC and senior secondary certificate school examinations (SSCE) results are persistently poor (WAEC & NECO Chief Examiners Report, 2013, 2014, 2015 & 2016). Lee (2000), Nwakonobi, Onwuachu (2009) in Ugwuadu (2017) reported on some of the problems that led to poor performance of students, which include the methodology adopted by teachers in teaching, unavailability of qualified teachers many among others are major factors affecting academic performance of student in biology. Teachers' quality is directly proportional to students' performance. This implies that teachers' role in the preparation of students to succeed in examinations cannot be undermined. Teachers' qualifications in any educational system determine to a great extent the quality of the system itself. Teachers' quality is widely thought of as an essential determinant of academic performance (Ibeawuchi 2012). It is probably for this reason that Ibukun (2009) asserted that no education system can rise above the quality of its teachers in any nation. Science educators give special recognition to Biology among sciences because of its educational values, its close relation to man as a living organism, its peculiar field of experimentation and inter-relationships with the other sciences. As a result of this, Biology occupies a unique position in the school curriculum. Biology is central to many science-related courses such as Medicine, Pharmacy, Nursing, Agriculture, Biochemistry, Microbiology and so on.

It is obvious that no student intending to study these disciplines can do without Biology. These factors amongst others have drawn the attention of researchers and curriculum planners towards Biology as a subject in the school curriculum (Kareen, 2013). In light of this views, this study tends to investigate the availability of qualified teacher in the teaching and learning of biology in secondary schools in Ondo State. Statement of the Problem In Nigeria, the unavailability of qualified teachers has been reported. Research reported that the performance of Nigerian students in Physics, Chemistry and Biology in the West African School Certificate examinations are found to be poor, and that “the high failure rate was partly due in part to the acute unavailability of science teachers.” These shortages have been attributed to the low salaries and social prestige given to teachers. A close observation at the demand and supply situations of teachers in Nigerian schools tends to reveal a disparity in the distribution of teachers to schools. The addition of new



subjects into the curricula of many schools and the introduction of the continuous assessment as a means of evaluating students' performance has led to the demand for more teachers. Although teachers were needed in the science and non-sciences subjects, the demand for teachers appears to be more pronounced in science subjects than in non-science subjects. Thus, in the African setting, many researchers have attributed the low achievement of students to teachers' inadequate knowledge.

The poor performance of students in biology was the result of poor knowledge in the subject which was brought about by the inadequacy of specialist teachers teaching biology in secondary schools. Teachers are important inputs into the educational system. The poor performance of students in both internal and external examinations has been generating a lot of concern for parents, students, teachers and stakeholders in education. Some people have attributed it to lack of qualified biology teachers. Teachers therefore constitute an important aspect in students' learning the level of performance in any school is intimately related to the quality of its teachers while the quality of any school system is a function of the aggregate quality of teachers who operate it. Competent teachers would improve effective teaching in schools most especially biology.

Statement of the problem

In Nigeria, the unavailability of qualified teachers has been reported. Research reported that the performance of Nigerian students in Physics, Chemistry and Biology in the West African School Certificate examinations are found to be poor, and that "the high failure rate was partly due in part to the acute unavailability of science teachers." These shortages have been attributed to the low salaries and social prestige given to teachers. A close observation at the demand and supply situations of teachers in Nigerian schools tends to reveal a disparity in the distribution of teachers to schools. The addition of new subjects into the curricula of many schools and the introduction of the continuous assessment as a means of evaluating students' performance has led to the demand for more teachers.

Purpose of the study

The purpose of the study is to examine the availability of qualified teachers for effective teaching and learning of biology in senior secondary schools. Specifically, the objectives of the study are to:

1. Examine the availability of qualified science teachers in effective teaching and learning of science subject in secondary schools.
2. To investigate the factors impeding availability of qualified science teachers in the teaching and learning of science subject in secondary school.
3. To find out how numbers of qualified science teachers have been influencing student academic performance in public secondary schools in Ondo State.

Research Questions:

The following research questions were raised to guide this study:

1. What are the qualification of science teachers in schools?
2. What are the factors impeding availability of qualified science teachers in the teaching and learning of biology in secondary schools?
3. How does the number of qualified science teachers influencing academic performance of students in public secondary schools?

Literature Review

A quality teacher is one who has a positive effect on student learning and development through a combination of content mastery, command of a broad set of pedagogic skills, and communications/interpersonal skills. Quality teachers are life-long learners in their subject areas, teach with commitment, and are reflective upon their teaching practice. They transfer knowledge of their subject matter and the learning process through good communication, diagnostic skills, understanding of different learning styles and cultural influences, knowledge about child development, and the ability to marshal a broad array of techniques to meet student needs. They set high expectations and support students in achieving them. They establish an environment conducive to learning, and leverage available resources outside as well as inside the classroom. This study was guided by Education Production Function theory



(EPF) which connects teacher characteristics to students' achievement. This theory is also called input-output theory.

Teachers have been recognized as indispensable factor and the most important element in the cause of transmission of knowledge and academic success. Concepts and attributes used to indicate teacher quality are complex and lack consensus definition. Some literature has teacher quality indicators as not only knowledge and skills, but also personal qualities like attitudes, organizational skills, teaching skills, guiding and supporting, communication skills, and so on. Several studies have it that quality indicators like teachers' subject matter knowledge, pedagogical knowledge, teachers' qualification have strong positive effect on achievement while others observed contrary to that. Some researchers claimed that teachers' knowledge of her students has the highest correlation to their achievement, while others maintained that teachers' teaching experience has the highest correlate. Generally, effective classroom management was observed to have strong positive correlate to students' interest as well as their achievement.

Methodology

The study investigated availability of qualified science teachers for effective teaching and learning of science subject in senior secondary schools in Ondo State. However, the study is a descriptive design of the survey type, the data from the selected sample of population.

The population comprises of teachers and principals in the public senior secondary school in Akoko South West Local Government Area of Ondo State. The sample of this study comprises one hundred and twenty teacher's (120) and thirty (30) principal's which are drawn from six (6) randomly selected senior secondary schools. Simple random techniques was used to select sample from the research area. Thus, 20 teachers and 5 principals are selected in each school. The sample comprises of both teachers and principal selected from six(6) secondary schools and the total sample constitutes 150 respondents. The instrument for this study is a questionnaire develop by the researcher and data was analyze using frequency count and simple percentage to answer the research questions.

Results

This section includes the analysis, result presentations, and interpretations. Frequency counts and percentage were used to test the respondents' social-demographic characteristics. The findings were presented using tables. The research questions raised in the study were analyzed using frequency count, and percentage summary. The findings were presented in tables.

Research Question 1: What are the qualifications of science teachers in school *second*?

Table 1: Percentage analysis of items on what are the qualifications of science teachers in school.

No	ITEMS	YES	NO
1	NCE holder in Biology	69(46%)	68(45.3%)
2	HND, B.sc with PGDE holder in Biology related course	21(14%)	21(14%)
3	Graduate with BA.Ed/B.Sc.Ed in biology related courses	20(13.3%)	20(13.3%)
4	Ph.D holder in biology	20(13.3%)	21(14%)
5	Master degree in Biology M.Sc./M.Ed.	20(13.3%)	20(13.3%)

What are the qualifications of science teachers in schools secondary schools were examined in table 1. It was observed that a larger percentage of the respondent 82(54.7%) said yes affirming the statement that NCE holder in biology are qualified in this category while 68(45.3%) said No. it was also observed

that 21(14%) said yes on the opinion that HND, B.sc with PGDE holder in Biology related course are qualified enough in this category in teaching biology while 21(14%) of the respondent said No. 20(13.3%) of the respondent said Yes on the opinion that Graduate with BA.Ed/B.Sc.Ed in biology related courses are qualified enough in teaching science subjects in these category while 20(13.3) percentage of the respondent said No. it was also observed that 20(13.3) of the respondent said Yes affirming the statement that Ph.D holder in biology is qualified enough to teach biology at various level while larger percentage of the respondent 21(14%) said No. Lastly 20(13.3%) of the respondent said Yes affirming the statement that Master degree in Biology M.Sc./M.Ed. are qualified in these category in the teaching of biology while 20(13.3%) of the respondent said No.

Therefore, it can be concluded that teachers in this category are qualified well enough in teaching of science subjects

Research Question 2: What are the factor impeding availability of qualified science teachers for the teaching of science subjects in secondary schools.

Table 2: Percentage Analysis of Item on factors impeding availability of qualified science teachers for the teaching of science subjects in secondary schools

ITEMS	SA	A	D	SD	MEAN
Irregular payment of teacher salaries hinders availability of qualified teachers	141(94%)	5(3.3%)	4(2.7%)	0	3.91
Low wage hinders the availability of qualified science teachers	134(89.3%)	2(1.3%)	10(6.7)	4(2.7%)	3.77
Lack of good teaching resources impedes the availability of qualified teachers	48(32%)	51(34%)	20(13.3%)	31(20.7%)	2.77
Geographical area always determine the availability of qualified science teachers	141(94%)	5(3.3%)	0	4(2.7%)	3.89
Cumbersome workload of teachers affects the availability of qualified science teachers	2(1.3%)	10(6.7%)	6(4%)	132(88%)	1.21
GRAND MEAN	62.12				

Research question two examined the factor that impedes availability of qualified science teachers in the teaching of science subjects in secondary schools. 141(94%) strongly agree, 5(3.3%) agree, 4(2.7%) disagree, while 0% of the respondent strongly disagree that irregular payment of teacher salaries hinder availability of qualified science teachers. 134(89.3%) of the respondent strongly agree, 2(1.3%) agree, 10(6.7%) disagree, 4(2.7%) strongly disagree on the statement that low wage hinders the availability of qualified science teachers. 48(32%) strongly agree, 51(34%) agree, 20(13.3%) disagree, 31(20.7%) strongly disagree on the opinion that lack of good teaching resources impedes the availability of qualified science teachers. 141(94%) strongly agree, 5(3.3%) agree, 0% disagree, while 4(2.7%) strongly disagree on the opinion that geographical area always determine the availability of qualified science teachers.

The result indicated that teachers have positive perception toward the factors that impedes



availability of qualified science teachers for the teaching of science subjects in secondary school. As seen in the grand mean 62.12.

Research Question 3: How does the number of qualified science teachers influencing academic performance of students in secondary schools

Table 3: Percentage Analysis of Item on number of qualified science teachers have been influencing academic performance of students in secondary schools

ITEMS	SA	A	D	SD	MEAN
My school has adequate number of science teachers	131(91%)	10(6.7%)	4(2.7%)	5(3.3%)	3.78
My school has more qualified professional science teachers than unqualified science teachers	5(3.3%)	137(91%)	4(2.7%)	4(2.7%)	2.95
The experiences of the teachers are adequate for effective teaching and learning of science subjects	130(86.7%)	9(6%)	8(5.3%)	3(2%)	3.77
Teachers in my school hardly teach subjects outside their area of specialization	40(26%)	25(16.5%)	50(34%)	35(23.5%)	2.46
Teachers in my school are well equipped with all required skills in teaching science subjects	58(38.7%)	31(20.7%)	7(4.7%)	54(36%)	2.62
GRAND MEAN	49.14				

Research question three examined how does the number of qualified science teachers have been influencing academic performance of students in secondary schools. 131(91%) strongly agree, 10(6.7%) agree, 4(2.7%) disagree, 5(3.3%) strongly disagree, on the opinion that my school has adequate number of qualified science teachers. 5(3.3%) strongly agree, 137(91%) agree, 4(2.7%) disagree while 4(2.7%) strongly disagree on the opinion that my school has more qualified professional science teachers than unqualified teachers. 130(86.7%) strongly agree, 9(6%) agree, 8(5.3%) disagree, while 3(2%) strongly disagree on the statement that the experience of the science teachers are adequate for effective teaching and learning. 40(26%) strongly agree, 25(16.5%) agree, 50(34%) disagree, while 35(23.5%) strongly disagree on the opinion that teachers in their school hardly teach subject outside their area of specialization. Lastly 58(38.7%) strongly agree, 31(20.7%) agree, 7(4.7%) disagree, 54(36%) strongly disagree, affirming the statement that teachers in my school are well equipped with all required skills on teaching science subjects.

The result indicated that teachers have positive perception toward how number of qualified science teachers have been influencing the academic performance of students as seen in the grand mean 49.14.

Discussion of findings

Research question one examined what are the qualifications of science teachers in schools and it was revealed that majority of the respondent. It was observed that a larger percentage of the respondent said Yes affirming the statement that NCE holder in biology are qualified in this category while lower percentage said No. It was also observed that the percentage of respondent said on the opinion that HND, B.sc with PGDE holder in Biology related course are qualified enough in this category in teaching biology. In a similar trend most of the respondent said Yes on the opinion that Graduate with BA.Ed/B.Sc.Ed in biology related courses



are qualified enough to teach in these category. From same perception it was also observed that majority of the respondent said No affirming the statement that Ph.D holder in biology are not qualified enough to teach at various level while others said Yes. Lastly much of the respondent said Yes affirming the statement that Master degree in Biology M.Sc./M.Ed. are qualified in these categories in the teaching of science subjects.

This finding is in line with the findings of Fajonyomi (2007) who posited that qualification of teachers will positively affect student performance more than the unprofessional or half-baked teachers. Fajonyomi (2007) further laid emphases that qualified teachers background training in education is the bane behind this clear-cut difference. No wonder in his study, remarked that the success of any educational enterprise depends largely on the availability of qualified professional teacher. Research question two examined the factors impeding the availability of qualified science teachers in the teaching of science in secondary schools. It was revealed that larger percentage of the respondents supported the notion that irregular payment of teacher salaries hinders availability of qualified science teachers. On the same perception majority of the respondent were in support on the statement that low wage hinders the availability of qualified science teachers. In similar trend majority of the respondent agreed on the opinion that lack of good teaching resources impedes the availability of qualified science teachers. Moreover, quite majority of the respondent supported the opinion that geographical areas always determine the availability of qualified teachers. Lastly cumbersome workload affects availability of qualified science teacher. This finding is in line with the findings of Ngada (2008) who posited that the availability of professional teachers in our schools is low due to quite numerous factors which are prevalent i.e, payments of teacher salaries, low wage, teaching resources, geographical area and teacher's workload many among others. This factor has been persistent in the educational sectors thus affecting the availability of qualified science teachers in schools and colleges.

The resultant effect on the students' performance is catastrophic. The major evil done by this is half-backed and shallow-knowledge students who often perform poorly in their examinations. Research question three examined number of qualified science teachers have been influencing academic performance of students in public secondary schools. It was revealed that majority of the respondent affirmed that my school has adequate number of science teachers. As they also found out that my school has more qualified professional science teachers than unqualified teachers. In a similar trend majority of the respondent said on the statement that the experience of the teachers are adequate for effective teaching and learning. Nevertheless most respondent agreed on the opinion that science teachers in their school hardly teach subject outside their area of specialization.

Lastly, much respondents affirm the statement that science teachers in my school are well equipped with all required skills in teaching science subjects. This research findings is in line with the findings of Ibekwe (2015) who revealed that teachers' effectiveness has proven to be the most influential school-related factors on students' performance and opportunities. Teachers' quality is directly proportional to students' performance. This implies that teachers' role in the preparation of students to succeed in examinations cannot be undermined. Teachers' qualifications in any educational system determine to a great extent the quality of the system itself. Teachers' quality is widely thought of as an essential determinant of academic performance. It is probably for this reason that Ibukun (2009) asserted that no education system can rise above the quality and influence of its teachers in any nation.

Conclusion

Qualified teacher are crucial in any educational system that is why it is important to ensure every teacher is academically and professionally qualified. Teachers' qualifications have a serious implication on students' academic achievement. Some scholars supported that poor pedagogical content knowledge of teachers led to poor academic performance by students. Teachers' qualification and teacher effectiveness are all correlated as reviewed above. Therefore, teachers' qualifications must have an influence on students' academic achievement. Teacher personal quality is very crucial to teachers' qualification.

Recommendations

In the light of the findings of this study, it is recommended that.

1. There should be a general reform of teacher education by government in all teacher training institutions. It is necessary to ensure pre-service teachers content and pedagogical knowledge are adequate and meet up with the current trend in education.



2. The government should put up a strategy of checking the proliferation of teacher education in the country to ensure the standard is not compromised.
3. The government should always make an effort to engage the services of those experienced teachers who have retired. It could be in the case of universities where we have Emeritus Professors who are still useful to their various departments even though retired.
4. Teachers should be regularly supervised and monitored on the general aspect of teaching and learning by school management
5. Government should manage teacher education bearing in mind its importance in the educational system of the country. With adequate funds, essential instructional facilities both in quality and quantity can be procured for the training institutions.
6. Teacher education policies and programme should not be abruptly terminated by successive governments. A supervisory and monitoring team should be set up to closely monitor the implementation of teacher education policies in the country by educational management committees in the country.
7. Teachers should be adequately remunerated and their salaries should compare favorably with the salaries of workers in other professions by government. This would raise the standard of living of teachers and make teacher available in schools. The public will not look down on them as those whose rewards are in "heaven". With good salary, people will be encouraged to join the teaching profession.

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CONFLICT MANAGEMENT STRATEGIES OF EDUCATIONAL ADMINISTRATORS EXPERIENCING IN-HOUSE TENSIONS.

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Abstract

Conflict is an inherent part of human interactions, and its effective management is crucial for maintaining healthy relationships and achieving organizational success. This paper explores various aspects of conflict management, focusing on its importance, types, causes, and consequences. Additionally, it examines key strategies and techniques for managing conflicts, such as mediation, constructive confrontation, and conflict resolution models. It also highlights the role of collaboration, emotional intelligence, and empathy in conflict management. Furthermore, it discusses conflict management in different contexts, including workplace, interpersonal relationships, and educational settings. The discussion emphasized the significance of proactive conflict management in preventing escalation and promoting positive outcomes. They underscore the benefits of fostering collaboration, and a culture of constructive conflict resolution. The recommendations among others are investing in conflict management training, establishing mediation and facilitation processes, promoting emotional intelligence and empathy, fostering collaboration and teamwork, developing conflict resolution policies, and continuously evaluating conflict management efforts. By implementing these recommendations, organizations can cultivate an environment that effectively manages conflicts, enhances relationships, and drives organizational growth.

Keywords: Conflict, Conflict Management, Strategies, Conflict Management strategies, Educational Administrators, In-House Tension.

Introduction

Conflicts are an inherent part of human interactions, arising from differences in perspectives, goals, values, and interests. Whether in personal relationships, workplaces, or educational settings, conflicts can have significant implications for individuals and organizations if not effectively managed. Therefore, the field of conflict management has emerged as a vital area of study and practice aimed at understanding and resolving conflicts in constructive and conducive environment. Conflict can be defined as a disagreement or clash between two or more parties characterized by incompatible goals, interests, or values. (Merriam-Webster Dictionary, 2023). Conflict is any divergency of interests, objectives or priorities between individuals, groups or organization (Kulo and Ambrose, 2014). Conflict is something that naturally occur and cannot be avoided in social interactions within the organization (Larasat and Raharja, 2019). It is a natural and inevitable aspect of human interaction and can occur at various levels, including interpersonal, group, and organizational levels. Conflict can take different forms, such as task-related conflicts (disagreements over work processes or goals), Conflict can generate into stress and discomfort due to the fear of unknown, thus it is a depressing and frustrating state between the individuals and parties involved. (Adhambo and Enose, 2011)

Conflicts can be classified into two dimensions: concern for self and concern for others. By examining these two dimensions, The Thomass -Kilmann conflict model provides a valuable lens through which conflicts can be analyzed and managed. (Ogunyemi, et al 2010) and Thomas- Kilmann (2022). Furthermore, the Thomas-Kilmann Conflict Model Instrument (TKI), derived from this framework, offers a practical tool for assessing individuals' preferred conflict management styles, such as competing, collaborating, compromising, avoiding, or accommodating. Organizational contexts, such as the



workplace and educational settings, have been explored as specific contexts for conflict management, therefore, management is necessitated to enhance learning, and group outcome, including effectiveness or performance in an organizational setting. (Wikipedia, 2020). The role of organizational culture, leadership, and policies in shaping conflict management practices, creating a culture that values open communication, promoting respect, and encouraging the constructive resolution of conflicts has been found to contribute to the overall effectiveness of conflict management strategies. Additionally, training programs aimed at developing conflict management skills among employees and educators have shown promising results in enhancing conflict resolution capabilities. Chandolia, & Anastasiou, (2020). While the existing literature provides valuable insights into conflict management, several gaps and areas for future research remain, further exploration of cross-cultural and gender differences in conflict management styles, the impact of technology-mediated communication on conflicts, and the effectiveness of specific conflict resolution strategies in different cultural contexts would contribute to a more comprehensive understanding of this field. (Runde & Flanagan, 2008).

Conflict Management in Educational Administration

Educational administrators play a crucial role in managing conflicts within educational institutions. Their responsibilities include creating a conducive environment for learning and growth, ensuring smooth functioning of the institution, and resolving conflicts that may arise among various stakeholders. Administrators are responsible for promoting a positive and collaborative atmosphere, addressing conflicts promptly and impartially, and maintaining the overall harmony within the educational community. Nwaham, (2020), Hum, (2022) and Coursera, (2022). Conflict management is the practice of being able to identify and manage conflict sensibly, fairly and efficiently. It is a process that deals with incompatibilities or disagreement arising diverging opinion, need, objective etc.

Managing conflicts among teachers can be particularly challenging for educational administrators. Some common challenges they may face include: Teachers may have different approaches to teaching and conflicting personalities, which can lead to clashes and disagreements, in academic settings, there can be a sense of competition among teachers for recognition, promotions, and research opportunities, this competitiveness can contribute to conflicts if not managed effectively, teachers often value their academic freedom and autonomy, which can sometimes clash with administrative policies and decisions, balancing these conflicting interests can be a delicate task for administrators, and inadequate communication or misunderstandings can escalate conflicts among teachers. Administrators need to ensure effective communication channels and address any communication gaps to prevent conflicts from escalating.

Strategies and best practices for administrators in effectively managing conflicts:

To effectively manage conflicts among teachers, educational administrators can implement the following strategies and best practices: Encourage an environment of open and honest communication, where teachers feel comfortable expressing their concerns and grievances. Establish regular channels for communication, such as faculty meetings or forums, to address conflicts and foster understanding. Foster a positive and inclusive organizational culture that promotes collaboration, respect, and appreciation for diversity. Encourage teamwork, collegiality, and mutual support among teachers to minimize conflicts. Offer training and development programs to enhance conflict management skills among teachers. Provide workshops or seminars on effective communication, negotiation, and mediation techniques to empower the teachers with the necessary tools to resolve conflicts amicably. In complex or persistent conflicts, administrators may seek external support, such as professional mediators or conflict resolution specialists, to facilitate the resolution process. External experts can provide unbiased perspectives and help navigate conflicts that require a neutral third party. The administrator can also adopt the following management skills; communicating clearly, empathetically, patience job application, apologizing, avoiding, punishing, being present, calmness, impartiality, intuitiveness, ability to let it go positively, respecting differences, stress management, and ability to take criticism. (Doyle, 2020).

Causes Of Conflicts

Common causes of conflicts Include differences in goals, values, communication breakdown, and resource allocation: Conflicts often arise when individuals or groups have different goals or objectives.



When there are incompatible interests or competing priorities, conflicts can emerge as parties seek to advance their own agendas. Conflicts can stem from differences in personal or organizational values. When individuals or groups hold contrasting beliefs, ethical principles, or cultural norms, it can lead to disagreements and tensions.

Inadequate or ineffective communication is a common cause of conflicts. Misunderstandings, misinterpretations, and poor listening can create friction and escalate conflicts. Communication breakdown can occur due to language barriers, lack of clarity, or nonverbal cues being misinterpreted. Conflicts may arise when there is competition or perceived inequity in the allocation of resources such as funding, time, or opportunities. Limited resources can trigger conflicts as individuals or groups vie their share or feel that their needs are not being met fairly.

(Corvette, 2007), (Valente, Laurencio and Nemeth, 2020)

Consequences of unmanaged conflicts:

Unresolved conflicts can strain relationships and create a hostile or tense atmosphere. Interpersonal conflicts can lead to resentment, distrust, and animosity between individuals. Intragroup or intergroup conflicts can fracture teamwork, collaboration, and cooperation. Conflicts that remain unaddressed can hamper productivity and performance. When conflicts persist, they can divert time and energy away from productive activities, create distractions, and decrease motivation. Unmanaged conflicts can disrupt workflow and hinder the achievement of goals.

Unresolved conflicts can have a significant emotional impact on individuals. They can cause stress, anxiety, frustration, and anger. Prolonged conflicts can lead to emotional exhaustion and contribute to a negative work or learning environment. Unmanaged conflicts have the potential to escalate, becoming more intense and damaging over time. Ignored or suppressed conflicts can resurface later with greater intensity, making resolution more challenging. In educational settings, unmanaged conflicts can result in organizational dysfunction. They can lead to a breakdown in communication, decreased morale, increased turnover, and a toxic work or learning environment. Unaddressed conflicts can hinder collaboration, innovation, and the achievement of educational objectives.

Types of conflicts.

Conflict occurs between individuals or among small groups. It involves disagreements, tensions, or clashes of interests, needs, or values. Interpersonal conflicts can arise from personal differences, misunderstandings, or conflicting objectives.

Intragroup conflict refers to conflicts that occur within a group or team. It involves disagreements and tensions among members of the same group. Intragroup conflicts can stem from differences in opinions, roles, or approaches to tasks. They can arise due to conflicting goals, power struggles, or communication issues within the group. Intergroup conflict occurs between different groups or entities. It involves tensions, disputes, or competitions between groups with distinct identities or interests. Intergroup conflicts can arise due to competition for resources, conflicting ideologies, or perceived threats to group identity. Examples include conflicts between departments within an organization, rival sports teams, or cultural clashes between different communities. Five major conflict management styles include collaboration, competing, avoiding, and compromising Thomas -Kilmann (2022). And Coursera, (2022).

Conflict Management Strategies and Techniques

Mediators and facilitators play crucial roles in guiding conflict resolution processes and helping parties involved in conflicts reach mutually acceptable solutions. (Sarpkaya, 2014). Mediators are neutral third parties who facilitate communication and negotiation between conflicting parties. They act as intermediaries, assisting in the exploration of underlying issues, identifying common interests, and promoting understanding and cooperation. Mediators help parties find creative solutions that address their needs and concerns while maintaining a balanced and impartial approach.

Facilitators also act as neutral third parties but focus more on managing the process of conflict resolution. They create a structured and safe environment for dialogue, ensuring that all parties have an equal opportunity to express their views and concerns. Facilitators help manage emotions, encourage active listening, and guide the discussion toward productive outcomes. They may use various techniques and tools to facilitate effective communication and collaboration.



Both mediators and facilitators are trained professionals skilled in conflict resolution techniques, communication strategies, and problem-solving approaches. They do not impose solutions but instead empower the conflicting parties to find their own resolutions.

Mediators and facilitators are unbiased and impartial, which helps create a fair and balanced environment for resolving conflicts. Their neutrality enhances the perception of fairness and encourages parties to engage in open and constructive dialogue.

Complex conflicts often involve deep-seated issues, emotional dynamics, and breakdowns in communication.

Mediators and facilitators guide parties in exploring interests, needs, and underlying concerns. They help reframe the conflict from a win-lose mindset to a problem-solving orientation, encouraging parties to generate creative and mutually beneficial solutions. By facilitating constructive problem-solving, complex conflicts can be effectively addressed.

Complex conflicts can strain relationships and make resolution seem impossible. By maintaining and repairing relationships, parties can work together more effectively in the long term. Mediators and facilitators empower conflicting parties to actively participate in the resolution process. They encourage ownership of the solutions reached, as parties have a direct say in shaping the outcomes. This promotes commitment to the agreed-upon solutions and increases the likelihood of successful implementation.

In complex conflicts, reaching a resolution can be time-consuming and costly. Mediation and facilitation can expedite the process by streamlining communication, managing emotions, and focusing on productive problem-solving. This can save valuable time and resources compared to lengthy legal proceedings or prolonged internal dispute. By utilizing mediation and facilitation as conflict management strategies, educational settings can effectively address complex conflicts, restore relationships, and foster a collaborative and inclusive environment

Conflict Resolution Models

Conflict resolution models such as the Thomas-Kilmann Conflict Mode Instrument (TKI) or the Win-Win Approach: There are several popular conflict resolution models that provide frameworks and strategies for effectively managing conflicts. Two widely recognized models are the Thomas-Kilmann Conflict Mode Instrument (TKI) and the Win-Win Approach. Ogunyemi et al (2010)

The TKI model presents five conflict-handling modes: competing, collaborating, compromising, avoiding, and accommodating. Each mode represents a different approach to conflict resolution based on assertiveness (the degree to which one seeks to satisfy their own needs) and cooperativeness (the degree to which one seeks to satisfy others' needs). The TKI model helps individuals understand their preferred conflict-handling style and provides insights into the appropriate use of different styles in various conflict situations. The Win-Win Approach, also known as principled negotiation or collaborative problem-solving, focuses on seeking mutually beneficial outcomes. This approach emphasizes open communication, active listening, and exploring common interests to find creative solutions. The Win-Win Approach encourages individuals to separate people from the problem, generate options, and work together to reach agreements that address the underlying needs of all parties involved. These conflict resolution models can be applied in various conflict scenarios, whether they occur in educational settings, professional environments, or personal relationships. The application and benefits of these models include:

Conflict resolution models promote effective communication by encouraging active listening, understanding different perspectives, and expressing oneself assertively and respectfully. This enhances the clarity of messages and reduces misunderstandings, leading to better conflict management outcomes, these models emphasize collaboration and cooperation by encouraging individuals to work together to find mutually beneficial solutions. By focusing on common interests and shared goals, conflicts can be transformed into opportunities for collaboration and innovation. Conflict resolution models provide structured frameworks for creative problem-solving. They encourage individuals to think beyond rigid positions and explore alternative options and compromises. This approach fosters a spirit of creativity and innovation, leading to novel and mutually satisfying solutions. Conflict resolution models aim to preserve relationships while addressing conflicts. By promoting respectful communication, understanding others' perspectives, and seeking win-win solutions, these models help maintain positive relationships and prevent conflicts from escalating or causing long-term damage.



These models encourage individuals to reflect on their own conflict management styles, strengths, and weaknesses. By increasing self-awareness, individuals can adapt their approaches to conflicts, make conscious choices about their behaviors, and develop more effective conflict resolution skills. Conflict resolution models facilitate structured decision-making processes by encouraging individuals to consider multiple viewpoints, explore different options, and evaluate potential outcomes. This leads to informed and rational decision-making, rather than impulsive or reactionary responses. Effective conflict resolution models help reduce stress and negative emotions associated with conflicts. By providing individuals with tools and techniques for managing conflicts constructively, these models empower individuals to approach conflicts with confidence, leading to an "In-house tension" refers to conflicts or disagreements that arise within a particular organization or company among its members or departments. It refers to the internal conflicts or tensions that occur between employees, teams, or different levels of management within the organization.

Meaning Of In-House Tension

In-house tension can emerge due to a variety of factors, such as differences in opinions, conflicting goals or priorities, power struggles, communication breakdowns, resource allocation issues, or personal conflicts among employees. These tensions can negatively impact the work environment, employee morale, and overall productivity within the organization.

Resolving in-house tension often requires effective communication, conflict resolution skills, and a collaborative approach. Organizations may employ various strategies, such as fostering open and transparent communication channels, promoting teamwork and collaboration, providing conflict resolution training, or establishing clear guidelines and procedures for addressing internal conflicts.

Conflicts among students:

Students in educational settings come from various cultural, social, and personal backgrounds, which can lead to conflicts arising from differences in values, beliefs, and communication styles. Strategies for managing conflicts among students include promoting inclusivity, fostering cultural understanding, and encouraging open dialogue to bridge gaps and find common ground.

Conflicts may arise due to bullying or harassment among students. It is essential for educational institutions to have clear policies and procedures in place to address and prevent such behaviors. Encouraging reporting, providing support systems for victims, and implementing anti-bullying programs are crucial strategies. Conflicts can occur when students challenge authority or when teachers struggle with managing disruptive behavior. Establishing clear expectations, implementing consistent discipline policies, and utilizing positive behavior management techniques can help address and prevent conflicts in the classroom.

Miscommunication between students, teachers, and administrators can lead to misunderstandings and conflicts. Encouraging open lines of communication, active listening, and providing opportunities for students to express their concerns can help resolve conflicts and build positive relationships.

Conflicts among teachers and administrators:

Conflicts may arise when there is ambiguity regarding roles and responsibilities or when power dynamics are perceived as unfair. Conflicts between parents, teachers and administrators can occur as a result aggression, inadequate facilities, inadequate, lack of pedagogical assistance by evaluation approval and disapproved criteria. Establishing clear job descriptions, fostering a collaborative work environment, and promoting transparent decision-making processes can help mitigate conflicts among teachers and administrators. Martinez (2005). Conflicts can occur when there are limited resources, such as funding, materials, or support staff. Fair and transparent resource allocation processes, effective communication about resource limitations, and involving stakeholders in decision-making can help address conflicts related to resource allocation. Research carried out by Khalid et al (2021), indicates that the majority of the teachers use all types conflict management practices, which include; competing, compromising, avoiding, accommodating, and collaborating. Furthermore, the research finding of Dolcino, and Lucky (2022) indicates that conflict management strategies of universities administrators were, dialogue, avoidance, meditation, and prevention.



The Role of Conflict Management in Creating a Conducive Learning Environment:

Conflict management plays a vital role in creating a conducive learning environment in educational settings. Here are some key aspects: Conflict management strategies help establish a positive classroom climate where students feel safe, respected, and valued. By addressing conflicts promptly and fairly, educators create an environment that encourages active participation, engagement, and learning. Conflict management promotes healthy relationships among students, teachers, and administrators. It allows for open communication, empathy, and understanding, fostering trust and collaboration. When conflicts are managed effectively, it strengthens the sense of community and cooperation within the educational institution.

Conflict resolution techniques help address emotional and psychological stressors that conflicts can bring. By managing conflicts, educational settings can promote the emotional well-being of students, teachers, and administrators, leading to a more positive and supportive learning environment. Conflicts, when managed properly, can bring valuable learning opportunities. They provide a chance for individuals to develop problem-solving skills, empathy, and communication abilities. By using conflicts as teachable moments, educational institutions can nurture personal growth and social development among students.

Effective conflict management enables the resolution of issues and the achievement of productive outcomes. By addressing conflicts in a constructive manner, educational settings can create an environment that fosters collaboration, innovation, and growth, leading to improved academic performance and overall success.

Conclusion

Various strategies and techniques for managing conflicts, such as mediation, facilitation, constructive confrontation, accommodation, avoidance, teamwork, resolution committee, enhanced communication, tolerance and the application of conflict resolution models have been discussed. These approaches emphasize the importance of collaboration, emotional intelligence, empathy, and assertive communication in resolving conflicts while maintaining respect and cooperation.

Importantly, effective conflict management in educational settings creates a conducive learning environment. It fosters positive relationships, emotional well-being, and productive outcomes for students, teachers, and administrators alike. By addressing conflicts promptly and fairly, educational institutions can cultivate a sense of community, trust, and engagement, ultimately enhancing academic performance and overall success. By nurturing a culture of open communication, empathy, and continuous improvement, organizations can navigate conflicts successfully and thrive in today's dynamic and diverse work environments.

Recommendations

Based on the discussions on conflict management, the following recommendations are proposed:

1. Organizations should prioritize providing training and development opportunities for employees at all levels to enhance their conflict management skills. This includes workshops, seminars, and courses that focus on effective communication, negotiation, emotional intelligence, and empathy. By equipping individuals with the necessary tools and knowledge, they can better navigate conflicts and contribute to a positive work environment.
2. Leaders should actively promote and reinforce a culture that encourages open communication, respectful dialogue, and constructive conflict resolution. This involves creating a safe and inclusive environment where individuals feel comfortable expressing their opinions, addressing conflicts directly, and seeking collaborative solutions. Leaders should lead by example, demonstrating effective conflict management behaviors and encouraging others to do the same.
3. Organizations should consider implementing formal mediation and facilitation processes to address complex conflicts. Mediators and facilitators, who are neutral third parties, can guide the conflict resolution process and help parties involved in the conflict find mutually agreeable solutions. These processes provide a structured and supportive environment for constructive dialogue, fostering understanding, and promoting reconciliation.



4. Organizations should recognize the importance of emotional intelligence and empathy in conflict management. Encouraging individuals to develop self-awareness, emotional regulation, and empathy skills can greatly contribute to resolving conflicts in a constructive manner. Emotional intelligence training programs and activities can help individuals understand and manage their emotions, as well as better understand the perspectives and emotions of others involved in the conflict.

5. Administrators should emphasize the value of collaboration and teamwork as essential components of effective conflict resolution. By fostering a collaborative work environment, where individuals are encouraged to share ideas, seek common ground, and work together towards shared goals, conflicts can be approached as opportunities for growth and innovation. Team-building activities, cross-functional projects, and inclusive decision-making processes can enhance collaboration and reduce the likelihood of conflicts arising.

6. Administrators should develop clear and comprehensive conflict resolution policies and procedures. These guidelines should outline the steps to be followed when conflicts arise, including how to report conflicts, who should be involved in the resolution process, and what resources and support mechanisms are available. Having well-defined policies and procedures ensures consistency, fairness, and transparency in conflict resolution processes.

7. It is crucial for organizations to regularly evaluate the effectiveness of their conflict management strategies and interventions. This can be done through feedback mechanisms, surveys, and assessments to gather data on the outcomes and impact of conflict management initiatives. By analyzing the results and identifying areas for improvement, organizations can refine their approaches and continuously enhance their conflict management practices.

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NUTRITIONAL PRACTICES, LEISURE ACTIVITIES AND WELLNESS LIESTYLES OF UNIVERSITY UNDERGRADUATES

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Abstract

This study examined nutritional practices and leisure activities in relation to the wellness, lifestyles of University of Lagos students. A total of 2131 university undergraduates between the age of 15 and 25 years were randomly selected in the University of Lagos, Akoka, as respondents for the study. Three instrument of Nutritional Practices Questionnaire (NPQ), Leisure Activities Questionnaire (LAQ) and Wellness Lifestyles Questionnaire (WLQ) were used for data collection. Data analysis was done with frequency count and percentage as wells regression analysis set at 0.01 and 0.05 levels of significance. Consumption of food nutrient ($r = .272, p < .01; \beta = -.056, p > .05$); consumption of specific serving of food group ($r = .265, p < .01; \beta = .104, p > .05$); rates of consuming food substances ($r = .0211, p < .01; \beta = .049, p > .05$); period of breakfasting ($r = .250, p < .01; \beta = .093, p > .05$); and leisure activities ($r = .506, p < .01; \beta = .461, p > .05$); significantly determines wellness lifestyles of undergraduate students. The joint contribution of consumption of food nutrients, consumption of specific serving of food group, rates of consuming food substances, period of breakfasting and leisure activities on wellness lifestyle was significant ($F_{(5,2126)} = 31.254; R = .528, R^2 = .279, adj. R^2 = .270; p < .05$). About 28% of variation in wellness lifestyle was accounted for by the nutritional practices and leisure activities. Positive nutritional practices and leisure activities will enhance wellness as well as improve life expectancy rate as well increase the quality of life of undergraduate students in Nigeria. Standard nutritional practices and good leisure activities programmes should be core in general academic curriculum of Universities in Nigeria.

Keyword: Nutritional, Leisure, Undergraduates, Wellness Lifestyles

Introduction

World Health Organization (2003) defined Health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". This definition moves from a medical model of health toward the concept of well-being. A scholarly foundation observes that the concept of well-being or optimal health involves a delicate balance among physical, emotional, spiritual, intellectual and social health and then lists a wide range of dimensions, from fitness, nutrition and stress management to meditation, education and relationships (Alberta Centre for Well Being, 1989). These conjured positional statements assumed that wellbeing or wellness is a construct of complex elucidation. This is in line with the reports that wellness has been recognized as the positive component of optimal health as evidenced by a sense of well-being reflected in optimal functioning, a good quality of life, meaningful work, and a contribution to society (The Healthy People, 2010). Wellness allows the expansion of one's potential to live and work effectively and to make a significant contribution to society. Schuster, Dobson, Jauregui and Blanks (2004) conceptualized wellness as a continuum and not as an end stage of life. Summarily, wellness is a term of various factors that interact in a complex, integrated and synergistic fashion, and the dynamic interaction of the dimensions causes the sum of the dimensions to be greater than the whole. Each dimension is integral to the whole and no one dimension operates independently (BC Atlas of Wellness, 2013).

Wellness promotion includes nutrition counselling and advice; smoking cessation education; weight loss and weight management education; prenatal education; health risk assessment; sexually transmitted diseases prevention; stress management education; and substance abuse counselling. Surely, a smoking cessation or substance abuse programmes is not wellness promoting in the same manner as a nutrition



education programme, nor is a nutrition education through a programme at a local clinic health promoting in the same manner as it would be if provided within the flow of school education.

Staying healthy attracts attention of practicing adequate nutrition which includes fueling to boost activity performance on a daily basis, fueling to decrease the risk of injuries, recover fully after workouts and fueling with foods that taste good, enjoyable, foods that can be prepared easily, and foods individuals feel confident eating (Abass, 2012). The practice of adequate nutrition according to Parmenter and Wardle (1999) includes advice to eat more starchy foods, plenty of fruit and vegetables and to cut down on fatty and sugary foods, as well as information about what these foods are explanations of the kinds of health benefits of following the guidelines and practical tips and recipes to help people make the recommended dietary changes. Abass, (2012) concluded his paper presentation that the most important message for students to live healthy through nutritional manipulations or strategies, the key principles of nutrition which are, proper hydration, fueling and adequate recovery must be taken into consideration. However, mastery of these principles does not come automatically, it must be practiced.

The survey study carried out by Maziya-Dixon, Akinyele, Oguntona, Nokoe, Sanusi and Harris (2004) on Nigeria Food Consumption and nutrition survey 2001-2003 showed that most households indicated that staple were available to them for 9-12 months. Maziya-Dixon Et al (2004) observed that especially within the 9-12 month range, the percentages of households that could afford the foods available was usually lower than the percentage that indicate availability. They reported that the most available staple foods that are major sources of energy (calories) were rice (14.8%), cassava (12.9%), maize (10.6%) and yam (10.1%), cowpea, groundnut are soybean are major sources of plant proteins. Cowpea was the most available, followed by groundnut and soybean. Maziya-Dixon et Al (2004) study observed that there were differences in the practices of food consumption across the agro-ecological zone indicating that the foods people consumed were determined by the foods that were available in their areas and these foods were determined in turn by the agro-ecological characteristics of the area. While the frequency of consumption of the major staples was high across the zones, consumption of some foods was particularly high where such foods grow better. Though, the sample of the study were not majorly youth, a high proportion of them represents the age group of university undergraduates. It can hereafter be inferred that the nutritional contents of what average Nigerian undergraduates consumed if ethically practiced run short of favourable wellness lifestyle.

Fatemeh, Sangdavini, Zoghi and Fallah (2013) submit that leisure activity is an inherent aspect of human nature, which is considered as a means for growth, development, wellbeing and happiness. Human life begins with movement and develops through activity and motion activity was the basis of life in early human beings so that those with higher physical strength succeeded in the struggle for survival. However, contemporary machine life, increased facilities and welfare have diverted human into a route inconsistent with his nature so that he experiences a variety of diseases caused by low activity, immobility and poverty of movement.

The study of Abayomi and Moses (2012) on Physical Activity (PA) and health Risk Behaviors among Colleges of Education students showed that 1680 (70.2%) of the respondents has the awareness that physical inactivity is one of the major causes of short life span in recent years. A number of as much as 712 (29.8%) were not aware. 328 (13.7%) of the respondents actually participate in the recommended at least 150 minutes of moderate intensity aerobic PA throughout the week or do at least 75 minutes of vigorous-intensity aerobic PA throughout the week or an equivalent combination of moderate and vigorous-intensity activity which is outrageously low compare to the 2064 (86.3%) that do not. 1208 (50.5%) has time to watch television for less than an hour per day, 568 (23.8%) sat for between 1-2 hours per day to watch television and 616 (25.7%) wasted more than two hours per day staring at the screen watching television. On smoking being good for healthy living, 556 (23.2%) agreed that smoking is good for healthy living whereas 1836 (76.8%) gave divergent response to the statement. 232 (9.7%) supported that idea that alcohol intake should be incorporated into the lifestyle of an individual while 2160 (90.3%) deviated completely from the view which area also another wellness lifestyles of Nigerian youths. Increased factors competing for leisure time of undergraduate stems from the use of sedentary materials (e.g. computers, television, video games). Which may be further detriment to physical health, as the average 8-18 year old individuals spends over 5 hours/day in front of screen (Roberts, Foehr & Rideout, 2005). Schuster, Dobson, Jauregui and Blanks (2004) have established a firm link between adequate nutrition and leisure activities as well as specific



health outcomes in terms of wellness lifestyle. The wellness of an individual arises from the wellness of the society and of the environment, if the practice of public wellness is to be effective, the ideology of wellness lifestyle promotion must pervade all aspect of undergraduate students.

It was observed that University of Lagos (UNILAG) students have not been properly practicing nutritional knowledge available to them for being in Lagos State. The facilities and equipment in recreational centres in Lagos state are not fully utilized. Life expectancy rates have reduced because of aspiration of human beings most especially the growing up population. Students do not see the need for them to replenish expended energy through leisure activities while increasing in the consumption of processed foods and foods with empty calories. If these growing up UNILAG students should continue with the present unhealthy practice, the future of our manpower is in serious dilemma. The inability of the majority of undergraduate students to personally imbibe the culture of engaging in healthy leisure activities in order to keep fit due to class workload in their university and at home result to poor wellness lifestyle. It is therefore important to examine nutritional practice and leisure activities as determinant of wellness lifestyle of University undergraduate students .

Research Questions

1. Will consumption of Food Nutrient determines wellness life style among the undergraduate students in university ofLagos?
2. Will consumption of specific serving of food group determines wellness life style among the undergraduate students in university ofLagos?
3. Will rates of consumption of food substance determines wellness life style among the undergraduate students in university ofLagos?
4. Will breakfasting determines wellness life style among the undergraduate students in university of Lagos?
5. Will Leisure activities participation determines wellness life style among the undergraduate students in university ofLagos?
6. Will independent variables of consumption of food nutrient,consumption of specific serving of food group, rates of consumption of food substance , period of breakfasting, leisure activities participation compositely determine Dependent variable of wellness lifestyle among the undergraduate students in university ofLagos?

Research Hypotheses

1. Consumption of Food Nutrient will not significantly determine wellness life style among the undergraduate students on university ofLagos students
2. Consumption of specific serving of food group will not significantly determine wellness life style among the undergraduate students on university ofLagos students
3. Rates of consumption of food substance will not significantly determine wellness life style among the undergraduate students on university ofLagos students
4. Period of breakfasting will not significantly determine wellness life style among the undergraduate students on university ofLagos students
5. Leisure activities participation will not significantly determine wellness life style among the undergraduate students on university ofLagos students
6. Consumption of food nutrient,consumption of specific serving of food group, rates of consumption of food substance , period of breakfasting, leisure activities participation will not be significant composite determinants of wellness life style among the undergraduate students on university of Lagos students

Material and Method

A total of 2131 university undergraduates who were between the ages of 15 and 25 years were randomly selected within the Faculties of Science, Social Sciences, Law, Business Administration and Education in University of Lagos, Akoka as respondents for the study. The study is a survey research approach which Schinka and Wayne (2003) pointed out to involves interpretation of facts without manipulating any variables. It is also an appropriate design for studying a large group of people because it



can be used to compare, contrast and evaluate the general characteristics of the particular group/groups under study (Avert, 2000). Three self-structured and validated instruments were used for data collection in the study. The first instrument was the Nutritional Practices Questionnaire (NPQ) which has four sub-scales (Consumption of Food Nutrients, Consumption of Specific Serving of Food Group, Rates of Consuming Food Substances and Period of Breakfasting) with six items each. The second instrument was the Leisure Activities Questionnaire (LAQ) which consisted of three items on each of sport during leisure time and physical activity during leisure. The third instrument centered on Wellness Lifestyle Questionnaire (WLQ) with thirteen items. Te-retest reliability using pearson Product Moment Correlation Coefficient alpha value estimates internal reliability and consistency to be 0.68, 0.73 and 0.78 for NPQ, LAQ and WLQ respectively. The average summated items on each variable based on the weight allotted were computed. The collected data were subjected to descriptive statistics of frequency count and percentage as well as parametric statistics of multiple regression analysis set at the 0.01 and 0.05 levels of significance.

Results

Result showed that 1022 (48.0%) of the respondents were males as against 1109 (52.0%) that were female. It revealed that 904 (42.4%) of the respondents age between 15-19 years, 997 (46.8%) of them aged between 20-24 years, 99 (4.7%) of them aged between 25-29 years, 105 (4.9%) of them aged between 30-34 years while 26 (1.2%) of them aged above 34 years. It also showed that 1547 (72.6%) of the respondents were Christians, 552 (25.9%) of them were Muslims and 32 (1.5%) affiliated to other religion. 1907 (89.5%) of the respondents were single as against 224 (10.5%) that were married. Result of the faculty of the respondents indicates that 846 (39.7%) were in Faculty of Science, 32 (1.5%) were in Faculty of Social Sciences, 375 (17.6%) were in Law Faculty, 448 (21.0%) were in Business Administration Faculty, 394 (18.5%) were in Faculty of Education and 36 (1.7%) were in Engineering. Based on the respondents educational level, 561 (26.4%), 642 (30.1%), 497 (23.3%), 384 (18.0%) and 47 (2.2%) of the respondents were in 100, 200, 300, 400 and 500 levels respectively.

Table 1: Regression Analysis on Consumption of Food Nutrients and Wellness Lifestyle of University of Lagos Students.

Variables	Mean	Std. Dev.	N	R	P	Remark
Wellness Lifestyle	44.7561	9.1901				
Consumption of Food Nutrients	46.8146	5.9873	2131	.272**	.000	Sig.

** 0.01 level of Sig.

Table 1 revealed that consumption of food nutrients significantly determines wellness lifestyle of University of Lagos Students ($r=.272^{**}$, $p<.01$).

Table 2: Regression Analysis on Consumption of Specific Serving of Food Group and Wellness Lifestyle of University of Lagos Students.

Variables	Mean	Std. Dev.	N	R	P	Remark
Wellness Lifestyle	44.7561	9.1901				
Consumption of Specific Serving of Food Group	13.0878	7.3439	2131	.265**	.000	Sig.

** 0.01 level of Sig.



Table 2 revealed that Consumption of Specific Serving of Food Group significantly determines wellness lifestyle of University of Lagos Students ($r=.265^{**}$, $p<.01$).

Table 3: Regression Analysis on Rates of Consumption Food Substances and Wellness Lifestyle of University of Lagos Students.

Variables	Mean	Std. Dev.	N	R	P	Remark
Wellness Lifestyle	44.7561	9.1901				
Rates of Consumption Food Substances	16.0220	3.4918	2131	.211**	.000	Sig.

** 0.01 level of Sig.

Table 3 indicates that Rates of Consumption Food Substance significantly determines wellness lifestyle of University of Lagos Students ($r=.211^{**}$, $p<.01$).

Table 4: Regression Analysis on Period of Breakfasting and Wellness Lifestyle of University of Lagos Students.

Variables	Mean	Std. Dev.	N	R	P	Remark
Wellness Lifestyle	44.7561	9.1901				
Period of Breakfasting	16.2756	3.7955	2131	.250**	.000	Sig.

** 0.01 level of Sig.

It is shown in table 4 that period of breakfasting significantly determines wellness lifestyle of University of Lagos Students ($r=.250^{**}$, $p<.01$).

Table 5: Regression Analysis on Leisure Activities Participation and Wellness Lifestyle of University of Lagos Students.

Variables	Mean	Std. Dev.	N	R	P	Remark
Wellness Lifestyle	44.7561	9.1901				
Leisure Activities	13.2707	3.2773	2131	.506**	.000	Sig.

** 0.01 level of Sig.

Table 5 shows that leisure activities participation of the respondents significantly determines the wellness lifestyle of University of Lagos Students ($r=.506^{**}$, $p<.01$).

Table 6: Regression Analysis on joint contributions of Consumption of Food Nutrients, Consumption of Specific Serving of Food Group, Rates of Consuming Food Substances, Period of Breakfasting on Leisure Activities to Wellness Lifestyle.

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	9634.973	5	1926.995	31.254	.000
Residual	24908.637	2126	61.655		
Total	34543.610	2131			



$R = .528, R^2 = .279, \text{Adj } R^2 = .270$

It is shown in the table 6 that the joint contribution of Consumption of Food Nutrients, Consumption of Specific Serving of Food Group, Rates of Consuming Food Substances, Period of Breakfasting and Leisure Activities on Wellness Lifestyle was significant ($F(5,2126) = 31.254; R = .528, R^2 = .279, \text{Adj } R^2 = .270; p < .05$). About 28% of the variation in Wellness Lifestyle was accounted for by the independent variables.

Discussions

This study examined nutritional practices and leisure activities in relation to the wellness lifestyles of University of Lagos students. Finding reveals that consumption of food nutrients, consumption of specific serving of food group, rate of consuming of food substances, period of breakfasting and leisure activities are positively related with wellness lifestyle. This agrees with the findings of previous works at different geographical locations in Africa (Ojo, 2003; Wilders, Strydom & Steyn, 2001). While all the components jointly contribute to wellness lifestyle, a further statistical analysis reveals that consumption of food nutrients, rate of consuming food substances and period of breakfasting had no significant relative contribution to wellness lifestyles. This supports Obbagy, MacNeil and Essery (2011) reports on the review of some studies that breakfast combined with nutrition education was related to lower weight, but not breakfast alone and that breakfast intake was associated with lower body weight in children. Many Nigerian students skips breakfast based on rational eating principles which may hamper their wellbeing as researches shows that not eating breakfast has been associated with excess body weight, especially among children and adolescents (Fadupin, 2009; Babatunde & Qaim, 2012). Obbagy, MacNeil and Essery (2011) had earlier established that consuming breakfast has been associated with weight loss and weight loss maintenance, as well as improved nutrient intake.

The consumption of food nutrients such as unripe plantain (amala), Irish potato (boiled), cassava (eba) and polished rice with fish, beef, chicken, pork meat (Fadupin, 2009) at high quantities by Nigerian always is not a good indicator of positive wellness lifestyle. The rate of consuming available food substances often exposed average Nigerian to overnutrition. Studies indicate that overnutrition as part of malnutrition is driven by many factors including the globalization of trade, finance, change of information and cultures, change of lifestyles and physical activities patterns, demographic shifts and urban growth due to rapid urbanization (Hawkes, Eekhardt, Ruel & Minot 2005; Popkin, Adair & Ng, 2012). Mokdad, Bowman and Ford (2001) and Coulibaly, O'Brien and Galibois (2009) reiterate that food exchange is useful in weight control to sustain an ideal body weight in individuals and also uphold the control of blood glucose.

Sustenance of ideal body weight should be through leisure time physical activities that have many inbuilt benefits. Huang and Carleton (2003) reported that the main reason for universities students to partake in physical leisure activities included taking pleasure, maintenance of health and strength and fitness. Mousavi (2001) investigated the effect of sports on nervous pressure, mental and physical health in faculty members and employees at Islamic Azad universities in the third regional district of Iran and reported that mental health was a stronger predictor of sports participation. Moreover, Mozzafari (2002) investigated the leisure time activities in students at Islamic Azad universities and reported obtaining pleasure, maintaining health, feeling strong and achieving physical fitness are the main motivations for participation in sports activities. According to Attarzadeh (2005), men mostly tended to participate in physical exercises to obtain happiness, improve body and mind and prevent diseases while women did so to lose weight, obtain happiness and improve body and mind, respectively. Peter (1993) studied the attitudes of American people towards participation in sports activities and reported maintenance of health as the most important reason why inactive people wished to participate in physical exercises.

Conclusion

Based on the findings of this study, it was concluded that;

Positive nutritional practices and leisure activities enhanced wellness or well-being of undergraduate students in Nigeria. This will further improve their life expectancy rate as well as increase their quality of life on Nigerian future manpower.



Recommendations

Sequel to conclusion of this study, the following recommendations were made;

1. Seminars should be organised for undergraduate students in Nigeria University on the efficacies of nutritional practices and leisure activities in having a wellness life style by Human Kinetics and Health Education lecturers.
2. More Human kinectics and Health Education lecturers should be employed at all Nigeria University to encourage the introduction of nutritional practice and leisure activities techniques to improve on wellness lifestyle of undergraduate students.
3. Standard nutritional practices and good leisure activities programmes should be made core in the general academic curriculum of Universities in Nigeria.

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EMOTIONAL INTELLIGENCE AS DETERMINANT OF BIOLOGY ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN AGAIE, NIGER STATE, NIGERIA

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Abstract

The study attempted to find out whether Emotional Intelligence can determine Secondary School students' academic achievement. Two research questions and two corresponding null hypotheses guided the study. Correlational research design was employed. Instruments used are the researcher's designed Emotional Intelligence Questionnaire (EIQ) for data collection and SSII Biology Students' achievement test result was used as criterion or dependent variable. The Questionnaire was validated by experts and the reliability coefficient of 0.78 was obtained. Sample size of the study comprised of two hundred and fifty (250) SSII Biology students. Hypothesis one was tested using Linear Regression while hypothesis two was tested using Kendall's Tau_B statistical tools. The result obtained showed that students with high emotional intelligence had higher academic achievement scores than those with low emotional intelligence indicating that emotional intelligence is a determinant of secondary school students' academic achievement. It is recommended that emotional intelligence should be included in curriculum of Nigerian secondary schools and also that, parents should pay more attention to the development of emotional intelligence of their children right from the family level especially the male children.

Key words: Correlation, Emotion, Examination, Intelligence, Promotion, Result and Students

Introduction

The minimum required grade for obtaining admission into high institution of learning in Nigeria is C6. Other grades especially D7, E8 & F9 are considered failed grades and are not considered for admission into higher institutions of learning in Nigeria. This implies that school cannot neglect the development of academic domains and other personal factors contributing to the success of students if the above educational objective is to be achieved (Nelson & Low, 2013). By implication, schools need to build high-achieving, productive and healthy students. In relation to the foregoing, Okonkwo (2014), opined that educators must not leave any stone unturned if the educational objectives are to be judiciously achieved. This can easily be done through a balance in the cognitive and emotional domains of the students. On this basis, Abdulrahman (2016), suggested that both emotional and cognitive domains of students' academic development should be the primary goal for educating students.

Emotional Intelligence is the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in us and in our relationships. Emotional intelligence is necessary for improving performance and psychological well-being of the students in school. If emotional intelligence skills are properly developed, strengthened and enhanced, students will be able to demonstrate increased levels of personal, academic and career achievement (Awolaju, 2015). Emotional intelligence brings new depth to the understanding of human intelligence as well as expanding the ability to evaluate one's general or overall intelligence. Nelson and Low (2013), identified the need for more effective development of emotional intelligence skills when they stated that the qualitative, holistic, emotive and subjective experiences of students are critical to healthy growth and development. Emotional development of students does not seem important until behaviour becomes problematic. Familiar examples are under-achievement, bullying, school violence and absenteeism. It is on the basis of the foregoing that the present study sought to determine "Relationship between Emotional Intelligence and Academic Achievement among Secondary School Biology Students in Agaie, Niger State".



Biology which is one of the major branches of science has been defined in different ways by different researchers. It is defined as the study of structure and function of living things (Lawal, 2014). It is also seen to be concerned with the study of structure, behavior, distribution and origin of living organisms and relationship between living organisms and their environment (Awolaju, 2015). On the other hand, Umoru (2016), referred to Biology as the study of living organisms (plants and animals). Implicitly, Biology is a broad branch of science concerned with the study of structure and function of living organisms as well as the interdependent relationship between living organisms and their environments.

Based on the above definitions of Biology, it has become an obvious fact that Biology must be properly taught right from the secondary school to be able to effectively utilize the importance of the knowledge of Biology. This therefore, calls for high achievement in Biology by students of that level of education. Unfortunately, research studies reveal that Biology achievement of secondary school students in Nigeria has consistently been below average. Both NECO (2019), and WAEC (2018), asserted that there has been a mass decline in Biology achievement of students at Senior School Certificate Examination (SSCE) conducted by National Examination Council (NECO) and West African Examination Council (WAEC). Researchers like Okonkwo (2014), Musa (2015), and Mohammed (2015), asserted that poor academic achievement among secondary school students is usually attributed to the school authority and teachers' attitude to work. Ukoh and Oboshi (2016), and Olaiya (2018), on the other hand asserted that poor quality of teachers and students' attitude towards education is one of the factors responsible for secondary school students' poor achievement at SSCE. Specifically, Isiugo-Abanihe *et al* (2010), Arli and Hartel (2011), Cook and Gail (2011), Awolaju (2015), as well as Abdulrahman (2016), all linked the major cause of Biology students' poor achievement to the students' emotional intelligence. Abdulrahman (2016), reported that students with low emotional intelligence show some adjective challenges and are mostly unable to handle effectively the demands of school work. Such students might not be capable of attaining personal goals which include high academic achievement.

On literature review, Maizatul *et al.*, (2012), investigated the influence of Emotional Intelligence on academic achievement among students of Education Faculty, Universiti Teknologi Mara (UiTM). Data of this research were obtained through the use of a questionnaire which elicits information on the students' Emotional Intelligence level as well as their academic performance. The results of the study revealed that the respondents have high level of Emotional Intelligence. Two domains of Emotional Intelligence (*Self-Emotion Appraisal* and *Understanding of Emotion*) were investigated and found to be significantly and positively associated with the respondents' academic achievement. The findings of the study hold important implications on the value of Emotional Intelligence and their relationships to students' academic performance especially among pre-service teachers.

On the other hand, Grace (2012), investigated emotional intelligence and gender as predictors of academic achievement among 163 undergraduate psychology students in the University of the West Indies (UWI). The results revealed significant positive and negative correlations among academic achievement, emotional intelligence components and gender. The study also reported that, using the stepwise multiple regression analysis, it was found that emotional intelligence contributed 40% ($Rsq= 0.396$) to the variance in academic achievement while simple regression analysis revealed that gender also contributed 5% ($Rsq =0.048$) to academic achievement and these results were significant indicating that both emotional intelligence and gender predicted academic achievement but emotional intelligence was a better predictor of academic achievement than gender. The Independent t-test analysis also revealed gender disparity in academic achievement and attending to emotions in favour of girls.

In addition, Maliha and Rehana (2010), conducted a correlational study aimed at examining the relationship of Emotional Intelligence (EI) with gender, age and academic achievement of students of International Islamic University Islamabad (IIUI). The predictor variable was emotional intelligence and criterion variable was academic achievement as measured by students' Cumulative Grade Point Average (CGPA). Emotional intelligence was measured using Emotional Quotient Inventory (EQI). Correlation analysis, regression analysis and t-test were performed to test the hypotheses. Results indicated a significant correlation between emotional intelligence and academic achievement. Emotional intelligence was found to be a significant predictor of academic achievement. No significant correlation was found between age and emotional intelligence. The result also revealed no difference in the mean EQI scores of male and female students except on stress management scale where male students scored higher than female students.



Statement of the Research Problem

It is no longer news that poor academic achievement of secondary school students in Nigeria has been a major source of worry to stakeholders and policy makers in the education sector (Federal Republic of Nigeria, 2014) has therefore taken some measures to address this ugly and national challenge affecting the educational sector. Measures taken by the government at various levels to address this national challenge include the need to develop the emotional intelligence of the students' right from secondary school level of education. This is because, a well-developed emotional intelligence of students determines their ways of thinking, recognizing and expressing feelings about what they are taught. Emotional intelligence influence what the students do, how they do it, how they look and feel as well as how they comprehend what they are taught. It is therefore, necessary to address the ugly trend of poor academic achievement among secondary school students by developing and enhancing their emotional intelligence. It is on the basis of the foregoing that this study was conducted to determine whether emotional intelligence can determine the Academic Achievement among Secondary School Biology Students in Agaie, Niger State.

Aim and Objectives of the Study

The aim of this study is to determine whether emotional intelligence can determine the Academic Achievement among Secondary School Biology Students in Agaie, Niger State. The specific objectives of the study are to determine the:

1. relationship between emotional intelligence and achievement in Biology among secondary school students in Agaie, Niger State
2. relationship between emotional intelligence and gender achievement in Biology among secondary school students in Agaie, Niger State.

Research Questions

To achieve the objectives of the study the following research questions were raised to guide the study:

1. what is the relationship between emotional intelligence and achievement in Biology among secondary school students in Agaie, Niger State?
2. what is the relationship between emotional intelligence and gender achievement in Biology among secondary school students in Agaie, Niger State?

Research Hypotheses

The following null hypotheses were formulated and tested at 0.05 significance level

HO₁: There is no significant relationship between emotional intelligence and achievement in Biology among secondary school students in Agaie, Niger State.

HO₂: There is no significant relationship between emotional intelligence and gender achievement in Biology among secondary school students in Agaie, Niger State.

Research Methodology

Research design employed for this study is Correlational research design. This design enabled the researchers to correlate the Biology achievement and Emotional Intelligent of the students. Students' immediate past promotion examinations result (Ex-post facto) conducted by Niger state ministry of education was used as criterion or determinant variable. The sample size for this study consists of two hundred and fifty (250) Senior Secondary (SSII) students (128 male and 122 female). The two instruments used for the study are: Emotional Intelligence Questionnaire (EIQ) and SSII Biology Students' Immediate Past Promotion Examination Result (BIOSIPPER).

Emotional Intelligence Questionnaire (EIQ) was used to collect data on the Emotional Intelligence of students and it consist of two sections which are sections A and B. Section A is about the bio-data of the respondents (students) while section B consists of questions on the Emotional Intelligence of the students and it is based on five levels of commitment of the students. The five levels of commitment used is Likert scales which are Strongly Agree (SA), Agree (A), Undecided (UN), Disagree (DA) and Strongly Disagree (SD). The levels are rated as follows: SA = 5mks, A = 4mks, UD = 3mks, DA = 2mks, and SD = 1mk. The students responded to the items by putting a mark () in any of the boxes that were placed against each item that best described their view or option.



Emotional Intelligence Questionnaire (EIQ) was validated by three experts and the suggestions, corrections and recommendations of the experts were used to produce the final copy of the questionnaire. A pilot test was conducted using split half technique to determine the reliability coefficient of the instrument (Emotional Intelligence Questionnaire). Data collected during pilot test were analyzed using Pearson Product Moment Correlation Coefficient (PPMCC) statistical tool. Reliability coefficient of 0.78 was obtained indicating that the instrument is consistent and reliable and was used for the study. The Emotional Intelligence Questionnaire was administered on the students from each of the schools after the researcher was granted permission to use the schools for the study. The researcher and the Biology teachers in each of the schools addressed the SSII students on the aim and objectives of the study so that they should be serious, honest and sincere in their responses as well as feel free to express themselves. Thereafter, the questionnaires were administered on the students. The filled questionnaires were collected from students and handed over to the researcher. The criterion or dependent variable which was the SSII Biology Students' Immediate Past Promotion Examination Result (BIOSIPPER) of each of the student used for the study was collected from their respective schools (from the examinations office) and used as the students' achievement scores. Data collected through Emotional Intelligence Questionnaire (EIQ) and SSII Biology Students' Immediate Past Promotion Examination Result (BIOSIPPER) was analyzed using Linear Regression, and Kendall's Tau_B statistical tools.

Results

To achieve the objectives of this study, the data collected were analyzed based on the hypotheses formulated and presented as follows:

Hypothesis I

HO₁: there is no significant relationship between emotional intelligence and achievement in Biology among secondary school students in Agaie, Niger State

Table 1a: Linear Regression on Emotional Intelligence and Achievement in Biology among Secondary School Students in Agaie

Model	R	R Square	Adjusted R Square	Std. Error of The Estimate
1	.846*	.668	.665	6.448

- a. Predictor: Emotional Intelligence
- b. Dependent Variable: Immediate Promotion Examination Result

Table 1a shows the linear regression coefficient of emotional intelligence and academic achievement of SSII Biology Students. The result shows $r(1,248) = 0.846$, $r^2 = 0.668$, which indicates that emotional intelligence is a predictor of Biology achievement among secondary school students. Therefore, the null hypothesis one is rejected. The r^2 of 0.668 indicates that 67.0% of the total Biology achievement of secondary school students was accounted for by the emotional intelligence.

To determine whether emotional intelligence is a good predictor, regression ANOVA analysis was conducted and the result is presented in table 1b

Table 1b: Linear Regression ANOVA on Emotional Intelligence and Achievement in Biology among Secondary School Students in Agaie

Model	Sum of Square	df	Mean Square	F	Sig.
1 Regression	64.440	1	64.440	32.220	.000*
Residual	55.540	248	32.9.01		
Total	119.980	249			



• = Significant

Table 1b shows the Linear Regression ANOVA on emotional intelligence of Biology achievement among secondary school students. The result indicates a significant relationship between predictor (emotional intelligence) and dependent variable (Biology achievement among secondary school students). $F(1,248) = 32.220$, $p(.000)$, $p < 0.05$. This therefore, indicates that emotional intelligence is a good predictor of Biology achievement among secondary school students. Furthermore, the regression coefficient indicates that, an increase of any unit of emotional intelligence caused a corresponding increase in Biology achievement among secondary school students. Therefore, emotional intelligence in this context has significantly determined Biology achievement among secondary school students.

Hypothesis 2

H_{O_2} : There is no significant relationship between emotional intelligence and gender achievement in Biology among secondary school students in Agaie, Niger State.

Table 2: Kendall's Tau_b analysis of Relationship between Emotional Intelligence and Gender Achievement in Biology among Secondary School Students in Agaie

		Emotional Intelligence	Gender
Kendall's Tau_b	Emotional Intelligence	Correlation Coefficient	1.000
	Intention	Sig. (2-tailed)	.086
		N	250
Gender		Correlation Coefficient	.081
		Sig. (2-tailed)	.149
		N	250

Table 2 show $r = .086$, $p\text{-value} = 0.149$ indicating that $P > 0.05$. Therefore, the null hypothesis two was not rejected. The correlation coefficient ($r = 0.086$) further shows that there is a positive relationship between gender and emotional intelligence of secondary school students. Hence, gender has no significant effect on Biology achievement among secondary school students. Therefore, there is a significant relationship between gender and emotional intelligence of Biology students.

Discussion of Results

The study was conducted to determine whether emotional intelligence can determine Biology achievement among secondary school students in Agaie, Niger State. In order to achieve the objectives of the study, the data collected were analyzed using Linear Regression and Kendall's Tau_B statistical tools. Table 1a reveals that there is a very high positive correlation between emotional intelligence and Biology achievement of Secondary School students. This result is in line with the findings of Nelson and Low (2013): Musa (2015), as well as that of Ukor and Oboshi (2016), who also reported a significant positive correlation between emotional intelligence and academic achievements of students. The result is also in agreement with the findings of Nwadinigwe and Azuka-Obieke (2012), who reported is a positive and significant relationship between emotional intelligence and academic achievement of students. The result implies that a person who is in a stable emotion tends to think positively and achieve better than the person in an unstable emotion during teaching and learning. When a student is emotionally destabilized, he or she cannot think and concentrate properly during teaching and learning. This is the reason why children who are not well catered for or are maltreated at home do not achieve well in the school because they are emotionally unstable. This finding is in support of the fact that there is close connection between affective domain and the cognitive domain of learners. Whatever happens to the affective domain of a student would definitely affect the cognitive domain of the particular student. Therefore, in finding solutions to the poor academic



achievement of students in Biology, proper attention needs to be directed towards development of the affective domain of the students.

In table 2, the result indicates a significant relationship between the emotional intelligence and gender among secondary school students. This result is in line with the findings of Ukor and Oboshi (2016), Maizatul *et al.*, (2012), Maliha and Rehana (2010), and Grace (2012). They all reported that, the emotional intelligence of female and male students are equally related to their academic achievements. This finding implies that gender has no any significant influence on emotional intelligence and academic achievement among secondary school male and female students. On the contrary, Olatoye (2010), reported that the emotional intelligence of female students is higher than that of the male students. They further asserted that the difference is one of the reasons why a girl child shows higher level of emotional intelligence compared to boys. The reason may probably be due to the fact girls receive significantly more education on emotions from parents than the boys right from home. This makes girls more emotionally competent than boys. The boys on the other hand are always perceived as stronger person compared to girls. This is why boys' emotional needs are in most cases not properly attended to as compared to that of the girls by parents. This could therefore be the reason why in Nigerian for instance, girls are given more protection by parents than boys in many parts of the country.

Generally, the result of this study showed that students with high emotional intelligence had significant improvement in their academic achievement than those that have low emotional intelligence. This is an indication that students' emotional intelligences are positively related to students' academic achievement. This is a pointer to the fact that emotional intelligence is one of the several factors determining the academic achievement of the students. In addition, this finding also revealed that gender has no significant influence on emotional intelligence and academic achievement among secondary school students.

In conclusion, this study has revealed that emotional intelligence is one of the several factors that determine the academic achievement of the students. Thus, efforts should be made to develop the emotional intelligence of students.

Recommendations

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

- Emotional intelligence should be included in curriculum of secondary school students and there should be periodic emotional intelligence training and retraining for teachers and school administrators for effective implementation of emotional intelligence curriculum.
- Parents need to pay more attention to the development of the emotional intelligence of their children right from the family level.

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ISLAMIC PRINCIPLES FOR PURPOSE OF LIFE EXISTENCE: A PANACEA FOR SECURITY CHALLENGES AND NATIONAL DEVELOPMENT

BY

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Abstract

Islam being a perfect religion has made provision to solve all human problems including leadership and followership. Islam is the response to humanity's search for meaning. The purpose of creation for all men and women for all times has been one: To know and worship God. Islamic discourse has been playing an important role in reducing insecurity in Nigeria. Nigeria has been in upsurge of activities of the insurgency by Boko Haram, and, Islamic State of West Africa and kidnappers which had led to loss of lives and properties in the country especially in the Northern part of Nigeria. These effects had triggered inflation in food prices, low investment returns, reduction of a developing country's capacity to attract foreign investors, disruption of economic activities and decimation of consumer confidence. These social menace triggered off a worrisome sense of insecurity that challenges Nigeria's efforts towards national economic development. By imbibing Islamic laws, code of life, and principles to curb these challenges as Quran lays emphasis that the purpose of life is to recognize the Creator, surrender ourselves, be grateful, obey the laws and worship Allah. The paper gives a critical look and emphasis on how the effective use of the Islamic principles and injunctions and purpose of life could tackle moral degeneration and reduce insecurity for national development. This paper concludes by proffering the imbibing of Islamic teachings through promotion of peace and engagement with all stakeholders, Islamic scholars, administrators, policy makers in the country for national development, as panacea to national insecurity.

Keywords: challenges, Islamic, life, national development, principles, security.

Introduction

Praise be to Allah (SWT), the Lord of the World; and May His blessings and Peace be upon our Prophet Muhammad and upon all his Family and Companions. In the name of Allah, The Most Gracious and The Most Merciful. He is the One and the Only God. He is worthy of worship and veneration. He is All-Loving. He is All-Knowing, All-Seeing, All-Hearing (wakil). He owns everything, including you and I, the Sun, the Moon, the World, everything it contains. He is in control of all things (Qur'an 29:46; Qur'an 2:163; Qur'an 142:11).

Islam is the religion of truth, universalism, peace, tolerance and reconciliation as it teaches that life is sacred and a believer's duty is to uphold truth and justice as a principle. Islam is the response to humanity's search for meaning. The purpose of creation for all men and women, since inception is "to know and Worship God. This quest is guided by the embodiment of the code of life which Allah, the Creator and Lord of the universe, has revealed for the guidance of mankind (Ahmad, 2023; Mufti, 2016).

Everything in nature functions according to fixed laws set forth by Allah (SWT) and cannot deviate from those laws. The Sun knows its role—it knows the cycle of its rotation; it knows its role as the giver of light, heat, and energy on Earth. The Earth knows its rotation cycle around its axis. Your own eyes, heart, brain, your entire body and all of its components, are working subject to the laws of nature—and have no choice but to do as they are intended. As Allah refers to the Earth, the Sun, the Moon, the merging of the night into the day, and the merging of the Day into Night, as His miraculous signs and evidence of an existence of a Creator (Qur'an 51: 47). All of God's creation worship Him in a manner appropriate to their situations. The Sun, the Moon, the Stars, the Mountains, the trees, the animals, the whole Universe all exist in a state of subjugation to Allah, the Almighty.

"Allah created the heavens and the Earth and all that is between them in six days". (Qur'an 7:54)

The very name of the religion, Islam, means submission or obedience to God, and the Muslim is one who submits or surrenders to God and recognizes Muhammad as God's prophet. All created things fulfill



their assigned purpose by serving God. Islam teaches that God created humans from clay and breathed the spirit of life into them. He separated them from the rest of creation by giving them three divine gifts: intelligence to distinguish the true from the false, a will that can freely choose between them, and the power of speech to worship. Because of these gifts, people are the noblest of God's creatures, superior to the rest of nature. Among the many creations of God, the creation of humans holds a very unique position. In a world, where both good and evil exists, humans are directed to establish a morally esteemed designation and enrich their lives with worldly and spiritual pleasures. God says in the Quran,

“And I have created Jinn and men so that they should worship me” (Qur'an 51:57).

Also,

“To him belongs whomsoever is in the heavens and the earth; all obey his will (Qur'an 30:26)

From ayah, it is clear that the creation of humans, as well as jinn, is for the purpose of worshipping Allah Almighty. When a Muslim venerates Allah Almighty, he or she actually accepts his or her Lordship which is the same as on the oath that was taken before their birth.

Purpose of the study

The purpose of this paper is to discuss the Islam, examine the contribution of Islamic principles for purpose of life (existence), its benefits of security or importance of security, current state of security, Identify the challenges, national development and how Islamic principles can be panacea for growth in Nigeria. This will be achieved by using review analysis of published literature to guide the paper.

Statement of the Problem

In spite of series of security and development strategies, put in place by successive governments, and sometimes with good intentions, all attempts to generate meaningful development proved futile. This evident due to lack of executive capacity responsible for the formulation and implementation and planning and the greatest of all not putting in place proper consultation in line with Islamic principles for the smooth implementation what is achievable when the officials entrusted to such a position do not have the fear of Allah and the view of life after.

This is a result of high level of corruption and indiscipline among administrators and policy makers who are supposed to interested in the welfare of the the state an instrument as turn the seat for capital accumulation, rather than using it to project, provides welfare for the security sector and the interest of the citizenry which will invariably affect security and national development (Mimiko, 1998). as the glorious outlines it, administrators must have the fear of Allah in their mind, this will tackle security challenges, the Quran emphatically states that the Day of Judgment must come and that Allah will decide the fate of each soul according to his or her record of deeds:

And We did not create the heaven and the earth and that between them aimlessly. That is the assumption of those who disbelieve, so woe to those who disbelieve from the Fire. Or should We treat those who believe and do righteous deeds like corrupters in the land? Or should We treat those who fear Allah like the wicked? (Quran, 38:27-28).

And also,

But those who disbelieve say, “The Hour (i.e. the Day of Judgment) will not come to us.” Say, “Yes, by my Lord, it will surely come to you. [Allah is] the Knower of the unseen.” Not absent from Him is an atom's weight within the heavens or within the earth or [what is] smaller than that or greater, except that it is in a clear register - That He may reward those who believe and do righteous deeds. Those will have forgiveness and noble provision. But those who strive against Our verses [seeking] to cause failure (i.e. to undermine their credibility) - for them will be a painful punishment of foul nature. (Quran, 34:3-5)

Literature Review

The Nigerian nation state cannot be said to be a stranger to the phenomenon of security challenges affecting national development. Many scholars have come up with varying views of development. According to Joyce (1966); development is how best to organise a country, which has half of its population



suffering from acute shortage of food, shelter, school Hospital etc. It is conceived with all means that can be used to wipe out the productive of poverty, hunger, disease, ignorance and misery.

“And if the people of those towns had believed and had the Taqwa (piety), certainly, We should have opened for them blessings from the heaven and the earth.” [Qur'an 7:96]

What is the purpose of my life? How can I make the best out of it? What happens after death and how to prepare for the after life?

From the smallest particles to the big stars and vast galaxies, every thing is running smoothly according to a perfect plan. The universe didn't come into being by an accident and doesn't run on its own. Common sense dictates that there must be a Creator behind this great scheme, and there is, (Allah), Who controls everything. How things in the cosmos can run so smoothly for millions of years without a supreme Operator to manage and regulate them.

This life is a one-time opportunity to achieve everlasting happiness in the Hereafter. Every moment has a great potential if positively used to raise status and rank in the sight of our Creator. Strong faith and good deeds bring peace and comfort in this life, in the grave and in the Hereafter. This world is but a station, not the destination. It is a place where we are sent to be tested. It is not a place to become lost in its wonders and temptations and be inactive, lazy or lethargic and the promotion of worship is the remedy to ones life purpose of life on earth.

"So did you think that We created you for nothing, and that you will not be brought back to us?"
[23:115]

Worship ('ibadat) is essentially obedience to God (ita'at). It is to act upon the commandments of Allah and to follow Him by seeking His pleasure. The act of worship (Ibadaah) to submit, surrender, thanks and obey our creator Allah (SWT) and his terms and conditions. They do so willingly or unwillingly for they have no free will to defy, deny, or disobey God. All that is in the heavens and the earth belongs to Allah and obey His will, as mentioned in Surah Ar-Rum.

Every single act of obedience becomes worship when done sincerely seeking naught but Allah's pleasure. Smiling in the face of a brother is worship, controlling one's anger is worship, removing a harmful object from a pathway is worship, and enjoining good and forbidding evil is indeed worship. Even something as trivial as entering and exiting the toilet when done according to Islamic etiquettes becomes an act of worship.

In a Hadith reported in Sahih al-Bukhari, the Prophet (PBUH) that helping the widows and the poor is like fighting in Allah's path.

Worship is explained as everything in Islam that an individual does for the love and pleasure of Allah. 'Islam' means 'submission', and worship, in Islam, means 'obedient submission to the will of God.' Every created being 'submits' to the Creator by following the physical laws created by God, They, however, are neither rewarded nor punished for their 'submission', for it involves no will. Reward and punishment are for those who worship God, who submit to the moral and religious Law of God of their own free will. This worship is the essence of the message of all the prophets sent by God to mankind. Elaborating on this, Hazrat Hakeem Maulawi Nur-ud-din(ra) gives the example of commandments related to fasting and praying. If these acts themselves were part of worship, doing more of them would be beneficial and a source of reward (Ahmadiyya Muslim Community, 2023).

Man is expected to worship and praise his Creator, much like the surrounding creations are continuously praising God in humility; in a way we may not understand. All the creation praises, worship, and lives in submission to the Almighty, in their unique style Salat (Fajr, Dhuhur, Asr, Maghrib and Isha). God's creation prostrates to Him as per its nature, even if they do not press their foreheads to the ground as the second of the five pillars of Islam (Yang, 2016; Taqra, 2015).

Meaning of Purpose of life

People provide different answers to the purpose of life. Some people believe the purpose of life is to accumulate wealth. But one may wonder: What is the purpose of life after one has collected colossal amounts of money? What then? What will the purpose be once money is gathered? If the purpose of life is to gain money, there will be no purpose after becoming wealthy. And in fact, here lies the problem of some unbelievers or unbelievers at some stage of their lives, when collecting money is the target of their lives. When they have collected the money they dreamt of, their lives lose its purpose. They suffer from the panic of nothingness and they live in tension and restlessness (Quranic Course's Academy, 2023).



Mohamad, AbdRazak and Mutiu(2011), defined purpose in life as a feeling that there is meaning to present and past life, having goals in life with a sense of directedness, and upholding a belief that gives life meaning. So, as people tend to derive purpose from daily events and experiences, they often create meaningful lives when they define a purpose for their living. The purpose of our creation is obvious: to reach our utmost goals of belief, knowledge, and spirituality; to reflect on the universe, humanity, and God, and thus prove our value as human beings by doing what they believe to be right, and then reflect upon their behavior, thereby continually deepening their thoughts and acquiring new ideas (Ilinktours, 2022).

The Purpose of Life According to Islam and Quranic Verses

The Quran is a book of guidance and explains many concepts such as the purpose of our existence and worship of the One true God (Quran 19:36).

"It is not befitting for Allah to take a son; He is perfect and flawless!" Quran 19:35

Islam is a complete religion having proficient knowledge about every matter of life and to our amazement; it has answers for this too. Quran clearly states that the Muslim's whole life purpose is nothing but to obey Allah and keep His love above everything as revealed to the prophets from Adam to Prophet Muhammad (PBUH) reminding us of his will by also raising among men prophets to reveal the code of life that guides man's steps to the right path using Islamic injunctions (Ahmad 2023; Qur'an 3:189-191; Quran, 7:59,65,73,85; Qur'an 11:50,61,84; and 23:23,32).

"Indeed, we have sent a messenger to every nation (saying), Worship God and avoid false gods..." Qur'an 16:36

But in order to worship Him, we have to know Him well, otherwise we may form a distorted concept of Him and then go astray. In the Quran Allah tells mankind what He is and what He is not. So what does the Creator, Allah, tell us about our purpose in life? Allah states in the Quran that He created man to be His Khalefah, His trustee on earth (Quran 2:30). Mankind's basic trust, our responsibility, is to believe in and worship Allah: The following texts from the Qur'an confirm this:

"And I (Allah) created not the jinn (demon) and mankind except that they should be obedient (to Allah)." (Qur'an 51:56)

Also, Surah An-Nahl, Allah (SWT) states that messengers to all nations calling on people to Worship Allah Alone.

In the Holy Quran, Almighty Allah Almighty mentioned the reason for the creation of this world which is: "And to Allah belongs the dominion of the heavens and the earth, and Allah is competent for all things. , in the creation of the heavens and the earth and the alternation of night and day are signs for those of understanding Who remembers Allah by standing or sitting or lying on their sides and thinking to the creation of heaven and earth, [saying], "Our Lord, You have not created this without purpose; exalted are you [above such a thing]; so protect us from the punishment of the Fire .. "(Quran 3: 189-191)

So, above the verse of the Holy Quran, we learnt that Allah created this world and humanity for His worship and we must always remember Allah Almighty because He is the one who created day and night, heaven and earth and all other things we see in this world. He created nothing aimlessly; everything is created for some reason and has a purpose in life.

In the Holy Quran, Almighty Allah Almighty mentioned the reason of creation of this world that is: "And to Allah belongs the dominion of the heavens and the earth, and Allah is over all things competent. Indeed, in the creation of the heavens and the earth and the alternation of the night and the day are signs for those of understanding. Who remember Allah while standing or sitting or [lying] on their sides and give thought to the creation of the heavens and the earth, [saying],

"Our Lord, You did not create this aimlessly; exalted are You [above such a thing]; then protect us from the punishment of the Fire.." (Quran 3: 189-191)

The Qur'an describes the purpose of creation as follows:

This signifies the importance of man's ultimate life objective is to worship the creator Allah SWT (English: God) by abiding by the Divine guidelines revealed in the Qur'an and the Tradition of the Prophet. Earthly life is merely a test, determining one's afterlife, either in Jannah (Paradise) or in Jahannam (Hell). In below verse, Allah states that the reality of this life on earth is a test should not fall for its temporary enjoyments and Obedience testifies to the oneness of God in his lordship, his names, and his attributes (The



Sincere Seeker, 2018).

In Quran, Allah Almighty says:

"I have created the jinn and humankind only for My worship." (Quran, 51:56)

From the ayah, it is clear that the creation of humans, as well as jinns, is for the purpose of worshipping Allah Almighty.

For Allah's satisfaction, via the Qur'an, all Muslims must believe in God, his revelations, his angels, his messengers, and in the "Day of Judgment".

"Blessed be he in whose hand is the kingdom, he is powerful over all things, who created death and life that he might examine which of you is best in deeds, and he is the almighty, the forgiving" (Qur'an 67:1-2)

The Sufi's view of the meaning of life stems from the Hadith Qudsi that states

"I (God) was a Hidden Treasure and loved to be known. Therefore I created the Creation that I might be known."

One possible interpretation of this view from the above text is that the meaning of life for an individual is to know the nature of God, and the purpose of all of creation is to reveal that nature, and to prove its value as the ultimate treasure, that is God (Taqla, 2015).

Islam teaches **universal brotherhood** as indicated and expressed in our daily prayers and pilgrimage to Makkah. "O mankind! We have created you from a male and a female, and made you into races and tribes, that you may identify one another. Surely, the noblest of you, in Allah's sight is the one who is most pious of you. Surely,

"Allah is All-Knowing, All-Aware." (Qur'an 49:13)

Islam's mission is to **serve humanity**. Islam teaches us to help the needy without any discrimination of colour, creed, race, nationality or religion, dressing up in the light of Islamic teachings carried out for the sake of submission to Allah is the sole purpose of life. "The entire humanity is Allah's family, and Allah loves him most from among His family, who benefits the family most". [*Mishkawat*].

Islam gives a **second chance** to every human being to bring his life back on track, find the way to salvation and to prepare for Paradise. Embracing Islam washes away previous sins. Repentance is the way to protect from punishment in the life of the Hereafter.

Hereafter is better and more lasting Qur'an (87: 16-17):

Verily, the home of the Hereafter - that is the life indeed (i.e. the eternal life that will never end (Quran 29: 64)

This means that the Hereafter is the real and permanent life while this life (Dounia) is doomed to extinction. Dounia is where the person acts and does what he wants while the Hereafter is where he is called to account and judged for his acts (Islam Web, 2023). The paragraphs are too short. Merge them together. With this belief in the second life and the Day of Judgment, the Muslim's life becomes purposeful and meaningful. Moreover, the Muslim's standing purpose is to go to Paradise in the second life (Ahmadiyya Muslim Community, 2023; The Cave, 18:110). Allah Almighty has informed us and made it clear that when humans indulge in each other's hatred, they will certainly choose to hate others as a goal of their life that will distract them from the true purpose and who is the memory of Allah. Therefore, in order to achieve the goal of knowing the Lord, a Muslim must abstain from harm to the same extent that he or she is prone to do well.

In another verse of Quran Allah Almighty says that:

"Know that the life of this world is but amusement and diversion and adornment and boasting to one another and competition in increase of wealth and children – like the example of a rain whose [resulting] plant growth pleases the tillers; then it dries and you see it turned yellow; then it becomes [scattered] debris. And in the Hereafter is severe punishment and forgiveness from Allah and approval and we should not be delusional with the pleasures of Earth (Quran 57:20).

Islam and Islamic principles for purpose of life

The Meaning of Islam

Islam is an Arabic word that denotes submission, surrender, and obedience. As a religion, Islam stands for complete submission and obedience to Allah - that is why it is called Islam. The other literal meaning of the word "Islam" is "peace." This signifies that one can achieve real peace of body and of mind only through submission and obedience to Allah. Such a life of obedience brings peace of the heart and

establishes real peace in society at large. Those who believe and whose hearts find rest in the remembrance of Allah—indeed it is in the remembrance of Allah alone that the heart of man finds rest—those who believe and act righteously, joy is for them, and a blissful home to return to Jannah (13: 28-29)

This message was preached by all the Prophets of Allah, who guided man to the right path. But man veered away from the right path again, due to distorted views, That was why prophet Muhammad was sent to restate the original message and guide man back to the right path as in its final form and arranged to preserve it for all time as enshrined in the Qur'an.

Allah Almighty created man to serve Him, meaning that men should believe in the One Lord and do well. This is the main objective of human life. Allah says, “I have not created men except that they should serve Me” (Quran, 51:56). This life is a preparation for the Hereafter the 'Eternal Home' (Jannah) that will not be going to an end to which all human beings ultimately go. So, Muslims are required to observe righteousness in their daily life, based on Quranic teachings, like eating halal food, wearing modest clothing, performing prayers, giving alms, etc, because of the fact that they live for Allah alone. And to those who aim to attain nearness to Him, Almighty Allah sees to it. The reason of knowing and understanding of the creation of this world and human existence by Muslims is due to the fact that Allah Almighty has given us the book Quran which contains all the guidance related to the life of this world and the hereafter too (Quran Reading, 2023).

Tawhid: The Bedrock of Islam

Tawhid is a revolutionary concept and constitutes the essence of the teachings of Islam. It means that there is only one supreme Lord of the universe. He is omnipotent, omnipresent and the sustainer of the world and of mankind.

Truly, Allah said:

O, Mankind: worship your Lord, Who created you and those before you, so that you may ward off evil; Who has made the earth a resting place for you, the sky a canopy and Who causes water to pour down from the heavens, thereby producing fruits as food for you. So do not set up rivals to Allah, when you know better. (Qur'an 2:21-22)

This is the basic tenet to which Muhammad asked humanity to adhere to, with affirmation from Qur'an.

"I affirm that there is none worthy of worship except Allah, that He is One, sharing His authority with no one, and I affirm that Muhammad is His Servant and His Prophet."

This shows the importance of metaphysical concept and answers the riddles of the universe. It points to the supremacy of law in the cosmos and the all-pervading unity behind the manifest diversity. It presents a unified view of the world and offers the vision of an integrated universe. It is a mighty contrast to the piecemeal views of the scientists and the philosophers and unveils the truth before the human eye. After centuries of groping in the dark, man is now coming to realize the truth of this concept, and modern scientific thought is moving in this direction (Simply Islam, 2023).

Security, the state of security and challenges in Nigeria

Insecurity

One of the causes of insecurity is the extremist view of the Islam. This has been as a result of marginalization in religious bigotry, islamophobic sects, economic stagnation, negative emotions, ignorance and illiteracy leading to domestic social unrest and acute sectarian rifts or ethnic tensions among citizens.

Islam prohibits violence and promotes peace and justice: This Quranic verses that support the claim that Islam is a true religion of peace and tranquility (Kompier, 2016). Allah the Almighty said:

“O you who believe! stand out firmly for justice, as witnesses to Allah, even as against yourselves, or your parents, or your kin, and whether it be (against) rich or poor: for Allah can best protect both. Follow not the lusts (of your hearts), lest you swerve, and if you distort (justice) or decline to do justice, verily Allah is well-acquainted with all that you do.”
[Quran, 4: 135]

Also, the Surah of Surat Al-A'raf has made emphasis to solve insecurity reminding Muslim the role that Shayṭān (Satan) plays to our insecurities and forbids al-fawā'ish (great evil sins). As many groups are



guided into error; (because) surely they took the Shayâ`în (devils) as auliyâ' (protectors and helpers) instead of Allah, and consider that they are guided (Sûrat Al-A`râf, 7:30). And Allah reminds us of the right course, namely, to say:

*Verily, my Wali (Protector, Supporter, and Helper, etc.)
is Allah who has revealed the Book (the Quran),
and He protects (supports and helps) the righteous.
[Sûrat Al-A`râf, 7:196]*

Allah reminds us:

O Children of Adam! Let not Shay`ân (Satan) deceive you, as he got your parents out of Paradise, stripping them of their raiments, to show them their private parts. Verily, he and qabîluhu (his soldiers from the Jinn or his tribe) see you from where you cannot see them. Verily, We made the Shayâ`în (devils) auliyâ'(protectors and helpers) for those who believe not. (Sûrat Al-A`râf, 7:27)

Remember that Allah is Al-Ra`mân. Insecurities do not vanish overnight and many times they can be only minimized and managed. Our hopes should be placed on Allah and asking for Allah's forgiveness and help to seek refuge with Allah from Shay`ân; then we should make du`â' to Allah to help you overcome insecurity in the country (Kompier, 2016).

High level of corruption and indiscipline as a result of quest for Wealth Creation and acquisition

Nigeria still wallows in abject poverty, high level of unemployment, insurgency, corruption and starvation in spite of her huge resources endowment. This has greatly affected her quest to improved quality of life of her citizen and in other to successfully enhance meaningful development, effective strategies must be evolved with personnel that will religiously and faithfully implement it as most resources meant for development is converted for personal usage. Over the years, high level of corruption, kidnapping, insurgency, and indiscipline is another barrier to development. Nigeria state is corrupt, managed by corrupt leaders which have led to insurgency in the land, those who have made the state an instrument of capital accumulation, unlawful wealth creation rather than using it to project the interest of the citizenry. . This is evident where executive capacity responsible for the formulation and implementation of the plan for the development of the country is singularly interested in enriching his pockets without consideration for the citizenry and development (Lawal & Abe, 2017). It is worth noting that, the sun, moon, stars, etc. do God's bidding and are neither punished nor rewarded. Man faces the consequence of his choices and actions by way of punishment and reward. A true Muslim must avoid haram elements and Obedience to Divine Law and worship God by submitting to the moral and religious laws prescribed to him to treat son of Adam as himself through placing hopes in securing Allah's pleasure is thus the very foundation of all for wealth, prestige, and development.

Lack of good governance: the lack of good governance militates against national development. Where there is no good governance, development becomes a mirage. This is as a result of bad leadership in the country. Most of our leaders have no sense of commitment to development.

Diversition of Funds for management of the Security Sector: The mono-economic base of the country. With sole dependence on Oil Sector. The country largely depends on crude oil for her survival to the detriment of other resources. All other sectors of the economy are neglected like security and education. Majorly, the country will solely aim at settling fuel subsidies and oil marketers which is only beneficial to few elements in the country and the resources which could have been to setup modern infrastructure to secure the land and border of the nation.

Greed

Greed has caused a lot of crises in the world, including Nigeria. It is because of greed that political leaders embezzle from the funds they are supposed to use for national development for their own selfish ends.

Poor Youth Empowerment and Lack of Morals

Poor youth empowerment is a contributor to corruption. Internet fraud, sexual harassment by male and other bad acts are because Nigerians lack understanding on the importance of youth empowerment. When parents



and governments empower youths both financially and morally, the level of corruption among them will diminish.

National development and Challenges

High Level of Poverty and Unemployment: Nigeria still wallows in abject poverty, high level of unemployment and starvation in spite of her huge resources endowment. This has greatly affected her quest to improved quality of life of her citizen and in other to successfully enhance meaningful development, effective strategies must be evolved with personnel that will religiously and faithfully implement it (Lawal & Oluwatoyin, 2011).

Turn off to Foreign Investors: So many crises in Nigeria today are as a result of corruption. The insecurity in Nigeria brought about by Boko Haram and Islam State of West African Province (ISWAP) is a consequence of corruption. The attacks by insurgents have caused disorderliness in Nigeria and seriously affected the economy of the country. It has greatly repelled intending investors and by extension, affected the economic status of the country.

Lack of sufficiency of knowledge, infrastructure and equipment: Seniyi (1998) opined that the various developmental strategies failed because of lack or insufficiency of knowledge and equipment to carryout activities that agriculture as an enterprise demands. But more to this is the commitment to the implementation of the raised developmental strategies, because most of the strategies ever adopted had been the same the major differences are just the change in the name given each strategy. Some of the previous development plans failed because; there was little or no consultation of the general public. Planning is supposed to involve even the peasants in the villages.

Lack of relevancy and implementation of strategy for Economic Policy: Another challenge is the lack of relevancy and implementation of strategy adopted for development, considering the main purpose of development as bringing about the total well-being of people; we then say to what extent has the people benefited from the project? There is therefore a need to set priorities when talking and designing development strategies aimed at the welfare of its citizenry.

Instability and continuity of Government policies: Over the years, successive government comes into power and abolished previous policies and project started by their predecessors, as this evidently affects the growth of the nation. Although, economic reforms such as free enterprise, indigenization, nationalization, import substitution, later privatization, and commercialization free export zone were either introduced or implemented; rather sad, these policies change immediately new government comes into power. Resources which is supposed to be used to continue developmental projects is diverted for another unsuccessful project leading to waste of scarce resources both infrastructural and financially (Oye, 2014).

National Development

Development is critical and essential to the sustenance and growth of any nation as it improves socio-political and economic stability. **That is** essential and critical to growth and sustenance of any country. Many scholars have come up with varying views of development.

Development is the transformation of community into socially, economically, politically, educationally, orderly, and materially desirable conditions, with the aim of improving the quality of life of the people. It is also referred to as the uniform distribution of resources, the integration of the people into national economy; it is a socio-economic process which seeks to bring about a more equitable distribution of resources and income within the society (Oye, 2014)

Gboyega (2003) captures development as an idea that embodies all attempts to improve the conditions of human existence in all ramifications. It implies improvement in material well being of all citizens, not the most powerful and rich alone, in a sustainable way such that today's consumption does not imperil the future. It also demands that poverty and inequality of access to the good things of life be removed or drastically reduced. It seeks to improve personal physical security and livelihoods and expansion of life's chances.

According to **Lawal & Abe (2017)**, National development is seen as the overall development or a collective socio-economic, political as well as religious advancement of a country or nation. This is best achieved through development planning, which can be described as the country's collection of strategies mapped out by the government. The promotion of national development is crucial through citizenship participation indignity in order to achieve cooperation of all communities in the development process.

Islamic principles as panacea to challenges in security and national development in Nigeria



One of the causes of insecurity is the extremist view of the Islam. This has been as a result of marginalization in religious bigotry, islamophobic sects, economic stagnation, negative emotions, ignorance and illiteracy leading to domestic social unrest and acute sectarian rifts or ethnic tensions among citizens.

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Remember that Allah is Al-Ra'mân. Insecurities do not vanish overnight and many times they can be only minimized and managed. Our hopes should be placed on Allah and asking for Allah's forgiveness and help to seek refuge with Allah from Shay'ân; then we should make du'â' to Allah to help you overcome insecurity in the country (Kompier, 2016).

Benefits of Worshipping Allah as permanent purpose for National development

Obeying divine laws as a manual for human existence is unquestionably vital to man's lives. Islam is a way of life that all Muslims should live. It is not merely a label that we wear superficially. In Surat Al-Baqarah, Allah orders those who believe to accept Islam whole-heartedly. In other words, the Muslim's permanent purpose is to obey Allah, to submit to Allah, to carry out His orders, and to keep in continuous contact with Him through prayers (five times a day), through fasting (one month a year), through charity (as often as possible), and through pilgrimage (once in one's life with good intentions lead us to a golden **future** (Najmeddine, 2022; Sumer, 2016).

Worshipping God through obedience is important because it brings us tranquility and well-being in this fleeting worldly life while preparing us for the next. For as we sow here, so shall we reap there. When a Muslim worships Allah Almighty, he or she actually accepts His Lordship which is the same as they did on the oath that was taken before their birth. Thus, the more a Muslim worships Allah the closer to Him he or she gets and the meaning of existence starts emerging.

In another verse of Holy Quran, Almighty Allah says:

“Satan's plan is to incite enmity and hatred among you with intoxicants and gambling, and hinder you from the remembrance of Allah and regular prayer. Will you not then abstain?” (Quran, 5:91)

Also, the following verse says:

*“Prayer checks wickedness and injustice,
and remembering God is more important.” (The Qur'an: 29:45)*

Islam thinks of man as created to worship God, to seek proximity to Him and to know Him, all of which give him power. But knowledge and power are not the ultimate goal, nor is self-purification.



The Qur'an, Sura Al-Insan, Verse 3: We have shown man the way to be grateful or ungrateful.” (76: 3)

In the above verses, Allah Almighty informed us that when humans indulge in hatred of each other then they will definitely select hating others as a purpose of their life, which will turn them from the true purpose of their existence and that is the remembrance of Allah. Therefore, in order to fulfill the purpose of knowing the Lord, a Muslim needs to refrain from evil in the same extent to which he or she is inclined towards doing well (Qur'an Reading, 2023).

However, Islam saves Muslims from the trouble of asking the question, because Islam makes it clear, from the very beginning, that the permanent purpose of the Muslim in this life is to obey Allah in order to go to Paradise in the second life. We should know that the only way for our salvation in this life and in the hereafter is to know our Lord who created us, believe in Him, and worship Him alone as he has commanded us to believe in, and practice it for good.

Worshipping Allah as an Aim of Man on the Earth for National Development

Although for many of us, we realize that we have to pray, do good deeds, worship Allah and abstain from evil, we continue to go beyond the bounds, disobey and violate the commands of Allah while knowing the consequences, yet claim that our purpose is to worship Allah. Life is just a short stage of our life. Then there is the other life. The boundary between the first and second life is the death stage, which is a transitory stage to the second life. The type of life in the second stage a person deserves depends on his deeds in the first life. At the end of the death stage comes the Day of Judgment. On this day, Allah rewards or punishes people according to their deeds in the first life.

Irrespective of how much fame, wealth, material possession, freedom, liberties, entertainment, and progress – you name it, one has acquired. None of it, indeed not even all of it, can buy the much sought after 'inner peace'. Real development is achieved when we stick truly with Islamic principles to help your neighbors as yourself in line with Islamic hadiths and Qur'an text as the purpose of our creation was not only to merely offer the Salah and fast in Ramadan and give Zakat and go for Hajj, rather, these are our duties that we must do. Our purpose as a whole is to be conscious our servitude, gratitude and sincere worship to the Creator, Al-Mighty Allah (SWT). When we fulfill such noble duty, our hearts find tranquility, peace, reward from Allah and there will be no such thing as problem in our lives, no worries that occupy our mind (Idris, 2022).

Commitment of Leaders: The role of leadership in development cannot be overemphasized, all efforts towards development must be coordinated and directed by the leaders, therefore, the leaders must be development conscious, have genuine interest for development and the political will to propel such development. The development requires total commitment on the parts of the leadership. The need for discipline and honesty on the part of the project implementers cannot be compromised; such officials should show enough discipline, interest, willingness, dedication and honesty. Without these attributes and the will to pursue set economic goals, all other ingredients of development present would amount to nullity (**Lawal & Abe, 2017**).

Stability and continuity of policies: Similarly, another way forward that this work looks at is that the stability and continuity of policies encourage investment and propel development as against party politics and personal aggrandizement. The revamping of the agricultural sector and for a diversified economy from oil sector are also steps towards the development of a country.

Importantly, citizenship should be promoted over indigeneity in order to achieve cooperation and participation of all communities in the development process. Allah the Merciful highlights these steps in order to seek help in whatever turbulence, insecurity we encounter: patience and prayer. Without these essential solutions, we will be overwhelmed with challenges without solutions.

To now address this security challenges adopting Islamic principles for purpose of life existence it is pertinent to consider and explore the structures, tenets and teachings of an ideal Islamic society and its ways of life and how the structures, tenets and teachings can be adopted as panacea using Quran and Sunnah.

Quran 3:110 says: 13

“You (true believers in Islamic Monotheism, and real followers of Prophet Mohammed and his Sunnah) are the best of communities ever raised up for mankind: you enjoin the good, forbid the evil, and believe in Allah...”

Islam totally discourages all sinful and unlawful accumulation of wealth. Prophet Muhammad (PBUH)



enjoin Muslims to desist from illegal enrichment of themselves when he was reported to have said:

“The flesh that grows out of unlawful income has no place in the hereafter but hell”

The hadith further indicated that Prophet (PBUH) was said to have frowned at a zakat collector who was involved in the abuse of office by enriching himself illegally. Prophet (PBUH) remarked that:

“What rights have you to put aside something that does not belong to you. If you were to remain in your father's house would you get what you are taking?”

The Holy Qur'an further differentiates between people on the basis of their behavior and ethics in relation to corruption. *Quran 38:28 states:*

“Shall we treat those who believe and work deeds of righteousness, the same as those who do mischief on earth? Shall we treat those who guard against evil, the same as those who turn aside from the right?”

From this verse and hadith, characteristics of an ideal Islamic society was revealed by Allah, namely: Enjoining good, forbidding evils and having faith in Allah. Islam identifies corruption as a moral and ethical problem of an individual. It also provides the ability to foster self – restrain through the knowledge of Quranic ethical framework for human behavior, e.g. by applying justice, equity, honesty, fear of Allah, decency, moral values, accountability and characteristics if thoroughly and sincerely adopted will with no doubt be a panacea for security challenges and national development.

Conclusion and Recommendations

It is such a pity, that we fail to take heed of the Omniscient and Omnipotent God's enlightened guidance. If the accurate measure of a worthy and meaningful life is to secure happiness, then the dark and ugly truth of our wasteful existence begins to dawn upon us as we age. Thus Islam's eloquent answer to the meaning and purpose of life fulfills the cardinal human need for national development. Islam is the response to humanity's search for meaning. There is need for need for attitudinal change through imbibing our noble duty to serve Allah (SWT) and imbibing of Islamic injunctions that the world is just a phase, as every individual will reap the fruit of his labour on earth and after death, accumulated resources will never be buried when you give up the ghost. Also there is need to educate people to produce better believers, law abiding responsible citizens with high morals and characters living peacefully in the society as community members having strong faith, performing good deeds, and have a sense of accountability to Almighty Allah. The purpose of creation for all men and women for all times has been one: to know and worship God as it brings tranquility and well-being, and no nation can develop when they believe in free will disobeys the code of life as outlined in the Qur'an. Allah has guided people to the purpose of life that is worshipping Him and seeking His pleasure with the Qur'an to fulfill this purpose of pleasing Almighty Allah by following Allah's commands given in Quran will give directions to all our answers on the purpose of life which is the cardinal human need for national development.

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INSTRUCTIONAL COORDINATING STRATEGIES AS A CORRELATE OF TEACHERS' PRODUCTIVITY IN ONDO STATE PUBLIC SECONDARY SCHOOLS, NIGERIA

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Abstract

The shortcomings of teachers' instructional performance and students' academic performance seems to weaken the quality of instructional coordinating strategies in public secondary schools. This study was carried out to investigate the relationship between instructional coordinating strategies and teachers' productivity in public secondary schools in Ondo State. Descriptive research design of the survey type and ex post facto design were adopted for the study. The sample consisted of 864 respondents comprising 754 teachers and 110 principals/vice principals sampled using multi-stage, purposive and simple random sampling techniques. Three research questions guided the study and five hypotheses were tested. Two instruments titled Instructional Coordinating Strategies Questionnaire (ICSQ) and Teachers' Instructional Task Performance Questionnaire (TIPQ) were used for data collection. Students' results were collected using Students' Academic Performance Inventory (SAPI). Frequency count, percentages and mean were used to answer the research questions while Pearson Product Moment Correlation was used to test the hypotheses at 0.05 level of significance. Findings from the study revealed that instructional coordinating strategies were moderately used by the principals ($\bar{x} = 3.20$) and teachers' instructional tasks performance were at moderate level ($\bar{x} = 3.30$). There were significant relationships between instructional coordinating strategies and teachers' productivity ($r_{(862)} = 0.910, p < 0.05$). The paper recommended that the State Ministry of Education and Teachers' Registration Council should organize periodic seminars for principals and vice principals to update and improve their skills in coordinating teachers' instructional performance.

Keywords: Instructional coordination, teachers' instructional performance, students' academic performance, teachers' productivity.

Introduction

Teachers' productivity can be measured by the level of duties performed by teachers within the school system and the quantity and quality of students' performance in achieving the desired educational goals. It is not uncommon that some teachers who would have been very productive in the school seem to be distracted by other engagement outside their instructional duties which in turn consume most of their instructional time (Arogundade, Aladejebi, & Afolabi, 2017). Besides, the perceived low level of teachers' instructional performance could be attributed to excessive workload, insufficient teaching and learning resources in the library and science laboratory and inadequate usage of instructional materials seemed to hinder effective teaching-learning process (Ayeni & Akinfolarin, 2014). The congestion of students in the classrooms due to inadequate infrastructure have been partly responsible for the difficulty in managing in disruptive behaviour of students during the teaching – learning process.

The resultant effect of inadequate instructional resources and teachers' work overload seem to be responsible for the dwindling performance of students in the West African Senior School Certificate Examination (WASSCE) results between 2014 and 2019 which revealed that the agitations of education stakeholders in Ondo state has not been fully met. The average performance of students based on the minimum requirement of five credit level passes including Mathematics and English Language were below 50%.

Instructional coordinating strategy is also crucial to the achievement of instructional objectives



and the goals of education. Coordination is the orderly arrangement of group efforts to provide unity of action in pursuit of a common purpose. Instructional coordination is the process of unifying human and material resources with one another so that the teaching and learning processes can produce the desired outcomes (Ayeni & Akinfolarin, 2014). Effective coordination is prerequisite to the success a school may attain because the school is a system with many sub-units interacting with one another to achieve a common goal. Principal coordinates human and material resources of the various units within the school. Despite that, the major interacting elements in school are teachers and students. The students enrolled into the school are transformed over the period of their training through principals' coordination of teaching and learning activities, usage of teaching and learning resources, adequate supervision and evaluation of instructional activities on periodic basis. After specific period, the students are transformed into output as educated persons expected to be useful for themselves and to fulfill the expectations of the society. However, Ayeni and Akinfolarin, (2014), revealed that principals made effort to group teachers into departments which are managed by the heads of departments while coordinating teachers' instructional performance has not produced the desired outcome in terms of students' performance. In this wise, the principal is expected to be effective in coordinating teachers and students to achieve the set educational objectives. Hence, it is of paramount importance that principals effectively coordinate the quality of instruction given to secondary school students if the goal of secondary education in Ondo State is to be achieved.

Principals ensure that the school, the staff and the resources within are organised and managed to provide an efficient, effective and safe learning environment. This include teachers' experience and education, the time spent during school hours, learning devices, learning facilities, and the school community are all essential to provision of quality education without which the objectives of education might be forsaken. Instructional coordination focuses on the activities and efforts of the workers in educational organization so that educational goals are achieved. The process involves the procurement or recruitment, staffing, welfare, maintenance, training and retraining, placement, promotion, motivation relationship, compensation or rewards, transfer and discipline of staff (Omebe, 2014).

On the other hand, the material and physical aspect of instructional resource are the devices through which knowledge, skills, attitude, ideas, beliefs and values got transmitted to the learner by the teacher in order to ease teaching-learning process (Awolaju, 2016). These devices broadly classified audio, visual, audio-visual and computer based are used to enhance teaching and learning process. Other aspect include the learning facilities such as classrooms, offices, school libraries, laboratories, workshops, sport equipment, sick bay, toilets and the likes. These resources though limited can be effectively and efficiently managed, harmonized and coordinated by the school management. Usman (2016) observed that the availability of these resources alone does not guarantees effective performance of school but the adequacy and effective utilisation does.

The coordination of teachers' and students' activities is crucial to effective implementation of curriculum. Principals are instructional managers that manages both human and material resources that are used in the delivery of school curriculum to ensure high quality education for the learners. Therefore, they are expected to create clear academic goals, motivate staff and students to work towards those goals, monitor progress, and align teaching and learning activities to achieve the desired academic outcomes (Hallinger, 2005). The task requires that the principals engage in managing functions such as planning, organising, supervising, and monitoring teaching and learning in the school. Furthermore, the functions demand that the principal effectively coordinate the standard of individual teacher instruction, the eminence of student achievement, and the level of efficiency in school functioning (Firmaningsih-Kolu, 2015). In addition, principals coordinate and harmonise activities of the various departments and units in the school system to improve the quantity and quality of the school products. While implementing the curriculum, principals deploy teachers into their respective area of specialization, acquaint teachers with curriculum implementation, provide teaching resources, maintain learning facilities and supervise students' engagement in the classroom as well as monitor their progress to sustain the level of achievement and the over success of the school.

Instructional coordination is crucial to the achievement of instructional objectives and the goals of education. Instructional coordination involves unifying human, material and physical resources in the teaching and learning processes to produce the desired learning outcomes. Achieving these goals require that



principals effectively coordinate teachers' and students' activities by deploying teachers into their respective area of specialization, acquainting teachers with curriculum implementation, providing teaching resources, maintain learning facilities and supervising students' engagement in the classroom as well as monitor their progress to sustain the level of achievement and the overall success of the school.

A study by Ayeni and Akinfolarin (2014) examined the efficacy of principals' coordinating strategies on teachers' instructional performance, students' learning outcome and the challenges in instructional management in public secondary schools in Ondo State. The study revealed a low significant relationship between principals' coordinating strategies and teachers' instructional performance even when teachers were supervised and monitored by the heads of departments. The results also showed that there is no significant relationship between teachers' instructional performance and students' learning outcome because teachers had excess workload, inadequate learning resources in the library and science laboratory and there was low usage of instructional materials by the teachers during teaching-learning process.

Tety (2016) in a cross sectional survey using semi-structured questionnaire discovered that instructional materials were crucial to teachers' and students' performance but there were shortage of essential teaching and learning materials in schools which may determine the performance of students. It was found that schools that were better coordinated with adequate instructional materials and instructors performed better than schools lacking essential instructional materials. The study further revealed that most schools with acute shortage of instructional materials attempted to improvise or purchase some material but the supply was minimal compare to what is needed for effective instruction delivery. The condition adversely affected the academic performance of students.

The importance of instructional coordination was further stressed by Heyd-Metzuyanin, Smith, Bill and Resnick (2019) that explorative participation of learners in classroom discussion and downplay coordination strategy foster internally inconsistent engagement to a more explorative engagement, instructional actions and promote the goals of Practices for Orchestrating Mathematical Discussions (5Ps) and Accountable Talk (AT) and flexibly applied to the context of teachers' classroom instruction. The techniques showed that co-teaching is not just reflecting and co-planning, it is potentially valuable for teachers in the process of learning new practices. This underscores the importance of instructional coordinating strategy in the school system.

Statement of the Problem

The perceived shortcomings in teachers' instructional task performance and students' academic performance could be partly attributed to the excessive teachers' workload and insufficient instructional materials and overcrowded classrooms which may be responsible for the low quality of teaching – learning process. Also, education stakeholders have raised concern for quality instructions due to the dwindling performance of students in West African Senior School Certificate Examination (WASSCE) in Ondo State which showed that the average performance of students that obtained credits level passes and above in five subjects including English Language and Mathematics between 2014 and 2019 were below 50%.

The perceived shortcoming in coordinating of teachers' instructional performance seemed to have negative implications on teachers' productivity. It is not uncommon that some teachers still adopt inappropriate teaching techniques due to the inadequacies in principals' instructional coordinating strategies which may have accounted for the dwindling academic performance of students in secondary schools.

Research Questions

The following research questions were raised for the study:

1. How do teachers perceive principals' usage of coordinating strategy in public secondary schools in Ondo State?
2. What is the level of teachers' instructional task performance in public secondary schools in Ondo State?
3. What is the level of students' academic performance in public secondary schools in Ondo State?

Hypothesis

The following hypothesis was generated for the study:

1. There is no significant relationship between principals' instructional supervision and teachers' productivity.



Methodology

The researcher adopted the descriptive research design of the survey type. Survey design enabled the researcher to capture large size of teachers' population by using questionnaire for data collection and analyse data for the purpose of describing existing characteristics and making generalization concerning instructional management strategies and teachers' productivity in public secondary schools in Ondo State, Nigeria. In addition, the study adopted *ex-post facto* design as existing data on students' academic performance was used to establish the relationship between instructional management strategies and teachers' productivity

The population of this study comprised all principals, vice-principals, and teachers of 304 public secondary schools in Ondo State, Nigeria. The sample for the study was 864 respondents comprising 55 principals, 55 vice-principals, and 754 teachers in 55 public secondary schools representing 40% of the existing 304 public secondary schools in Ondo State. Multi-stage sampling procedure was adopted which comprised proportionate, purposive and simple random sampling techniques.

The research instruments for this study were developed by the researcher. Two self-constructed questionnaires and students' academic performance proforma were used for this study. The instruments are titled: Instructional Coordinating Strategies Questionnaire (IMSQ), Teachers' Instructional Task Performance Questionnaire (TIPQ) and the Students' Academic Performance Inventory (SAPI). The three research instruments were submitted to three senior lecturers in the Department of Educational Management and two experts in Tests and Measurement Unit, Department of Guidance and Counselling in the Faculty of Education of Adekunle Ajasin University, Akungba-Akoko for modification, comments and guidance. The research instruments were trial tested in two public secondary schools outside the sample of the study in Akoko South East Local Government Area of Ondo State. Copies of the instruments were administered to 15 teachers, one principal and one vice principal in each of the selected schools. Data obtained from the instrument were subjected to Pearson Product Moment Correlation. This yielded 0.97 correlation coefficient. Data obtained from Teachers' Productivity Questionnaire (TIPQ) were also subjected to test-retest method of estimating reliability coefficient to test the stability of the instruments using Pearson Product Moment Correlation. The obtained index of coefficient 'r' was 0.87. Data collected after administration of instruments were analyzed using descriptive statistics and inferential statistics. Descriptive statistics was used to answer the research questions and Pearson Product Moment Correlation (PPMC) was used to analyse hypothesis at 0.05 level of significance.

Results

Research Questions One: How do teachers perceive principals' usage of coordinating strategy in public secondary schools in Ondo State?

In providing answers to research question 4, data collected through items on instructional coordinating strategy were analysed and presented in Table 9

**Table 1: Instructional Coordinating Strategy**

S/N	Items		Response				\bar{x}
			SA	A	D	SD	
1	Teachers are placed on jobs according to their disciplines in my school.	F	422	257	42	33	3.4
		%	56	34.1	5.6	4.3	
2	Subjects are allocated to teachers based on areas of specialisation in my school.	F	455	246	35	18	3.4
		%	60.4	32.6	4.6	2.4	
3	Instructional materials are adequately provided for teaching and learning in my school.	F	216	362	140	36	3.0
		%	28.7	48	18.6	4.8	
4	Principals ensure that adequate instructional materials are effectively used by teachers in my school.	F	308	181	194	71	3.0
		%	40.9	24	25.7	9.4	
5	Instructional equipment are regularly maintained to enhance teaching and learning in my school.	F	208	362	142	42	3.0
		%	27.6	48	18.8	5.6	
6	Learners are actively engaged in curricular activities in my school.	F	347	314	70	23	3.3
		%	46	41.7	93	3.1	
Av. of Means		F	326	287	103.8	37.2	3.2
Percentage Average		%	43.3	38.1	13.8	4.9	

Source: Field Work, 2022.

The grand mean of 3.2, as shown in Table 1, implied that the highest performed tasks by principals which were above the criterion mean were teachers' job placement ($\bar{x}=3.40$), subject allocation ($\bar{x}=3.40$) and **learners' engagement during class instruction** ($\bar{x}=3.30$), while the least performed tasks were **provision of instructional materials** ($\bar{x}=3.00$), the **use of instructional materials** ($\bar{x}=3.00$) and **maintenance of instructional equipment** ($\bar{x}=3.00$). This indicated that the level of teachers' perception of principals' usage of instructional coordinating strategy was moderate in public secondary schools in Ondo State, Nigeria.

Research Question 2: What is the level of teachers' instructional task performance in public secondary schools in Ondo State?

Table 2



Teachers' Instructional Task Performance

S/N	Items		Response				
			SA	A	D	SD	\bar{x}
1	Teachers prepare lesson notes according to the syllabus.	F	83	27	0	0	3.8
		%	75.5	24.4	0	0	
2	Teachers attend their lessons punctually and regularly	F	46	54	10	0	3.2
		%	41.8	49	9.1	0	
3	Teachers possess sound knowledge of the subject matter.	F	43	65	2	0	3.4
		%	39.1	59.1	1.8	0	
4	Teachers apply appropriate teaching methods.	F	41	61	8	0	3.3
		%	37.3	55.5	7.2	0	
5	Instructional materials are effectively used by teachers.	F	13	63	30	4	2.8
		%	11.8	57.3	27.3	3.6	
6	Teachers ensure active participation of students in learning activities.	F	27	77	6	0	3.2
		%	24.6	70.0	5.4	0	
7	Teachers are effective in classroom management	F	53	50	6	1	3.4
		%	48.2	45.5	5.5	0.8	
8	All teachers conduct continuous assessment for students.	F	68	36	6	0	3.6
		%	61.8	32.7	5.5	0	
9	Teachers mark students' class activities as appropriate	F	27	73	10	0	3.1
		%	24.5	66.4	9.1	0	
10.	Teachers mark students' written work regularly	F	22	74	12	2	3.1
		%	20	67.3	10.9	1.8	
11.	Performance feedback are given to students promptly.	F	21	78	11	0	2.9
		%	19.1	70.9	10	0	
12.	Teachers complete the syllabus in their subjects within the stipulated time.	F	22	55	32	1	2.9
		%	20	50.1	29.1	0.8	
Percentage Average/ Av. of Means		F	38.3	59.4	11.1	0.6	3.3



The data presented in Table 2 revealed a grand mean of 3.3 which implied that the highest performed tasks which were above the criterion mean were **preparation of lesson notes** ($\bar{x}=3.80$), continuous assessment ($\bar{x}=3.60$), knowledge of the subject matter ($\bar{x}=3.40$), classroom management ($\bar{x}=3.40$) and appropriate teaching methods ($\bar{x}=3.30$) while the least performed tasks were punctuality and regularity ($\bar{x}=3.20$), learners' participation during class instruction ($\bar{x}=3.20$), marking of class exercise ($\bar{x}=3.10$), marking of students' written work ($\bar{x}=3.10$), performance feedback to students ($\bar{x}=2.90$), completion of the syllabus ($\bar{x}=2.90$) and use of instructional materials ($\bar{x}=2.80$).

Table 3
Level of Students' Academic Performance in Secondary Schools

Academic Sessions	No of Candidates Registered	No of Candidates With 5 Credit Including English and Mathematics	No of Candidates With 5 Credit Including English OR Mathematics	No of Candidates With 5 Credit without English and Mathematics	No of Candidates With less than 5 Credit	No of Candidates Without Credit	
2016/17	6180	Freq 3669 .% 59.4	1203 19.5	668 10.8	485 7.8	83 1.3	
2017/18	6272	Freq 2727 .% 43.5	1366 21.8	1086 17.3	901 14.1	192 3.0	
2018/19	5928	Freq 3352 .% 56.6	1329 22.4	660 11.1	534 9.0	53 0.9	
2019/20	6227	Freq 3084 .% 49.5	2039 32.7	612 9.8	451 7.2	41 0.7	
Total	24607		12832 52.3	5937 24.1	3026 12.3	2371 9.6	369 1.5

The data presented on Table 3 indicated that out of 24,607 students registered for WASSCE from 2016/2017 to 2019/2020 academic sessions. 12,832 students representing 52.3% had credits in a minimum of five subjects including English Language and Mathematics. However, 12.3% of the total registered students had 5 credits without a credit pass in English Language and Mathematics while only 1.5% of the students had no credit at all.

The result above indicated that the percentage of students who obtained the minimum of five subjects including English Language and Mathematics was moderate in Ondo State. The minimum of 5 credit passes including English and Mathematics which serves as the benchmark for admission into the Nigerian universities, thus, the percentage of students with 5 credits (52.3%) including English and



Mathematics denotes a moderate academic performance of secondary school students in Ondo State, Nigeria.

Research Hypothesis One: There is no significant relationship between instructional coordinating strategy and teachers' productivity.

To test the hypothesis, data collected on instructional coordinating strategy and teachers' productivity were extracted and subjected to Pearson Product Moment Correlation Coefficient at 0.05 level of significance. The result is presented in Table 4.

Table 4

Variables	N	Mean	SD	Df	r-cal	r-crit	Decision
Instructional Coordinating Strategy	754	3.220	3.521				
Teachers' productivity	110	3.750	3.546	862	0.910*	0.000	Rejected

The result in Table indicated that r-cal 0.910 is greater than r-crit 0.000. This implies that significant relationship existed between principals' instructional supervision and teachers' productivity at 0.05 level of significance and 862 degree of freedom. Therefore the null hypothesis of no relationship was rejected.

Discussion of Findings

The analysis on table 4 revealed that there was high significant relationship between instructional coordinating strategy and teachers' productivity. The r-calculated (0.910) indicated that there were significant influence on teachers' job allocation, subject allocation and **learners' engagement during class instruction**. In contrast with the findings of this study, Ayeni and Akinfolarin (2014) discovered a low significant relationship between principals' coordinating strategies and teachers' instructional performance. The results showed that there was low significant relationship between principals' coordinating strategies and teachers' instructional performance because teachers had inadequate teaching resources, low usage of instructional materials during teaching-learning process, lack of adequate and well equipped offices for teachers and fairly conducive classrooms.

The inadequacies of instructional coordinating strategy discovered on provision of instructional materials, usage of instructional materials and maintenance of instructional equipment was in agreement with Tety (2016) which discovered that instructional materials were crucial to teachers' and students' performance but there were shortage of essential teaching and learning materials in schools which may determine the performance of students. It was found that schools with adequate instructional materials and instructors performed better than schools lacking essential instructional materials. The study further revealed that the supply was inadequate for effective instruction delivery. The shortfalls on coordinating strategies discovered from the aforementioned studies may account for the moderate level of teachers' instructional performance and students' academic performance.

Conclusion and Recommendations

Based on the analysis of data and interpretation of results, it was concluded that instructional coordinating strategies moderately enhanced teachers' productivity. Based on the findings and conclusions drawn from this study, the following recommendations were made:

1. The State Ministry of Education and Teachers' Registration Council should organize periodic seminars for principals and vice principals to update and improve their skills in coordinatng teachers' instructional performance.
2. The State Government through the Ministry of Education should provide adequate teaching and learning resources to strengthen teachers' instructional performance in public secondary schools.
3. Principals should create a platform for professional interactions to commend outstanding teachers'



instructional performance and discuss pertinent problems of instructional practice and possible solutions.

4. Adequate provision and maintenance of instructional materials/equipment should be made by the principals to enhance teachers' productivity

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INFLUENCE OF SCHOOL MANAGEMENT ON TEACHERS' EFFECTIVENESS IN SECONDARY SCHOOLS IN ONDO WEST LOCAL GOVERNMENT AREA OF ONDO STATE BY

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ABSTRACT

Management of schools which includes effective communication, supervision of instructions, maintaining discipline among others are required for attaining educational goals and nation building at large. This research was set out to investigate the influence of school management on teacher's effectiveness in secondary schools in Ondo west local government area of Ondo state, Nigeria. The research design is Descriptive, of the survey type. A questionnaire containing 19 items was personally designed by the researcher, validated by scholars and administered to 25 respondents which includes five teachers from each of the five schools randomly selected from Ondo West Local Government area of Ondo State. Findings of this research showed that Supervision of teachers on choice of textbooks is low in most schools. Also 64% of the principals are not straight forward in their dealings, only 42% gave honest financial report of school expenses, 56% do not take advices from teachers. However a good number of principals participate in school activities, carry teachers along in planning of school activities, hold meetings and these were able to get teachers cooperation to a large extent. 98% of teachers in Ondo west local government area possess teaching qualification. The researcher hereby recommends that Principals should avoid communication gaps, they should monitor teacher's activities closely, supervise method, materials and content of instructions.

Keywords; Management, Effectiveness, Influence, Principals, Teachers.

Introduction

Teachers' effectiveness in delivery of their services as required of them largely depends on the way the school is being managed. Managing a school is all encompassing ranging from supervision of instruction, communication, employment of qualified teachers, maintaining discipline and the likes. The school head or administrator is concerned with implementation of educational plans, programs or policies in the school system. Peretomode (2000), stated these functions elaborately as follows;

1. Selection of best persons with appropriate abilities to do the job. This can be done through interview whether through written or oral one.
2. Ensuring training and development of workers to enable them remain Current and vibrant in order to be able to achieve their optimum potential
3. Establishing cooperation between self and staffs with established standards and methods or procedures.
4. Allowing or letting staffs know the jobs they are to do i.e. job specialization and specification.
5. Ensuring that staff have clearly defined task in their daily activities
6. Wages, incentives should be an integral part of every job.

The above stated function is to be considered as important in school management for the objectives of the school to be achieved. The school system in Nigeria ranging from the primary through the secondary to the tertiary institution operates toward a predetermined objective and of which the teachers are key factors in achieving these objectives and the effectiveness of these teachers depend largely on the school management style of the school head.

Education brings about development of a nation socially, economically, politically etc. and without mincing word these are the educational goals which cannot be achieved without proper management of the school and for the sustainability of a school there should be creation and maintenance of positive managerial environment which will enhance effectiveness of the teachers. It is therefore of great importance to investigate how schools in Ondo state are being managed by school heads in order to enhance effectiveness of their teachers.



Statement of the Problem

Findings have made it known that most school heads are not effective in managing schools thereby losing teachers cooperation. Olaseni and Bakare (2018) noted that the method of communication between school heads and teachers has brought about poor exchange of ideas and have given room for dissatisfaction on the part of the teachers, grievances, most teachers don't feel concerned about the school policies and objectives according to them. When there is no close supervision of instruction and there is no discipline, then there is bound to be less effectiveness on the teachers' part. These are the reasons why the researcher intends to investigate the influence of school administration on teachers' effectiveness in secondary schools in Ondo west local government area of Ondo state Nigeria.

Research Questions

1. Do teachers in Ondo state secondary possess teaching qualification
2. Is there communication gap between school heads and the teachers?
3. What is the level of supervision of instructions in secondary schools in Ondo west local government area of Ondo state?
4. What is the level at which discipline is being maintained in secondary schools in Ondo state in order to enhance teachers effectiveness

Significance of the Study

This study will be of significance mostly to school heads and government educational agencies. It will help the school heads to maximize all means of clear communication to enhance information flow between them and teachers in order to enjoy teachers' cooperation, this research findings will also assist the school heads to take supervision of instruction and maintaining discipline seriously so that teachers can deliver instructions more effectively. Findings of this research will help government agencies to see need to employ teachers with relevant qualifications.

Research design

The researcher employs descriptive design of survey type to find out the influence of school management on teachers' effectiveness in Ondo west local government area of Ondo state. Nigeria.

Population of Study

The population of the study consist of teachers in secondary schools in Ondo West Local Government area of Ondo State, Nigeria.

Sample and Sampling Techniques

25 secondary school teachers were sampled randomly from among the teachers in Five secondary schools which were selected at random from Ondo west local government area of Ondo state. From each school, (5) teachers are required to provide necessary information as may be enquired of them through administration of questionnaire.

Research Instrument

The instrument used for this research study was questionnaire, titled "Questionnaire on school management which is designed to contain 35 items. The questionnaire is divided into section A, B, C and D. However, the variable of the research topic was divided into smaller unit and these variables were subjected to consideration in the data collection process. These variables are broken down into simples variables in order to make information obtained objective and data analysis easier. The sub-variables are; staffing, communication, supervision of instruction and maintaining discipline

Reliability of instrument

Test retest method was used for testing reliability of instrument. The questionnaire was given to 5 secondary school teachers outside the sample at two different times, the administered questionnaires were collected and the correlation between the two sets of scores of responses were calculated using the Pearson correlation coefficient. The value obtained was 0.70 which indicates that the variables have positive high correlation.



Administration of Instrument

The researcher visited the five schools in order to distribute the questionnaire to the respondent and each case the questionnaire were given to the respondent and on which instructions on how to respond to the items was specified. The researcher waited until the questionnaire was administered by the respondents and collected them.

Data Analysis

The researcher makes use of simple percentage in the analysis of collected data to determine the strength and weight of the responses. Simple arithmetical calculation were used to illustrate and make reasonable deduction from data obtained

Results And Discussions

Table1; Response to “staffing in secondary schools in Ondo state.”

s/n	Items	Responses	
		true	False
	A. Staffing	%	%
1.	I’m a professionally trained teacher	23 98%	2 8%

From table 1, the results shows that 98% of the teachers in Ondo west local government area of Ondo state went through the rudimentary training to become teachers while only 2% are not trained teachers.

Question 1: Do teachers possess teaching qualifications in Ondo west local government area of Ondo state?

Table 2: responses to rate of communication between school management and teachers



s/n	Items	Responses	
		true %	false %
	A. Communication		
2	The principal gives the account and report of school expenses in detail	11 42%	14 56%
3	Whatever the principal says is believed to be right	15 60%	10 40%
4	The principal either participate in school event to delegate responsibility	25 100%	- -
5	The principal encourages teacher's involvement in planning and implementation of program and school event, policies, decision making e.t.c	25 100%	- -
6	The principal has a cunning way of making teachers support his idea, he may not be straight forward at times	9 36%	16 64%
7	He asks for teachers opinion and advice but will not make use of them	11 44%	14 56%
8	Many at times I did not participate activities because I was not carried along	6 24%	19 76%
9	The principal and teachers don't hold meeting so often	1 4%	24 96%

From table 2, the results show that 42% of the principals gives the account and report of school expenses in detail while 48% does not. Whatever the principal says is believed to be right in 60% of the schools, thereby lauding his opinion on them while 40% of the school heads allow teachers to input their contributions.. The principal either participate in school event to delegate responsibility in 100% of the schools. The principal encourages teacher's involvement in planning and implementation of program and school event, policies, decision making in 100% of the schools. The principal has a cunning way of making teachers support his idea, he may not be straight forward at times in 36% of the schools while 64% of the principals are straight forward and open in their dealings. The school heads asks for teachers' opinion and advice but will not make use of them in 44% of the schools while in 56% of the schools, the school head take to advice of the teachers. 24% of teachers did not participate in school activities because they were not carried along while 76% were carried along in all school events. The principal and teachers don't hold meeting so often in 4% of the schools while there is regular meeting between school heads and teachers in 96% of the schools.



Question 2: Is there communication gap between school heads and teachers in Ondo west local government area of Ondo state, Nigeria?

Table 3; Responses showing level of supervision of instructions in schools in Ondo west local government area of Ondo state. Nigeria.

s/n	Items	Responses	
		True %	False %
	A. Supervision of instructions		
8	Students notebook are usually collected for necessary checking correction and marking	24 96%	1 4%
9	The head of departments do not usually see into whatever I teach the students.	5 20%	20 80%
10	Teachers are allowed to adopt any method that suit his/her interest to teach even with little or no teaching aids	20 80%	5 20%
11	Syllabus for each section is always completed because everything is planned and duly followed	22 88%	3 12%
12	Teachers alone are allowed without supervision to select curricular activities, choice of textbook and conduct students evaluation	9 36%	16 64%

The results according to table 3, Students notebook are usually collected for necessary checking correction and marking in 96% of the schools while in 4% of the schools, teachers just give notes to students without checking them again for corrections and marking. The head of departments do not usually see into whatever teachers teach the students 20% of the schools but 80% of heads of departments supervises and endorses teachers' content of instruction. Teachers are allowed to adopt any method that suit his/her interest to teach even with little or no teaching aids in 80% of the schools while in 20% of the schools teachers are guided into teaching methods to adopt for particular content of instructions. Syllabus for each section is always completed in 80% of schools because everything is planned and duly followed, while Syllabus for each section is not always completed in 20% of schools as a result of poor planning. Teachers alone are allowed without supervision to select curricular activities, choice of textbook and conduct students evaluation in 36% of the schools while in 64% of the schools there are prescribed textbooks and evaluation process is well monitored and scrutinized.

Question 3: What is the level of supervision of instruction in secondary schools in Ondo west local government area of Ondo state Nigeria?

**Table 4; Responses to level at which school management maintain discipline in secondary schools in ondo west local government area of Ondo state.**

s/n	Items	Responses	
		true %	False %
	A. maintaining discipline		
13	There is movement book for teachers	25 100%	- -
14	Teachers in this school act in accordance to the school laid down policies to avoid sanctions	24 96%	1 4%
15	The principal is less concern about the teacher activities	1 4%	24 96%
16	There is strict Supervision and monitoring Of both teacher's work and that of the students.	24 96%	1 4%
17	There is usually follow up to ensure that teachers carry out their assignment	23 92%	2 8%
18	There are laid down policies and ways of carrying out school programs and activities	25 100%	- -s
19	There is usually delegation of teachers' extracurricular work and duty	23 92%	2 8%

From table 4, findings shows that there is movement book for teachers in 100% of the schools. 96% of teachers in the schools act in accordance to the school laid down policies to avoid sanctions, while 4% of the teachers do what they like without fear of being sanctioned. The principal is less concern about the teacher activities in 4% of the schools while 96% of the school heads make sure they oversee every activities of teachers in the school. There is usually follow up to ensure that teachers carry out their assignment promptly in 92% of the schools while in 8% of the schools the school heads have confidence that teachers will do their work unsupervised. There are laid down policies and ways of carrying out school programs and activities in 100% of the schools. There is usually delegation of teachers' extracurricular work and duty in 92% of the schools while anyone can carry out any task based on interest in 8% of the schools.

Conclusion

Supervision of teachers on choice of textbooks and process of evaluation is low in most schools, choice of textbooks and evaluation ought to be monitored by school head and be sure it is as speculated in the universal syllabus as designed by government agencies in charge of curriculum development so that these students taught will be able to attempt external exams confidently. Also 64% of principals are cunning in their dealings with the teachers, they are not straight forward, only 42% of them give honest financial report of school expenses, 56% don't take advices offers by teachers, these acts have made them lost cooperation of most teachers. However a good number of principals are democratic enough, they participate in school



activities, carry teachers along in planning of school activities, hold meetings and these were able to get teachers cooperation to a large extent. 98% of teachers in Ondo west local government area possess teaching qualification and this is encouraging.

Recommendations

The researcher hereby recommends that;

- * There should be monitoring committee that is set up over schools and teachers by the government to supervise Implementation of policies and in so doing bring about the achievement educational objectives.
- * Principals and other school administrators should make sure teachers use choice of textbooks recommended by government agencies. Teaching methods should also be monitored because the traditional methods alone is becoming outdated in this evolving world
- * Each school should also have a formally laid down policy to be followed by the teachers, this will guide their activities and school head should ensure the policies are duly followed by teachers.
- * The principals also should encourage teachers into cooperating with his administration in order to attain the school goals by being accountable financially in terms of the income and expenditure, and should be sure there is no communication gap between school management and teachers. There should be a working feedback system that will give teacher freedom of speech to tender issues of concern to them. He should also encourage teacher's involvement in planning and implementation of programs, events and decision making. In addition the principal should always endeavor to be truthful and straight forward at all times. Conclusively, effectiveness can be enhanced when the above recommendation is imbibed by school heads among others educational for goals and objectives to be attained and national growth and development will also be rapid.

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PRINCIPALS' MOTIVATIONAL STRATEGIES AND TEACHERS' JOB PERFORMANCE IN AKOKO NORTH- EAST LOCAL GOVERNMENT, ONDO STATE

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ABSTRACT

This study examined principals' motivational strategies and teachers' instructional tasks and determined the level of students' academic performance in secondary schools in Akoko North East Local Government, Ondo State. Descriptive survey design was adopted and questionnaires titled "Principals Motivational Strategies Rating Scale" (PMSRS), "Teachers' Instructional Task Rating Scale" (TITRS) and "Students' Academic Performance Proforma" (SAPP) were used to collect data on West African Senior School Certificate Examination (WASSCE) results from 2018 to 2021 as indicator of students' academic performance. Reliability of the instrument was determined using test-retest method and reliability coefficient of 0.755 and 0.752 were obtained respectively. Data were collected from 126 respondents, consisting of 6 principals and 120 teachers in 6 public secondary schools. Four research questions and two hypotheses were formulated. Frequency and percentage were used to analyze the research questions while Pearson Product Moment Correlations Coefficient and Chi Square were used to test the hypotheses at 0.05 level of significance in which the result shows that teachers were positive in their perception towards motivational roles of school administrators(72.5%), and likewise the administrators were of a positive perception towards the teacher's instructional task which had a positive impact on students' academic performance(66.7%). The result further report that there are constraints to motivation deterring teacher's job performance [$X^2=35.133$, $df=3$, $p<0.5$]. The findings of this study had justified motivational strategies in public secondary schools as a need for teachers' effective performance. In view of the above, the following recommendations were made: The State Ministry of Education should from time to time organize workshops, seminars, on-the-job trainings and off-the-job trainings for the development of teachers while the school administrators should ensure that the condition being experienced in the classroom and school environment should be that which is encouraging and as well motivating the teachers to teach and the students to learn, this in turn will be helpful to keep improving students' academic standard in secondary schools.

Keywords: Secondary school, principal, motivational strategies, instructional task, students' academic performance.



Introduction

Theorists and researchers have contributed various definitions on motivation. On the common ground of variety of definitions, motivation is described as the process that arouses, energizes, directs and sustains behavior and performance (Luthans, 2000). People are the primary resources of any organization. Like any other organization, schools are staffed by people, mainly by principals, teachers and non-teaching staffs. However, all principals and teachers do not perform equally; some are enthusiastic and hardworking, some are relaxing while others are to the extent of being careless and irresponsible. Principals' motivational strategies are the major cause of such differences. One way of stimulating people is to employ effective motivation which make workers more satisfied to perform their work. According to Akinwumi and Akinfolarin (2022), they defined motivation as a predisposition to behave in a purposeful manner to achieve specific, unmet needs and the will to achieve, and the inner force that drives individuals to accomplish personal organisational goals.

Cole (2002) described motivation as the behaviour caused by a stimulus but directed towards a desired outcome. This underscores the relevance of stimulus (S-R) model in the motivation and supervision of teachers by principals. The presence of this stimulus in this sense, stimulates the individual's behaviour towards job performance and enables the principal to predict, control and explain teachers' behaviour in the productivity of their instructional tasks in schools. In the school setting, the stimulus includes the motivational factors that are provided by the school management to stimulate teachers for optimal productivity.

The importance of motivation in the world of work is considered inevitable. Motivation is the will to act or the spark which ignites and influences the course of human action. It is an inner state that energizes, activates moves and directs or channels behavior towards goals. The act of motivating people starts with learning how to influence individuals to be committed in task performance for the actualization of the set goals. In order to inspire teachers to work individually or in groups in ways that produce the best results, the principal being the administrative and instructional leader is expected to accord significant attention to the use of school-based-rewards system such as equitable distribution of workloads, sharing of responsibilities, delegation of authority, participatory decision making, and collegial relationships and to have positive influence on teacher's attitude to work. These are efforts to encourage the staff and colleagues to willingly perform their tasks and achieve the best of their abilities, and they serve as morale boosters for teachers to cultivate desired sense of purpose, demonstrate strong commitment to work, maintain discipline of students and place top priority in students learning outcomes.

According to Ayeni (2015), principals' motivation is a way of empowering and stimulating teachers in their professional job for better performance. The motivational process involves the perception variables, strategies and activities that are used by the management for the purpose of providing a climate that is conducive to the satisfaction of the various needs of the teachers, so that they may be satisfied, dedicated and effective in performing their tasks. This will invariably enhance the quality of curriculum instruction in the school system. Motivational strategies are geared towards increasing teachers' capabilities, upgrade their conceptual knowledge and teaching skills, give them support in their work, improve their perception in students learning and more importantly, help them keep ready new developments in education delivery.

Teachers' motivation has become an important aspect of teachers' efficacy and professionalism, giving teachers the responsibility of imparting knowledge and skills to learners. Teachers' motivation is related to a long list of variables including whether or not an enabling environment exists and whether or not teachers are equipped to conduct their responsibilities effectively. It is said that a motivated teacher is a productive teacher. Motivation techniques encompasses so many things like the use of fringe benefits, incentives, teamwork, style management, working condition, wages and salaries, promotion and others that influence teachers (Uchegara, 2011).

According to Mathis and Jackson (2003), fringe benefits are forms of indirect compensation given to an employee or group of employees as a part of organizational membership. They are that part of the total reward package provided to employees in addition to the usual salary. Fringe benefits focuses on maintaining or improving the quality of life for employees and providing a level of protection and financial security for workers and for their family members. Incentive are part of profits, especially given to workers who work well or perform well, for example, in the form of bonuses and can also be given in the form of



good. Incentives are remuneration paid to individual workers whose achievement is above standard performance. It is a reward system that is planned to motivate the workforce in order to improve achievement and efficacy so that their work is above the specified standard.

Teamwork, as defined by Simatwa (2011) is a cooperative process that allows ordinary people to achieve extraordinary results. A team has a common goal or purpose where team members can develop effective mutual relationships to achieve team goals. Teamwork relies upon individuals working together in a cooperative environment to achieve common team goals through sharing knowledge and skills. Having your teachers work together can significantly impact their motivation. More experienced teachers will be recognized for their best teaching strategies. Younger teachers will be given validation that they are trying and actually working. Consider creating professional learning communities within your school to create a more formal structure for collaboration

Statement of the Problem

It is pertinent that teachers' activities must be recognized and rewarded by principals so as to spur them to put in greater efforts in order to achieve the objectives that were set out by the school. Therefore, poor application of motivational strategies has a negative effect on the morale of teachers in particular and the academic performance of the students in general. Hence, in public schools in Akoko North- East Local Government, Ondo state, it has been perceived that teachers have not been performing effectively due to poor implementation of motivational strategies. The result of this is that teachers might likely avoid their duties, may not be committed to doing their teaching assignments, and students perform poorly as a result of the teachers' poor attitude to teaching. It appears that the performance of students have not been encouraging which is to a large extent as a result of poor motivation of teachers.

This study therefore, tried to find out how these problems can be solved for the effective performance of teachers. It has been observed that many workers, especially secondary school teachers regret choosing the teaching career due to poor promotion schemes, part payment or non-payment of teachers' salaries and other incentives that accrue to them. In some cases, there has been no on-the-job training, recognition, teamwork, praises, fringe benefits and good working conditions. Therefore, unwillingness to work and absenteeism have provided an avenue for negative attitude as a result of inadequate motivation.

This study therefore examined the influence of principals' motivational strategies in public secondary schools in Akoko North- East Local Government area of Ondo state, for effective performance of teachers.

Purpose of the study

The purpose of this study is to examine the principals' motivational strategies and teachers' job performance in public secondary schools in Akoko North- East Local Government, Ondo state.

The specific objectives were to;

1. Determine the level at which the principals had perceived teachers' instructional tasks in secondary schools.
2. Determine the impact of teacher's instructional task on students' academic performance in secondary schools.

Research Questions

The following research questions were raised to guide the study;

1. How do principals perceive teachers' instructional tasks in secondary schools?
2. What is the impact of teachers' instructional task on students' academic performance in secondary schools?

Research Hypotheses

The following hypotheses were formulated to guide the study

HO1: **The constraints of motivation have no significant influence on teachers' job performance.**

HO2 **There is no significant relationship between principals' adopted motivational strategies and students' academic performance in secondary schools.**

Literature Review



Teachers' Instructional Task and Job Performance

Instructional tasks are statutory curricula functions that are performed by the teachers to enable learners achieve the set educational goals in schools. This ultimately depends on the avowed commitment of principals and teachers to make judicious and adequate use of both human and material resources to ensure quality assurance in the teaching-learning process. Teacher quality is the ability of the teacher to demonstrate sound professional attributes like scholarship through adequate training and it is pivotal to successful teaching, students' learning outcomes and attainment of quality education in secondary schools. Teachers' quality is manifested in their knowledge of the subject-matter, skills and competences in the teaching and learning processes, which leads to the accomplishment of the stated educational goals. This means that the real teacher must possess the qualities for effective teaching and pleasant learning within the school setting. He must know what he is to teach, how he is to teach, and whom he is to teach. The purpose is to deliver the curriculum efficiently, so as to achieve the set goals and standards in schools (Koleoso, 2002; Makinde & Alao, 1992).

Kahler (2006) defined teachers' job performance as the performance of teaching tasks and rendering of expected teaching services by teachers. It has to do with the abilities of the teacher to fulfill his/her duties as a teacher. As this definition suggest; job performance among teachers are actions used in carrying out job requirements that often progresses the aims and objectives of any educational system. Thus effective teacher job performance connotes the ability of the teacher to do his or her work very well so that the objective of teaching and learning is achieved and this is not an easy task. Therefore, for teachers to perform very well in their schools there must be effort to motivate them by the principals using different strategies.

Students' Academic Performance

Students' academic performance is the quality of knowledge, skills, attitudes and values acquired in the cognitive, affective and psychomotor domains of educational objectives for necessary self-confidence, self-reliance, effective citizenship, responsiveness to opportunities and challenges of life (Mishra, 2008). Students' academic performance is undoubtedly dependent on teachers' knowledge, skills and competencies in instructional task performance. The quality of students' learning outcomes is directly dependent on the quality of teachers as demonstrated in their knowledge of the subject matter and capacities to effectively carry out instructional tasks with the ultimate aim of facilitating the learning of diverse students and raising achievement for all learners to meet the specified standards and satisfaction of the larger society.

Academic performance refers to excellence in all academic disciplines, in a class as well as extracurricular activities. It includes excellence in sporting behavior, confidence, communication skills, and others. Steinberger (2005) stated that academic performance encompasses students' ability and performance, it is multidimensional; it is intricately related to human growth and cognitive, emotional and social physical development it reflects the whole child; it is not related to a single instance, but occurs across time and levels, through student's life is public school and into post-secondary years and working life. Academic performance refers to how well a student is accomplishing his tasks and studies. Academic performance in school is evaluated in a number of ways. For regular grading, students demonstrate their knowledge by taking written and oral tests, performing presentations, submission of homework and participating in class activities and discussions. Teachers evaluate in the form of assignment, test and examination to determine how well a student has performed.

Principals' Motivational Strategies and Teachers' Job Performance

Adequate motivation of teachers for optimal job performance in the school working environment, lies on the effectiveness of principals' instructional supervision at maintaining standard and improving teaching and learning processes for the attainment of quality education. The art of motivating people starts with learning how to influence individuals to be committed in task performance for the actualization of the set goals. In order to inspire teachers to work individually or as a team in ways that produce the best results, principals need to develop their own personal motivational strategies. These are efforts to encourage the staff and colleagues to willingly perform their tasks and achieve to the best of their abilities (Robert & Tim, 1998; Neeru, 2003; Ofoegbu, 2004).

The importance of motivation in the world of work is considered inevitable. Motivation is the will to act or the spark which ignites and influences the course of human action. It is an inner state that energizes, activates, moves and directs or channels behavior towards goals (Lawal, 1993; Robert & Tim, 1998, Neeru,



2003). The principal is also expected to give desired attention to the classroom condition which is very important in teachers' motivation. The classroom that is safe, healthy, equipped with facilities and learning resources will serve as a catalyst for effective teaching and optimal learning in the school setting. The condition being experienced in the classroom and school environment may mar or enhance the quality of curriculum instruction and students' academic standard in secondary schools (Ofoegbu, 2004). In spite of the above challenges, motivation of teachers is likely to improve by giving teachers recognition for a good work done and by also rewarding them when they have done well. Rewards available to an individual are generally classified into two, namely, intrinsic and extrinsic (Cole, 2002).

There is a great relationship between job satisfaction and job performance which is reflected in employees' high morale, quality and quantity of output, reduction in absenteeism and turnover. School administrators have to take it upon themselves to provide everything teachers need to make them satisfied with their jobs. As sited in Herzberg's theory that we have job satisfiers and dissatisfies, principals needs to put into consideration all of these factors.

Theoretical Framework

The expectancy theory developed by Victor H. Vroom's in 1964 is one of the most popularly referred to theories on motivation. Practical experience tells us that the same people are motivated by different things at different times and that different people are motivated by different things at the same time. Fortunately, expectancy theory, which is based largely on classic Work and Motivation, effectively deals with the highly personalized rational choices that individuals make when faced with the prospect of having to work to achieve rewards. The basic premise is that people differ in their expectations just as they do in their perceptions of any situation. The expectancy theory states that different people value different things. Correspondingly, in an organization, not every person will be motivated by the same tag. Some will be motivated by money while some by status and others by job security. This implies that motivation is not a "one size fits all" strategy. It is therefore left with the management to identify the rewards which are valued by specific people.

Expectation plays a significant role in determining how hard people will work. Two examples are particularly pertinent. Firstly, the expected probability of achieving the level of performance demanded which is referred to as "effort performance expectancy" which answers the question "if I make effort, how likely is it that I will achieve the performance required?". Secondly, there is the issue of the link between expectation and reward called "performance reward expectancy" which answers the question "if I achieve my target performance what is the likelihood that I will be given my reward".

Accordingly, expectancy theory is a motivation model based on the assumption that motivational strength is determined by perceived probabilities of success. The term expectancy refers to the subjective probability (or expectation) that one thing will lead to another. Work-related expectancies, like all other expectancies, are shaped by ongoing personal experience. For instance, an employee's expectation of a raise, diminished after being turned down, later rebounds when the supervisor indicates a willingness to reconsider the matter. Therefore, expectancy theory has the clear indications for managers to be cautious if they wish to maximize the motivation of their staff by noting the following conditions:

- Not to assume that everyone is motivated by money. It is vital to determine the rewards that each person values and offer these as incentives;
- be absolutely sure to make sure to make the performance required very clear with specifications on the behavior required;
- make sure that employees know that achieving the target performance will be rewarded and never renege on a promise of a reward to avoid lowering irrevocably the performance reward expectancy; and
- ensure that the performance targets are perceived as reasonable and achievable with extra efforts.

RESULTS AND DISCUSSION

Research Question 1: How do principals perceived the teachers' instructional tasks in secondary schools?

In answering this research question, Table 1 showed the response to the principals' perception towards teachers' instructional task in secondary schools



Table 1:
Frequency and percentage summary on statement relating to the principals' perception of teachers' instructional tasks in secondary schools

Items		Response			
		SA	A	D	SD
All teachers prepares adequate lesson notes	F	-	4	2	-
	%	-	66.7	33.3	-
All teachers makes use of instructional materials during lessons	F	-	3	3	-
	%	-	50.0	50.0	-
All teachers prepares and delivers lessons promptly	F	1	1	4	-
	%	16.7	16.7	66.6	-
All teachers conducts continuous assessment regularly	F	1	5	-	-
	%	16.7	83.3	-	-
All teachers engage students in classroom lecture discussions and uses class work as well as assignments to test their learning capacity	F	3	2	1	-
	%	50.0	33.3	16.7	-
Average Summary	F	1	3	2	-
	%	16.7	50.0	33.3	-

Source: Field Work 2023

Considering the difference observed in frequencies, it certified that this result is valid for further conclusion. Therefore, it is affirmed that the school administrators (principals and or vice principals) were positive in their perception towards the teachers adopted instructional tasks in secondary schools.

Research Question 2: What is the impact of teachers' instructional task on students' academic performance in secondary schools?

In answering this research question, Table 2 showed the impact of teachers' instructional task on students' academic performance in secondary schools

Table 2: Frequency and percentage summary on statement regarding the impact of teachers' instructional task on students' academic performance in secondary schools

School	Academic Year		Average of Four Academic Years of Students Performance			
			5 Credit Pass with English & Maths	5 Credit Pass with either English or Maths	5 Credit Pass no English or Maths	Less than 5 Credits
A	2017-2021	F	156	61	32	22
		%	57.6	22.5	11.8	8.1
B	2017-2021	F	451	32	1	1
		%	93.0	6.6	0.2	0.2
C	2017-2021	F	320	97	36	31
		%	66.1	20.0	7.4	6.4
D	2017-2021	F	293	39	26	2
		%	81.4	10.8	7.2	0.6
E	2017-2021	F	136	-	3	-
		%	97.8	-	2.2	-
F	2017-2021	F	45	42	26	26
		%	32.4	30.2	18.7	18.7

Source: Field Work 2023

Table 2 above presents the impact of teachers' instructional task on students' academic performance in secondary schools. It was observed that the teachers adopted instructional tasks in secondary schools had helped the students to perform reasonable well in their college final examination within a reviewed 5 years academic period (2017-2021) across several colleges. Considering the variation observed in frequencies, it could be affirmed that this result is valid for further conclusion. Thus it is certified that teacher's adopted instructional task had a positive impact on students' academic performance in the secondary schools.

Hypothesis 1: The constraints of motivation have no significant influence on teachers' job performance

In dealing with hypothesis 1, Table 3 showed the influence of the constraint to motivation on teachers' job performance.

Table 3:

Chi square summary showing the influence of constraints to motivation on teachers' job performance

Items		Teachers Response				School Administrators Response			
		SA	A	D	SD	SA	A	D	SD
®When there are no conducive environment for the teachers, and their salaries are not paid at when due it does not discourage them to teach or engage their best in schools	F	7	35	52	26	-	1	3	2
	%	5.8	29.2	43.3	21.7	-	16.7	50.0	33.3
Chi square	X ²	35.133				1.012			
	Df	3				3			
	P	<.05				<.05			

Source: Field Work 2023

Further confirming this result is the Chi square value of [$X^2=35.133$, $df=3$, $p<0.5$] for the teachers sample, and [$X^2=1.012$, $df=3$, $p<0.5$] for the school administrators, which indicates that the difference observed in frequencies certify this result to be valid for further conclusion. Thus, it is justified that constraints to motivation has significant influence on teachers' job performance. **This negates the formulated null hypothesis 1 and it was rejected.**

Hypothesis 2: There is no significant relationship between principals adopted motivational strategies and students' academic performance in secondary schools?

In dealing with hypothesis 2, Table 4 showed the relationship between principals' motivational strategies and students' academic performance in secondary schools.

Table 4:

Correlation summary showing relationship between principals' motivational strategies and students' academic performance in secondary schools

Variables	Mean	SD	N	Df	r	p
Principals Motivation Strategy	14.08	2.37	120	118	-.045	> .05
Academic Performance	3.53	0.85	120			

Source: Field Work 2023

The result in Table 4 indicated that there is no significant relationship between the principals adopted motivational strategies and students' academic performance [$r(118)=-0.45$, $p > .05$]. This means that the



adopted strategies of motivation is for the teachers which does not directly affects the students' performance in their academics, it is then inferred there are other related factors in respect to the teachers and school administrators that are needed to aids the students' academic performance. The findings supports the formulated null hypothesis 2 and it was accepted.

Discussion of Results

Motivation in the workplace has been said to be major cornerstone sustaining any organization, because when introduced in the organization, it arouses, energizes, directs and sustains positive behavior as well as employee performance in any related organization. The findings of this study had formulated and tested some specific research questions and hypotheses to certify the potency of motivation among teachers and administrators in secondary schools.

The first research question inquiring principals perception in relation to the teachers instructional tasks in secondary schools with statements such as "teachers engage students in classroom lecture discussions and uses class work as well as assignments to test their learning capacity; and that teachers prepares and also delivers lessons promptly" was consented by the responding school administrators (principals) in their good numbers which affirmed that the principals were positive in their perception towards teachers instructional task in secondary schools, this findings is in line with the findings of Koleoso (2002) and Makinde et.al (1992) studies; it was specified in these studies that teachers who made effort to teach promptly was because they want to deliver lectures in accordance to the curriculum efficiently, so as to achieve the set goals and standards in schools.

The interest in the impact of teachers' instructional task on students' academic performance in secondary schools in the research question two revealed that the school administrators (principals) in their higher percentage had affirmed that teachers' commitment to instructional task has been beneficial to students' academic performance. The findings of (Ayeni, 2010; Marianne et.al, 2010) were in line with this study finding, these studies emphasized that teachers' job performance "such as adopting adequate instructional task, improvisation of instructional materials, etc." enables learners to achieve the set educational goals in schools, and also that the success of a school and the performance of the students totally depend on the quality of teachers in the school.

The study hypothesis considering that constraints of motivation to have no significant influence on teachers' job performance was negated as it was confirmed to be so, and this was also supported by the Ofoegbu, (2004) study which believed that the condition being experienced in the classroom and school environment may mar or enhance the quality of curriculum instruction from the teachers and students' academic achievement in schools.

The second hypothesis with interest in no significant relationship between principals adopted motivational strategies and students' academic performance in secondary schools was confirmed in this study findings. This study resolution is in line with the Ayeni et.al (2008) findings reporting which revealed that there was no significant relationship between principals' motivational strategies and performance, though the teachers were the reference points.

Conclusion

This study has justified that the importance of motivation, as it is a viable tool that ignites and influences the course of human action both in its felt inner state of energizing, activating, moving and directing or been channeled towards the perceived external behaviour of taking inclusive steps in achieving the goals of any organisation. This study has proved beyond reasonable doubt that motivation for the teachers is a key element to improving their performance and as well as a resultant positive implication of it on students' academic performance.

Recommendations

- The ministry of education should from time to time organize workshops, seminars, on-the-job trainings and off-the-job trainings for the development of the teachers.
- Administrators in the public secondary school should understand that their staffs (Teachers) need to be motivated for them to give out their best in the work place.
- The condition being experienced in the classroom and school environment should be such that is encouraging and as well motivating the teachers to teach and the students to learn, this in turn will be



helpful to improving students' academic standard in secondary schools.

- The instructional task of the teachers should be reviewed quarterly to check the level of staff commitment to work while on duty as a public school teacher.
- Effort made by teacher (no matter how small) must be giving due recognition and as well properly appreciated to encourage them and others to do more and to be always willing to give their best as public secondary school teachers.
- The school administrators should take cognizance of variability in their teachers who should be studied to identify and understand the type of motivation and its strategy (financial or non-financial) that best work for the members of staffs in the plan to motivating them for better service delivery
- The public school administrators should advice the government to be timely in paying salaries, and other benefits to motivate their teachers.

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IMPROVING SECONDARY SCHOOLS STUDENTS' ACADEMIC PERFORMANCE IN ACCOUNTING: THE IMPACT OF MOTIVATION, STUDY HABIT AND CLASSROOM PARTICIPATION

By

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Abstract

The study investigated the impact of motivation, study habit and classroom participation in improving students' academic performance in accounting in selected senior secondary schools in Ondo North Senatorial District of Ondo State. Four research questions guided this study. The study adopted correlational research design. The sample comprised 250 senior secondary school two (SSS2) students from twenty-five selected secondary schools in Ondo North Senatorial District of Ondo State. Questionnaire was used as instrument for data collection. Data collected from the study were analyzed using mean, standard deviation, Pearson Product Moment Correlation and Multiple Regression Analysis. Findings revealed that: there was a significant relationship between motivation and students' performance in financial accounting; there was a significant relationship between study habits and students' academic performance in financial accounting; there was a significant relationship between classroom participation and students' performance in financial accounting. Based on the findings, it was recommended that teachers should be trained and guided on how to motivate their students for increase performance; teachers should allow students to contribute and share ideas freely among their colleagues; parents should create time for their wards to study accounting for at least one to two hours every day.

Keywords: *Motivation, Study habits, Classroom Participation; Academic Performance, Financial Accounting*

Background of the Study

The academic performance of students in accounting is a matter of concern to various stakeholders, including parents, academics, administrators, and others. The overall objective of the accounting programme is to improve students' academic performance. Educational researchers prioritize the desire to enhance students' academic performance, particularly in accounting, as it holds significant importance. Teachers and researchers in accounting education constantly seek new methods to enhance students' academic performance. Efficient performance in accounting serves as motivation for students, teachers, parents, and other stakeholders. Accounting is a process that involves identifying, recording, communicating, and interpreting financial information for the benefit of users. It is an integral part of every business activity, and knowledge of financial accounting is crucial for individuals and businesses alike (Eze, Ezenwafor & Obidile, 2016). Despite its significance, accounting is often considered a challenging subject to pass, which can sometimes impact students' performance in the subject (Elias, 2005; Lane & Porch, 2002).

According to Eze, Ezenwafor, and Obidile (2016), academic performance is the result of students' efforts in their academic pursuits, reflecting how well they are accomplishing their tasks and studies. Teachers assess students' performance through assignments, tests, and examinations. Poor academic performance is determined by examiners and other significant individuals when it falls below the expected standard (Adesemowo, 2005). In relation to accounting, Obidile, Amobi, Uzoekwe, and Akuezilo (2017) have highlighted that students' performance in this subject, particularly at the secondary school level, has been unsatisfactory. Academic performance is influenced by various factors, including motivation and students' abilities. Previous research has shown that poor academic performance is a result of multiple factors, including inadequate teaching and learning materials, lack of motivation, and negative attitudes



exhibited by both teachers and students (Enu, Agyman & Nkum, 2015; Atieh, 2013; Mbugua, Kibet, Muthaa, and Nkonke, 2012; Mondada & Pekarek-Doehler, 2004). Ward, Wilson, and Ward (1994) as cited in Obidile, Amobi, Uzoekwe, and Akuezilo (2017) attributed students' poor academic performance in accounting to factors such as ineffective study habits, inability to apply learned material, the pace at which the material is covered, and teaching methods employed by instructors. Also, Drennan and Rhode (2010), indicated that the performance of students in accounting has not been satisfactory, and highlighting the need to explore the influence of motivation, study habits, and classroom participation. Therefore, inadequate motivation, ineffective study habits, and limited classroom participation are key contributors to students' underperformance in a particular subject.

Motivation, as described by Latham (2011), refers to the psychological process that drives individuals to take actions that help them fulfill unmet needs. Kostelecky (2005) defines motivation as an internal state that activates, guides, and sustains behavior. Particularly in education, motivation plays a crucial role, especially when considering students' performance in their studies or projects. Student motivation is a significant factor that stimulates learning. Motivation serves as the driving force behind human behavior, initiating and maintaining actions aimed at achieving goals (Jenkins & Demaray, 2015). Motivation seeks to explain why people choose to pursue certain actions, their level of commitment, willingness, and the duration of their engagement (Dörnyei, 2001). Motivation serves as a fundamental element for academic success, involving both internal and external factors that foster enthusiasm and dedication towards a task, role, or subject, as well as the effort invested in achieving a goal. Dörnyei (2001) asserts that motivation clarifies individuals' decision-making process, their level of perseverance, and their commitment to sustaining an activity. In essence, motivation is what initiates action, sustains it, and determines the intended destination (Slavin, 2006). Students can be motivated either intrinsically or extrinsically.

Intrinsic motivation is characterized by internal motivation and a genuine, inherent interest in an activity or subject. It occurs when a learner engages in an activity out of personal interest and derives satisfaction from it. Intrinsic motivation represents autonomous and self-determined behavior, where learners actively seek challenges and strive to fulfill their potential, abilities, and sensibilities (Deci & Ryan, 2002). When students have intrinsic motivation, they exhibit a continuous desire to learn and participate without relying on external rewards (Coon & Mitterer, 2010). Intrinsic motivation is evident when individuals perform activities for their own internal interest and satisfaction (Brown, 2007). Learners who possess intrinsic motivation are typically high achievers. However, if they are not adequately challenged, their motivation may decline. They are willing to invest effort and work hard because their motivation stems from genuine interest.

Extrinsic motivation refers to the inclination to engage in activities with the expectation of receiving external rewards, whether in tangible or psychological form (Brown, 2007). It involves behavior driven by external incentives such as money, recognition, grades, and praise, rather than stemming from intrinsic factors. Extrinsic motivation occurs when individuals perform tasks solely to obtain a reward from an external source. For example, a child who cleans their room in exchange for a trip to the movies is exhibiting extrinsic motivation. Similarly, students who are motivated extrinsically complete activities to obtain external rewards, rather than autonomously initiating tasks. External motivators, such as grades, rewards, and privileges, are provided to students by others. Students can be extrinsically motivated when they expect rewards, prizes, public recognition, or avoidance of punishment based on their academic performance (Haider et al., 2015).

Students who are extrinsically motivated tend to exert minimal effort required to obtain the maximum reward (Afzal et al., 2010). In the realm of learning, individuals can be categorized as either "intrinsically motivated," engaging in activities driven by internal interests and enjoyment, or "externally driven," performing actions with the expectation of outcomes unrelated to the learning process itself (Ryan & Deci, 2000; Deci & Ryan, 2008; Niemiec & Ryan, 2009). Research has demonstrated that these distinct types of motivation yield different effects on students' learning. Intrinsic motivation is associated with enhanced learning outcomes (Niemiec & Ryan, 2009), a focus on the learning process (Garn & Jolly, 2014), increased persistence in learning (Cho, 2012; Deci & Ryan, 2008), and a greater inclination towards self-directed learning and personal growth (Deci & Ryan, 2008; Niemiec & Ryan, 2009; Ling, 2013; Taylor et al., 2014). However, in situations where educational activities lack inherent interest or enjoyment,



extrinsic motivation plays a role in facilitating greater and improved learning (Niemic & Ryan, 2009; Cho, 2012).

The study by Afzal et al. (2010) indicated that both extrinsic and intrinsic motivation have positive effects on students' academic performance. Figueira and Duarte (2011) demonstrated that students who adopt a deep approach to learning, characterized by intrinsic motivation and the use of deep learning strategies, prefer higher-quality learning experiences. Krishnamurthy (2000) discovered a significant positive relationship between academic achievement and academic motivation. Koseoglu (2013) identified a notable difference in academic motivation between male and female students, with females showing higher levels of both intrinsic and extrinsic motivation. Guay et al. (2010) found that girls displayed higher intrinsic motivation for reading and writing, while boys exhibited greater intrinsic motivation for mathematics and other subjects requiring extensive calculations. It has been observed that female students tend to be more intrinsically and extrinsically motivated than males. Abdurrahman and Garba (2014) conducted a study examining the impact of motivation on the academic achievement of junior secondary school students in mathematics, considering gender as a variable of interest. The results indicated a positive relationship between motivation and academic achievement, with highly motivated students performing better than those with low motivation. Aireand and Tella (2003) also found that successful students demonstrated significantly higher levels of achievement motivation compared to their less successful counterparts.

Academic performance is the desired outcome that every student aims to achieve in their educational journey, and the attainment of good performance can be facilitated through the development of effective study habits. Study habits are commonly described as the ability of students to effectively manage their time and utilize available resources in order to successfully complete their academic tasks. Crede and Kuneel (2008) define study habits as the routines followed by students, which may include factors such as the frequency of study sessions, review of materials, self-testing, and practicing learned material in an appropriate learning environment. Study habits encompass a well-organized and intentional pattern of studying that demonstrates consistency in the approach taken by students to comprehend academic subjects and succeed in examinations (Kaur & Pathania, 2015). The quality of study habits significantly influences students' academic achievements. Previous research has shown a strong interrelation and dependence between study habits and academic performance. Effective study habits play a vital role in helping learners acquire meaningful and desirable knowledge. Kaur and Pathania (2015) argue that good study habits serve as a powerful tool for students to excel in their learning endeavors. Similarly, Ebele and Olofu (2017) suggest that a student's level of academic achievement is greatly influenced by their approach and commitment to their studies.

Study habits play a crucial role in determining students' academic performance, and neglecting this aspect can have detrimental effects on their success in both internal and external examinations. It is essential for students to abandon unfavorable study habits and establish effective ones in order to ensure academic excellence in their educational journey (Ebele & Olofu, 2017). According to Ashish (2013), if students aspire to achieve academic success, they must discard poor study habits and cultivate positive ones. Similarly, Mark and Howard (2009) emphasize that the lack of effective or positive study habits is a common obstacle to students' overall success. They argue that by developing good study habits and exercising discipline, students are more likely to excel in their academic pursuits. Kelli (2009) suggests that in order for students to thrive in their studies, they must be able to assimilate course content effectively, digest the information, reflect upon it, and articulate their understanding through oral or written means. The acquisition of effective study habits is crucial for successful studying, as the number of hours spent studying does not necessarily guarantee comprehension or retention. Therefore, the focus should shift to how students can study more efficiently. Developing strong time management skills is of utmost importance. Students must recognize the importance of allocating time for attending classes, studying, spending time with family, engaging in social activities, and allowing for personal solitude.

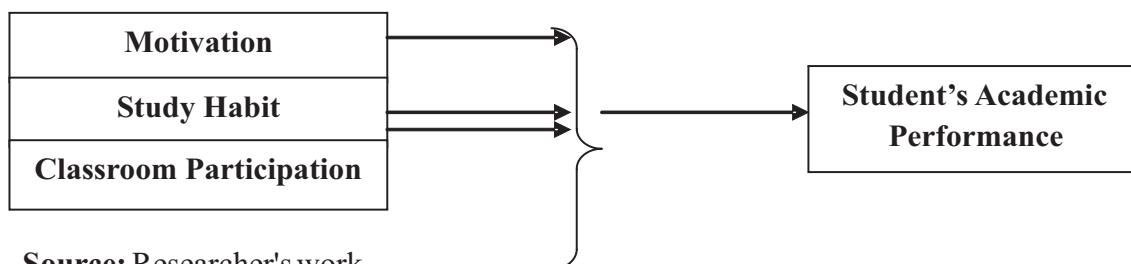
According to Marc (2011), the development of effective study habits is essential for student at all educational levels. These habits contribute to students' self-discipline, self-direction, and overall success in their academic endeavors. By cultivating good study habits, students can work more efficiently and experience reduced stress. Additionally, Marc emphasizes that effective study habits create a more productive academic environment. Adeninyi (2011) further argues that good study habits enable students to independently engage in studying at home and strive for higher academic performance. At the secondary



school level, the establishment of strong study habits becomes particularly important as it forms the foundation for success in external examinations such as the West African Examinations Council (WAEC), National Examinations Council (NECO), and Joint Admissions and Matriculation Board (JAMB) exams. Similarly, Bolling (2000) states that through effective planning and good study habits, students can adequately prepare for future tasks and achieve their academic goals. Conversely, the absence of study habits puts students at a disadvantage and is a significant contributing factor to their need for remedial classes, falling behind in coursework, and dropping out of school.

Also, active participation of students in classroom activities is a crucial element in the learning process. It has been consistently found by researchers such as Harris (2008), Lewis (2010), and Wang and Eccles (2012) that student involvement in classroom activities contributes significantly to their academic competence and achievement. Classroom participation refers to the active engagement of students in the teaching and learning process. Scholars like Amao (2009) and Fakeye (2008) have emphasized the importance of student involvement in teaching and learning as a factor that positively impacts the quality and quantity of learning that takes place, ultimately influencing students' performance in examinations. The teaching method employed also plays a vital role in students' learning experiences, as highlighted by Kalu (2010) and Safadi and Rababah (2012). While student performance is not solely determined by the teacher's instruction, the teaching approach employed greatly influences classroom learning. Teachers establish a framework for classroom conduct, and students adapt their behavior accordingly. As a result, students exhibit varying degrees of participation in different classes and respond differently to various teachers. This combination of instructional approaches and student participation creates a specific classroom environment characterized by unique interaction patterns. The significance of active classroom participation in facilitating successful learning is widely acknowledged, as emphasized by Tatar (2005). Jackson (2002) further emphasizes the importance of learner participation, noting that it provides a context in which students can construct and shape their identities as members of the classroom community.

The correlation between classroom participation and students' academic achievement is unquestionable, as supported by the research conducted by Petress (2006) and Weaver and Qi (2005). Classroom participation serves as a means to actively involve students in the teaching and learning process, leading to enhanced learning outcomes. Students who actively participate in classroom activities demonstrate improved academic performance (Weaver & Qi, 2005), increased motivation, enhanced critical thinking skills, and self-reported character development (Kuh & Umbach, 2004). Increased student involvement in learning activities discourages rote memorization and promotes higher-order thinking skills such as interpretation, analysis, and synthesis. Furthermore, student participation has been found to contribute to improved communication skills (Dancer & Kamvounias, 2005), collaboration skills, and the development of democratic values (Girgin & Stevens, 2005). Fritschner (2000) discovered that students perceived participation as "essential" for their own learning. Moreover, studies conducted by Handelsman, Briggs, Sullivan, and Towler (2005), Fritschner (2000), and Crombie, Pyke, Silverthorn, Jones, and Piccinin (2003) consistently reaffirmed the finding that students who actively participate tend to earn higher grades. Creating a supportive classroom climate is essential for fostering student participation, as emphasized by Hyde and Ruth (2002). Teachers play a crucial role in establishing a positive environment by providing constructive feedback and nurturing a sense of support and encouragement.



Source: Researcher's work



Figure 1: Schema showing the independent variables and dependent variable

However, many empirical studies on each of these variables (motivation, study habits and classroom participation) have been conducted independently by different scholars. But, no literature has investigated the combined impact of these variables on academic performance of accounting students. Most of these studies were conducted in the environment different from the area of the present study. Hence the need for this study on the impact of motivation, study habit and classroom participation on students' academic performance in accounting in secondary schools in Akoko South West Area of Ondo State, Nigeria.

Statement of the Problem

Students' performance in accounting has not been encouraging especially at the post basic education level (secondary schools). This alarming rate of poor performance in this course has generated public outcry from parents, teachers, schools administrators and the government. Due to the increase in poor performance of students in accounting, many stakeholders tend to shift the blame on the instructional approach adopted by teachers and other teacher related factors. However, these might not be the main reasons why students perform poorly in their academics. Many student-related factors may have accounted for the poor state of students' performance in accounting which includes lack of motivation, lack of good study habits and inadequate classroom participation. It is against this background that the study was conducted to determine the impact of motivation, study habits and classroom participation on the academic performance of accounting students.

Purpose of the Study

The main purpose of this study is to determine the impact of gender, motivation, study habits and classroom participation on academic performance of accounting students. The general aim is expressed in the following specific objectives which are to examine the relationship between:

- Motivation and Academic Performance of Students in Accounting.
- Study Habit and Academic Performance of Students in Accounting.
- Classroom Participation and Academic Performance of Students in Accounting.
- The combined effect of motivation, study habits and classroom participation on students' academic performance in Accounting.

Research Questions

In line with the specific objectives of the study, the following research questions were raised in this study:

- What is the relationship between motivation and students' academic performance in accounting?
- What is the relationship between study habit and students' academic performance in accounting?
- What is the relationship between classroom participation and students' academic performance in accounting?
- What is the combined effect of motivation, study habits and classroom participation on students' academic performance in Accounting?

Hypotheses

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

- H₀₁:** There is significant relationship between motivation and students' academic performance in accounting
- H₀₂:** There is significant relationship between study habits and students' academic performance in accounting
- H₀₃:** There is significant relationship between classroom participation and students' academic performance in accounting
- H₀₄:** There is significant combined relationship among motivation, study habits and classroom participation on students' academic performance in accounting

Method

Correlational research design was adopted for this study. Correlational research design was considered suitable for this study because it enables the researcher to determine the correlation between



motivation, study habit, classroom participation and academic performance of students in financial accounting in secondary school in Ondo State. The population of this study comprised of all the SS2 students offering financial accounting in public secondary schools in Ondo North Senatorial District, Nigeria. The sample of the study comprised of 250 students randomly selected from 25 secondary schools in Ondo State. The multi-stage, simple random and purposive sampling techniques were used to select the samples for the study. Ondo North Senatorial District is clustered into six Local Governments with differing number of schools. Simple random sampling was used to select three Local Governments from the Senatorial District. Proportionate stratified sampling technique was used to select 50% of the schools which amounted to 25 secondary schools from 50 public secondary schools in the sampled areas as follows:

Local Government	No. of Schools	Sampled Schools	No of Students
Akoko South West	17	9	90
Akoko North East	18	9	90
Ose	15	7	70
Total	50	25	250

Purposive sampling technique was used to select 10 SS2 accounting students from each sampled school giving a total of 250 respondents. Purposive sampling technique was adopted because of the following reasons:

- a) The SS3 Accounting students were busy preparing for their May/June 2021 West African Examination (WAEC) and National Examination (NECO) and in other not to disrupt their preparation; the SS2 accounting students were selected,
- b) They have been examined for five consecutive terms and
- c) SS2 students have already formed study habits they are characterized with.

A self-constructed questionnaire titled “Students' Motivation, Study Habit and Classroom Participation Questionnaire (SMSHCPQ) and Financial Accounting Performance Test (FAPT) were developed as instrument for the study by the researchers. The SMSHCPQ was divided into four sections: Section A obtained the personal data, Section B focused on Students' Motivation, Section C was on Students' Study Habit and Section D measured Students' Classroom Participation. Section B consists of 18 item statements on students' motivation on a four-point scale (Strongly Agree=4, Agree=3, Disagree=2 and Strongly Disagree=1). Section C consists of 25 item statements on students' study habit on a two-point scale (2= Agree and 1= Disagree). Section D consists of 20 item statements on classroom participation on a four-point scale (Strongly Agree=4, Agree=3, Disagree=2 and Strongly Disagree=1). The Financial Accounting Performance Test (FAPT) was designed by the researcher to measure students' academic performance in financial accounting. It comprised of 30 multiple choice items based on secondary school curriculum content for SSSII Financial Accounting and the participants were expected to choose the right answers from the options given.

The instruments were validated and trial-tested on 20 SS2 students of two secondary schools that are not part of the schools used for the study. Cronbach alpha and Kuder Richardson (Kr-21) reliability technique were used to determine the reliability coefficient of SMQ, SSHQ, SCPQ and FAPT which yielded coefficients of 0.72, 0.79, 0.76 and 0.83 respectively. The researcher visited the selected senior secondary schools in Ondo North Senatorial District to distribute the instrument to the sampled students. Data collected from the study were analyzed using mean, standard deviation and inferential statistics of Pearson Product Moment Correlation (PPMC) to analyze the first three hypotheses while Multiple Regression Analysis was used to determine the joint contributions of the independent to dependent variables. The result were interpreted at $P < .05$.

**Result****Table 1: Students' Academic Performance in Financial Accounting**

Variable	60-100	50-59	40-49	0-39
Akoko South West	12(13%)	48(53%)	16(18%)	14(16%)
Akoko North East	14(16%)	44(49%)	19(21%)	13(14%)
Ose	08(12%)	36(51%)	10(14%)	16(23%)
Total	34(14%)	128(51%)	45(18%)	43(17%)

Table 1 shows that 34 students scored 60% and above in financial accounting, 128 students scored 50%-59%, 45 students scored 40%-49% while 43 students scored below 40%. This implies that majority of the students are of average performance.

Motivation and Academic Performance of Students in Accounting**Table 2: Mean Ratings of Respondents on Students' Motivation**

S/N	ITEMS	\bar{x}	SD
1	I always love to be in the classroom when it is time for accounting.	3.18	1.03
2	I am usually enthusiastic when I communicate with my peers in the class	3.15	0.94
3	I pay rapt attention in the class because I have interest in the subject	3.13	1.06
4	I study and solve questions in financial accounting well because I am pleased to do so	3.12	0.76
5	Having good grade in accounting is a good way to see how well I am doing in the subject	3.11	1.09
6	My teacher compensate me when I perform well	2.80	1.05
7	I study well so as to improve my grade in the subject	3.12	0.99
8	I feel encouraged to study more when I see myself been praised by my teacher	3.41	0.76
9	I like accounting because I want to become an accountant	3.48	0.76
10	I feel achieved when my grade commensurate my effort	3.68	0.59
11	I desired to be involved in accounting class	2.84	1.04
12	I am curious to know more about accounting	2.69	1.04
13	I try to solve difficult questions on my own	2.62	0.92
14	I desire to have the highest grade in the subject	3.46	0.83
15	I am always acknowledged when I perform well	3.68	0.47
16	I compete with others because I want to be the best	2.82	1.12
17	I like to perform well because of the reward attached to it	3.72	0.53
18	I study hard so as to avoid punishment	3.08	0.99
	GRAND MEAN	2.85	0.75



Decision Rule: \bar{X} of 2.5 and above = motivated while \bar{X} below 2.5 = not motivated

The result in **Table 2** shows the mean ratings of respondents on students' motivation. The result revealed that students are motivated to study financial accounting with grand mean and standard deviation of 2.85 and 0.75 respectively which is above the decision rule of 2.50.

Table 3: Pearson Product Moment Correlation of Students' Motivation and Academic Performance in Accounting

Variable	Mean	Std Deviation	N	R	Df	Sig.	Remarks
Motivation	3.140	.84758	250	.814 ^a	249	.000*	Significant
Academic Performance	52.22	12.250	250				

* Significant at P < .05

The result in **Table 3** reveals that motivation has a significant relationship with students' academic performance in accounting ($r = .814^a$, $df = 249$; $P < .05$). This implies that motivation has strong positive relationship with students' academic performance in financial accounting and the relationship is significant.

Study Habit and Academic Performance of Students in Accounting

Table 4: Mean Ratings of Respondents on Students' Study Habit

S/N	ITEMS	\bar{X}	SD
1	I always review materials that have been studied previously	1.68	0.47
2	I read text books in order to form my personal note	1.59	0.49
3	I read ahead of the class	1.57	0.50
4	I get meaning of new words as I read text books	1.76	0.42
5	I practice strategic reading	1.65	0.48
6	I take meaningful notes whenever I am in class	1.81	0.39
7	I chat on social media while studying	1.69	0.46
8	I read other materials other than text books	1.64	0.48
9	I compare my class notes with my classmate.	1.64	0.49
10	I depend solely on the notes my teacher gives me	1.52	0.50
11	I summarize my notes into my own words for quick and easy understanding.	1.53	0.50
12	I have a regular place to study	1.55	0.50
13	I try to study when I am free or relaxed	1.73	0.44
14	I concentrate fully when I am studying	1.78	0.41



15	I have a study schedule	1.53	0.50
16	I have a study reminder	1.51	0.50
17	I study without being forced to do so	1.62	0.50
18	I study diligently daily	1.82	0.38
19	I examine myself while studying	1.55	0.49
20	I study with a classmate or group.	1.64	0.48
21	I cram my materials a day to test or examination	1.62	0.48
22	I set likely questions for myself before test or examination	1.52	0.49
23	I do my assignment at the last minute	1.62	0.48
24	I seek for help from my classmates and teacher whenever I don't understand my materials	1.64	0.47
25	I prepare for test or examination several days before I take them	1.62	0.48
GRAND MEAN		1.64	0.28

Decision Rule: \bar{X} of 1.5 and above = have study habit while \bar{X} below 1.5 = do not have study habit
The result in **Table 4** shows the mean ratings of respondents on students' study habit. The result revealed that students have good study habit with grand mean and standard deviation of 1.64 and 0.28 respectively which is above the decision rule of 1.50.

Table 5: Pearson Product Moment Correlation of Students' Study Habit and Academic Performance in Accounting

Variable	Mean	Std deviation	N	R	Df	Sig.	Remarks
Study habit	1.638	.279729	250	.721 ^a	249	.000*	Significant
Academic Performance	52.22	12.250	250				

* Significant at $P < .05$

The result in **Table 5** reveals that students' study habit has significant relationship with their academic performance in accounting ($r = .721^a$, $df = 249$; $P < .05$). This implies that students' study habit has strong positive relationship with students' academic performance in financial accounting and the relationship is significant.

Classroom Participation and Academic Performance of Students in Accounting
Table 6: Mean Ratings of Respondents on Students' Classroom Participation



S/N	ITEMS	\bar{x}	SD
1	I am always involved in group discussion in the class	3.13	1.03
2	The size of the class does not encourage me to participate in the class.	3.21	0.88
3	I rarely shy away from classroom talk	3.26	0.81
4	I participate regularly in gathering materials for a particular class	3.03	1.03
5	I often ask questions when I do not understand what is being taught in the class	3.11	0.78
6	The inadequate time allotted for the class does not give me the opportunity to ask questions.	3.15	0.90
7	I understand accounting well when I am given class work during the class.	3.14	0.89
8	I am always scared in accounting class because the questions are too tough so I do not contribute in class	2.47	1.01
9	I find it uncomfortable interacting with my team mate in solving a problem	3.24	0.89
10	My teacher gives us opportunity to freely express ourselves in the class	2.69	1.04
11	I learn faster and easier when I participate in the class	3.10	1.00
12	I like to answer questions in the class because it enhances my performance.	2.81	1.07
13	Being involved in the classroom activities motivates me.	3.11	1.10
14	Being active in the classroom improve my thinking ability	2.67	1.03
15	I like to participate in the classroom because it engages me in higher level of thinking.	2.76	1.12
16	My communication skills are enhanced through my regular participation during learning.	3.51	0.72
17	Being engaged in the classroom encourages me to collaborate with others.	3.28	0.91
18	I come to school regularly so as to participate in classroom activities	2.50	1.05
19	I read ahead of the class to fully contribute in the lesson	3.05	1.06
20	I deliberately prepare myself to partake in class discussions	2.82	1.08
GRAND MEAN		3.01	0.86



Decision Rule: \bar{X} of 2.5 and above = participate in the classroom while \bar{X} below 2.5 = do not participate in the classroom

The result in **Table 6** shows the mean ratings of respondents on students' classroom participation. The result revealed that students are involved in financial accounting classroom activities with grand mean and standard deviation of 3.01 and 0.86 respectively which is above the decision rule of 2.50.

Table 7: Pearson Product Moment Correlation of Students' Classroom Participation and Academic Performance in Accounting

Variable	Mean	Std Deviation	N	R	Df	Sig.	Remarks
Classroom Participation	65.32	5.611	250	.815 ^a	249	.000*	Significant
Academic Performance	52.22	12.250	250				

* Significant at $P < .05$

The result in **Table 7** shows that classroom participation has a significant relationship with students' academic performance in accounting ($r = .815^a$, $df = 249$; $P < .05$). This implies that classroom participation has strong positive relationship with students' academic performance in financial accounting and the relationship is significant.

The combined relationship among motivation, study habits, classroom participation and students' academic performance in Accounting

Table 8: Multiple Regression Analysis of Combined relationship among Students' Motivation, Study Habit, Classroom Participation and Academic Performance in Accounting

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.816 ^a	.665	.661	7.131

Analysis of Variance (ANOVA) for the Regression

Model	Sum of squares	Df	Means square	F	Sig.	Remarks
Regression	24855.266	3	8285.089	162.95	.000*	Sig
Residual	12507.634	246	50.844			
Total	37362.900	249				

a. Dependent variable: ACADEMIC PERFORMANCE

b. Predictors: (constant), Motivation, Study habit and Classroom Participation

The result in Table 8 shows that the combined relationship among motivation, study habit, classroom participation and students' academic performance in accounting is significant ($F_{(3,246)} = 162.95$; $P < .05$). This implies that motivation, study habit and classroom participation together accounted for 66.5% of the total variation in the students' examination score in accounting.

Discussion of Findings

The result on Pearson Product Moment Correlation Table 3 shows that motivation has a strong positive significant relationship with students' academic performance in accounting ($r = .814^a$, $df = 249$;



$P < .05$). This finding is in accordance with the findings of Afzal, et. al., (2010); Firouznia, Yousefy & Ghassemi (2012) and Alfaddai, (2015) who all found significant relationship between motivation and students' academic achievement. They are of the view that motivated students perform better academically. The extent of the students' performance in accounting was therefore based on the level to which the students were motivated.

The result in Table 5 reveals that students' study habit has a strong positive significant relationship with the students' academic performance in accounting ($r = .721^a$, $df = 249$; $P < .05$). This finding corroborates the findings of Nneji (2002) and Amokeodo (2012) who reported a significant relationship between students' study habits and academic achievement. It is therefore noteworthy that when accounting students form and implement good study habits their academic performance will increase but otherwise decrease in the subject.

The result on Pearson Product Moment Correlation Table 7 shows that classroom participation has a strong positive significant relationship with students' academic performance in accounting ($r = .815^a$, $df = 249$; $P < .05$). This finding agrees with the findings of Domike (2002) and Liu (2005) who both found a significant relationship between classroom participation and students' academic achievement. It also supports Javaria, Nazia, and Sadaf (2008) and Bordbar (2010) in their views that classroom participation helps students to perform better in school and engenders positive attitude toward school subjects.

The result in Table 8 shows that the combined effect of motivation, study habit and classroom participation on students' academic performance in accounting is significant ($F_{(3,246)} = 162.95$; $P < .05$). This implies that motivation, study habit and classroom participation together accounted for 66.5% of the total variation in the students' examination scores in accounting. This shows that students perform better when they are motivated to learn, have good study habit and actively participate in classroom activities. This supports Javaria, Nazia, and Sadaf (2008) and Amokeodo (2012) in their submissions that motivation, study habit and classroom participation help students to perform better academically in the school. The combined effect of students' motivation, study habits and classroom participation means that impact of each of the variables on academic performance is not in isolation of the other variable, which means that the three variables must be at work at the same time for performance to increase.

Conclusion

This study investigated the impact of motivation, study habit and classroom participation as predictors of students' academic performance in some selected secondary schools in Ondo state. From the foregoing discussions based on the findings of the study, it can therefore be concluded from the study that motivation, study habit and classroom participation are very important and vital for academic success of students in accounting. Students' level of motivation, study habit and classroom participation work together, not in isolation, to enable students perform better academically.

Recommendations

On the basis of the findings of this study, the following recommendations were made with a view to improve students' academic performance in accounting:

- Teachers should be trained and guided on how to motivate their students for increase performance. Motivation strategies should be integrated into accounting curriculums. This should be a top priority in the schools so that overall school outcomes are high.
- Teachers should make their learning activities student centered. They should allow and encourage students to contribute freely in class, share their views among their colleagues.
- Teachers should device effective strategies that will encourage students to participate actively in class. For instance, in large classes that we have in our schools, teachers should adopt different instructional strategies like peer tutoring, guided discovery, problem based learning, motivate the students and allow them to freely participate in instructional delivery.
- Teachers should attend conferences organized by professional bodies like Institute of Chartered Accountants in Nigeria (ICAN), Association of Business Educators in Nigeria. This will keep them abreast of the current development in the teaching of accounting.
- Teachers should also attend workshops and seminars where strategies of teaching accounting will be taught and discussed extensively. Government, school authority and other philanthropic individuals and organization should support teachers to such training.



- The school authority should allot adequate time for studying accounting on the time table. This will give the students the opportunity to effectively put more time in their study during the school hours.
- Parents should create time for their wards to study accounting for at least one to two hours every day. This should not be during examination period only. Parents should also endeavor to buy all the prescribed texts for their wards.
- Government should mount and sponsor accounting teachers to conferences and periodic training where proactive research findings on strategies and approaches to the teaching of accounting are discussed.
- Curriculum planners should integrate teaching and learning activities that will give room for students' active participation in the class when designing accounting curriculum.

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CREATING A SUSTAINABLE COMMUNITY DEVELOPMENT THROUGH WASTE MANAGEMENT PRACTICES IN IBADAN, OYO STATE, NIGERIA

By

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Abstract

This paper reviews the waste management practices and the issue of sustainable community development in Ibadan, Oyo state, Nigeria. The study employed a desktop and descriptive approach to generate data for the study. It reviewed relevant academic journal publications in the area of waste management practices. It was discovered that mainly private sector, Local Government and Oyo State Solid Waste Management Authority are responsible for the collection and disposal of all types of waste generated in Oyo State, Nigeria. While in terms of solid waste, only four dumpsites (erroneously refer to as landfill) exist in Ibadan, among several other unauthorized or illegal dumpsites that are widely in use, which adorn the landscape. Data generated by the study shows that the method adopted by Oyo State Solid Waste Management Agency was found to be ineffective and fall short of global best practices on environmental sustainability which Nigeria is a signatory member. Open air burning, open dumping, stream dumping, illegal dumpsites, controlled dumpsites and informal recycling by scavengers are the most commonly waste management practices in the state. Poverty, lack of accurate and reliable data, inadequate funding, low level of environmental awareness, inadequate facilities and technology, inadequate trained personnel, and low level of public and private participation are the major challenges militating against effective waste management practices in Oyo state, and Nigeria as a whole. Improper waste management practices pose health, social, environmental, economic and political effects to residents of Oyo state, Nigeria. Sanitary landfill, recycling, composting, incineration, plasma arc and gasification and zero waste were the alternative waste management practices that are capable of creating sustainable environment, employment and community development in Oyo state. The study therefore suggested that alternative waste management practices of 4Rs that is reduce, reuse, recycling and recovery, along with composting, and incineration should be adopted for effective waste management practices in Oyo state, Nigeria. The study concluded that a clean, serene and virile environment through efficient waste management practices have the potential to contribute immensely to the socio-economic growth and sustainable community development of Nigeria.

Keywords: Sustainable community development, waste, waste management practices

Introduction

Waste burial, open dumping, stream dumping and waste burning were traditional waste management practices prevalent in Nigeria from time immemorial till date. These practices do not only constitute an eyesore but an affront to the dignity of the community and threat to man and other species of the ecosystem. The modern era has witnessed the developed nations working towards achieving zero waste through recycling system for sustainable development while waste management practices in some African countries especially Nigeria remains poor. Waste management practice in Nigeria has not received as much attention in the community planning process as other sectors such as energy, road and water. Waste management practices in the country were characterized by mere disposal under difficult health conditions such as traditional methods of waste burial, waste burning and open dumping on ground, streets, field, roads, river and stream. Open dumping along with open burning is encouraged due to irregular waste collection services by the local municipal authority. Under this situation, almost half of the scattered waste is burned in open fires to produce extreme air pollution in the community.

In Nigeria, waste management has become a major concern despite several attempts by successive governments and private organizations in that direction. That is why it is a common sight across the state to see heaps of festering waste dumps in almost every nooks and crannies of the country. Residential apartments, markets, waterways, highways, streets and undeveloped plots of land have been turned to waste dumps for many households. This is very disgusting to behold; and these indiscriminate disposal of wastes in Nigeria causes great environmental hazards and serious outbreak of diseases. This practice is very



common in major urban and semi-urban areas in Nigeria and is also known as open dumping. This practice exposes human to health risk and environmental degradation such as flooding, drainage obstruction, widespread of infectious disease, cholera, diarrhea, typhoid fever, waterway blockage which leads to infestation of flies, ticks and breeding of mosquitoes that cause malaria (Ike, Ezeibe, Anijiofor & Daud, 2018).

Meanwhile, the beauty of any environment lies on its good sanitary condition. This is so because, when an environment is clean the lives of community members are not threatened by illnesses and diseases. It promotes healthy living, enhance productivity, economic growth and development. However, human action has triggered a vast cascade of environmental problems that now threaten the continued ability of both natural and human systems to flourish. Solving the critical environmental problems of global warming, water scarcity, pollution, climate change, greenhouse gas emission, ozone layer depletion, and biodiversity loss are perhaps the greatest challenges of the 21st century that require adequate attention from all and sundry. According to recent data from World Bank, the global municipal solid waste generation is estimated to rise to 3.4 billion tonnes per year, compared to the current 2.1 billion tonnes by the year 2050, which poses a great threat to the survival of human existence (World Bank, 2020). Nigeria with the population of 197,848,805 million people (population equivalent to 2.57% of the total world population) with geographical landmass of 923,768 sq.km (NPC, 2006), thirty-six states and federal capital territory is one of the most populous nations in the world and the most populous nation in Africa. The country is one of the largest waste producers in Africa, as it generates more than 32million tons of waste annually while only 20-30% is collected and 70% are dumped in unsafe places or burnt (Ogunniran, 2019).

Furthermore, the city of Ibadan, the capital of Oyo State was ranked as the dirtiest city in the world in 2011, with the life expectancy of 47years which is the lowest in the world (Ikpeze, 2014). This shows the debilitating state of waste management practices in the state. Similarly, Amasuomo and Baird, (2017) asserts that inefficient and or irregular collection; negative attitude and unsafe disposal are some of the characteristics of waste management in Oyo State in particular and Nigeria as a whole. Oyo State Solid Waste Management Agency (OYOWMA) including private companies saddled with the responsibility of waste management were only popular in the city, the impact of their activities is only felt in the state capitals, whereas other communities in the less-city, semi-urban or rural area were left uncared for, giving them the opportunity to engage in waste burning or open dumping.

The complexities associated with waste management in Nigeria led to the establishment of several environmental regulatory agencies in the early 1980s. For instance, the Federal Environmental Protection Agency (FEPA) was established in 1981 by the regime of former President Shehu Shagari, as regulatory agencies to oversee the production and generation of wastes in Nigeria, utilizing various processes involved in both human and environmental resources to mitigate the myriad of waste management challenges (Olukanni, Pius-Imue & Joseph, 2020). Similarly, Major General Muhammadu Buhari enacted the environmental sanitation programme in 1984, as part of the War Against Indiscipline (WAI) campaign. The law was enacted with the aim of instilling discipline, social order, morality and cleanliness among Nigerians. Amasuomo and Baird, (2017) observed that although the public are urged to partake in the monthly environmental sanitation exercise to clean up the city, but the efforts of the residence have not been complemented with the provision of disposal sites and sustainable waste management practices in Nigeria. However, recent studies revealed that environmental sanitation exercise achieved little or no significant impact in the lives of common masses, as the care-free attitude towards open dumping and waste burning continues unabated in the local communities. This problem persists throughout the country (Aderogba, 2012).

It is worth noting that the nation has not been able to define a proper waste management practice that is indigenous, affordable, environmental friendly and sustainable for its citizenry. Open dumping at undesignated dumpsites and open burning of waste are still widely in use, lending little or no emphasis to recycling method which is seen as being alien to our culture and traditions. Recycling method on the other hand, is the process of turning waste into valuable materials. It is a waste management practice that promote healthy living, enhance productivity, economic growth and sustainable development. Therefore, creating a sustainable community development requires adequately investing in modern waste management technologies such as recycling facilities and plants by the Oyo state government and private companies, with focus on capacity building and training of the masses on proper waste management practices. No doubt, this will enhance standard of living and economic growth of the state, where citizens will become



responsible and responsive to the development of their communities without being waiting for the government.

Concept of Waste and Waste Management Practice

Waste is any substance or material which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled and as such lost its usefulness. It could be liquid or solid form and could be hazardous or non-hazardous, biodegradable or non-biodegradable (Nwosu & Chukwueloka, 2020). Waste has been described as materials that people want to dispose of even when payments are required for their disposal (Amasuomo & Baird, 2016). It is the process of effective supervision and handling, keeping, collections, conveying, treatment and disposal of waste in a manner that safeguard the environment and public health. No wonder why Ikpeze (2014) posited that municipal waste management is the collective process of sorting, storage, collection, transportation, processing, resource recovery, recycling and disposal of waste. Not only will the volume of the waste be reduced, the method opens up other avenues where waste can be revalued and convert into other purposes before disposing of the remaining residual into final disposal site or landfill.

Types of Waste Management Practices in Ibadan, Oyo State, Nigeria

Waste management practices that exist in Ibadan, the capital of Oyo state are highlighted and discussed as follows:

Open Air Burning: Disposing of waste items by open burning is the commonest waste management practice by residents of Ibadan, Oyo State, Nigeria. In fact, it has been a way of life for many people in Ibadan. Many grew up with the background burn barrel or open space for burning waste not knowing that the materials contain harmful chemicals which are released to the atmosphere when burned. Open air burning can negatively impact environment and health thereby causing many respiratory diseases such as asthma, emphysema, chronic bronchitis and nervous system disorder have been linked to it. The problem is of special concern to children, the elderly and individuals with compromise immune system (Iyanda & Olaniyi, 2014). Waste burning remains one of the most waste management practice in the state with attendant environmental effects of climate change, global warming, ozone layer depletion, greenhouse gas emission and loss of biodiversity, in which many of the perpetrators are unaware of.

Open Dumping: Open dumping is the crudest means of disposing of waste and it is mostly practiced in semi-urban settlements, undeveloped urban areas or less-city and rural areas. Dumping of waste inside bush, open space or on the main road is common most especially among the masses in Ibadan. Open dumping method of waste management is a commonly adopted method of disposal in Nigeria and other developing countries, which involves people disposing of their waste on open grounds most often indiscriminately, they are generally unsanitary, unsightly and smelly, attracting rats, insects, snakes and flies (Nwosu & Chukwueloka, 2020).

Stream Dumping: Dumping of waste inside the gutter, drainage or stream is also a common waste management practice most especially among the masses in less-city, semi-urban or rural area. Ibadan is known for its commercial activities, large population, industrialization, urbanization, land demand increase and change in choice of lifestyle, results in acute problem of increase in consumption and production of waste that put drain on waste management authorities in the area of effective generation and management of municipal waste, thereby allowing residents using every available space along river banks, stream or gutters to dispose of their waste. This practice could lead to blockage of water channels that will result to flood disaster, resulting into loss of lives and valuable properties (Olatunde & Jacob, 2020).

Uncontrolled or Illegal Dumpsites: Uncontrolled or Illegal dumpsite is clearly visible at the nooks and crannies of the state. It occurs as a result of indiscriminate open dumping which usually results to loss of aesthetic beauty of the community, endangers man and the environment, causing the spread of diseases and the pollution of the entire environment (Nwosu & Chukwueloka, 2020).

Controlled Dumpsite: Oyo state has ten (10) controlled dumpsites, four dumpsites are located in Ibadan Metropolis such as Akinyele, Ido, Oluyole and Ona-Ara local government areas while the remaining six dumpsites are located at the Oke-ogun axis of the state. Controlled dumpsite is a method of disposing of all kinds of waste in a designated area of land by waste collectors and it is usually controlled by the State Government, Local Government Authorities or Waste Management Agency (Abah, 2016). However, Kofoworola, (2007) and Nwosu & Chukwueloka, (2020) posited that despite being a controlled dumpsite,



proper treatment of waste does not exist, as such, collected waste that are transported to dumpsites are burnt most often to reduce the volume of waste which results in air pollution and the release of harmful gases to the atmosphere.

Informal Recycling Method: Recycling in Nigeria is done as an informal sector comprising scavengers or waste pickers who try to make a living through scouting for valuable materials like paper, plastic, glass, metal, can etc. This process though done at an informal level has helped in the reduction of the volume of waste disposal. Meanwhile, studies revealed that informal recycling practice exists in every nooks and crannies of Oyo State and Nigeria as a whole, where waste pickers or scavengers especially young adult, women and children make a living through salvaging recoverable materials from waste disposal sites with bare hands and no form of protection, they are therefore exposed to toxic materials such as needles, bandages and other refuse from hospitals, which exposes them to infectious diseases such as HIV & AIDS, and hepatitis (Ike et al, 2018).

Challenges of Waste Management Practices in Oyo State, Nigeria

Several studies have highlighted many problems as the challenges facing waste management practices in Oyo State and different cities across Nigeria. Some of these challenges are discussed as follows:

Poverty: According to Viljoen, Schenck, Blaauw, & Grobler (2021) poverty plays a major role and have direct link to waste management practices. The implication of being poor is that many of the residents in the community cannot afford to buy garbage bins or pay for waste charges by waste management authority. In his study, one of the respondents admitted that poverty in their community is a major cause of the environmentally unfriendly waste disposal practices. He stated that, for many of the poor, waste management is not their number one priority, as they only care about their immediate survival and where to get their next meal. The situation has led to the observed presence of littering and indiscriminate dumping prevalent in the neighborhood, causing serious public health issues and posing a high environmental risk to the community.

Lack of Accurate and Reliable Data: Accurate and reliable data aids informed decision for sound planning by the governments. Regrettably, accurate and reliable data are lacking in most low-income countries. There is a lack of standard methodologies and measurements; ones that exist are neither comprehensive nor consistent (UNEP, 2015 in Narayan, Marks, Meierhofer, Strande, Tilley, Zurbrugg & Luthi, C.2021). Authorities rely on waste estimates based on the volume of vehicles used for collection, despite the fact that collection coverage is limited and thus no actual data on waste generation can be inferred.

Low Level of Environmental Awareness: Amasuomo & Baird (2017) pointed out that there is a wide spread of lack of environmental awareness and concern on environmental issues. They observed that the level of awareness can impact on domestic waste storage, segregation, littering and fly tipping, recycling, collection frequency among others. They concluded that the level of awareness and the attitude of the people greatly affect waste management practices in the state.

Inadequate Funding: Agunwamba (1998) noted that the low level of funding seriously hinders the operations of the waste management agencies. He commented that collection operations are sometimes cancelled or delayed due to lack of fuel for collection vehicles. He posited that waste management agencies in the country experience poor funding because they are not involved in budgetary allocations. Waste management departments are under-equipped and underfunded. Hence, it is difficult for them to employ experts in waste management, unable to purchase the needed equipment for efficient service delivery.

Inadequate Facilities and Inappropriate Technology: Inadequate waste management infrastructure or facilities and low quality of waste management services contribute immensely to poor waste management practices in Oyo state. Remote and rural areas are often characterized by poorly managed domestic waste with inadequate waste management facilities and infrastructure (Viljoen, 2021).

Inadequate Trained Personnel and Effective Monitoring: According to Amasuomo & Baird, (2017) there are just a few sanitation and environment engineers in Nigeria, with requisite knowledge, skills and technical know-how on waste generation, collection, management and practices. Most often, waste management agencies are not alive to their responsibility, lacks the requisite knowledge, skills and courage to penalized the offenders, which renders the controlling, monitoring and supervision aspects of their duties ineffective (Nwosu & Chukwueloka, 2020).

Low Level of Public and Private Participation: The “government-does-everything” philosophy of many Nigerian contributes to poor waste management practices in the country. Nwosu and Chukwueloka (2020) noted that the collection and management of urban household solid waste traditionally rests on government



agencies designated with such responsibility. Adding that for effective waste collection and management, public and private participation on solid waste generation, collection, and treatment should be encouraged and developed.

Effects of Waste Management Practices on the People of Oyo State, Nigeria

Sustainable Development Goal 12 stressed responsible consumption and production of waste which includes waste prevention, collection and management through waste reduction, reuse, recycling and recovery systems which is to be achieved by every nation by 2030. Although, inadequate solid waste management impacts everybody, the rich and the poor. The direct negative consequences fall predominantly on the poor: those who remain unserved or suffer from waste being dumped in close proximity to their homes, which increase the risks of pollutant and pathogen exposure (Narayan et al., 2021). Therefore, health, environment, economic, social and political effects of waste management practices on the people of Oyo state, Nigeria are discussed as follows:

Health Effect: Narayan et al., (2021) posits that inadequate solid waste management affects public health, the environment, and the economy at all scales from local to global. At the neighborhood and city scale, deficient service negatively impacts the health of residents through multiple pathways: Uncontrolled waste burning can cause acute respiratory diseases, uncontrolled waste allows disease-carrying vectors to breed, and trash-blocked drains contribute to flooding which usually results into loss of lives and properties. Municipal and industrial wastes that are discarded without control or treatment have adverse impacts on soil, water bodies, groundwater, and the coastal and marine environment, thereby indirectly impacting public health (UNEP, 2015 in Narayan et al., 2021).

Environmental Effect: Amasuomo and Baird (2016) asserts that waste management involves a process whereby wastes are collected, transported and disposed of in the best possible way of limiting or eliminating the harmful effect of wastes. This aspect of environmental management is as important as other public amenities or infrastructures without which the life of contemporary man would be extremely difficult. This is because studies have shown a direct link between air, water and land pollution and diseases such as lung cancer, heart disease, cholera and hepatitis. In addition, climate change and eutrophication are a direct result of water and air pollution.

Economic Effect: Waste management is capital and economic intensive most especially for under-developed and developing countries. The economic effects of managing waste are high, which most residents in low-and-medium-income countries finds it difficult to bear its resultant economic burden and are often paid for by municipal governments. Residents of these countries finds it difficult to patronize “pay as you throw” public and private waste collection companies and as such often resulted to unsafe waste management practices of burning and indiscriminate dumping of wastes (Narayan et al., 2021). A significant amount of money is included in annual budgetary allocation of the state to cater for environmental sector and waste management which could have been used for other valuable projects that will have direct revenue returns to the economy with significant impact on the lives of the residents.

Social Effects: Poor waste management practice is an affront to the dignity of the community. According to Olatunde and Jacob (2020) poor solid waste management displays an unattractive environment which has the potential to negatively affect the tourism industry, as tourists may not wish to visit the city or establish business to such a dirty and smelly environment. Study by Mensah and Enu-Kwesi (2018) revealed that there is a linkage between sanitation and livelihoods, particularly for the poor. Safe sanitation leads to improved health which makes it more possible for people to take initiatives and utilize their assets for improved livelihoods and enhanced productivity.

Political Effect: Poor waste management practices are more often borne by lack of political will by the government towards a marginalized group such as racial minorities, women, and residents of developing nations. The trans-boundary movement of waste practiced by most European countries, is a system where a significant amount of wastes flows from developed countries to developing nations. Most often developing nations were at the receiving end of this environmental menace that poses a great threat to the socio-economic, environmental, cultural and political development of such countries. African countries are among the prime destinations of trans-border wastes in both formal and informal routes (Bimir, 2020).



Alternative Waste Management Practices in Oyo State, Nigeria

In view of the prevalent challenges and effects of traditional waste management practices, it is pertinent to review alternative waste management practices for the overall sustainable community development in Oyo state, Nigeria.

Open Landfill: An open Landfill is a municipal solid waste management technology technique, where a landfill located in an area is designated for the municipal solid waste in a way it does not pollute the surrounding environment especially ground water (Muhammad et al., 2021). According to World Bank, the generation of municipal solid waste is anticipated to rise to 3.4 billion tones by 2050. However, about 70% of the waste end ups in landfill and dumpsites (Viljoen et al., 2021).

Sanitary Landfill: A sanitary landfill on the other hand is arguably the most desired waste management option in reducing or eliminating public health hazards and environmental pollution. The landfill is the final disposal site for all forms and types of waste after the recyclable materials must have been separated for other usages and other biodegradables have been extracted from the waste for the use as compost, heat, or energy; or after incineration. These extractions can be done at household level or Material Recovery Facilities (MRFs) operated by the government or private individuals (Muhammad et al., 2021).

Recycling Method: Recycling is the turning of wastes into valuable materials or products. It involves the process of sorting or separation of waste, collection and transportation of waste materials, manufacture into new products, and the purchase of those products, which may themselves be recycled. The concept of waste recovery, recycling and waste to energy is relatively new in the practice of waste management in Nigeria (Arogundade, 2020). These methods have the potential of attaining the Sustainable Development Goals relating to decent jobs, no poverty, zero hunger, sustainable environment, save energy and waste reduction which could serve as a lasting solution to the electricity challenges of the country.

Composting: Composting is a biological process whereby regular introduction of air by mechanical turning stimulates aerobic microorganism materials such as manure to a more stable materials similar to humus. It is a suitable way of recycling organism in an environmentally friendly manner (Arogundade, 2020). Also, Nathanson, (2020) defines waste composting as a biological process in which the organic portion of waste is allowed to decompose under carefully controlled conditions. Microbes metabolize the organic waste material and reduce its volume by as much as 50 percent. Composting offers a method of processing and recycling both garbage and sewage sludge in one operation in an environmentally manner (Muhammad et al., 2021).

Incineration: According to Muhammad et al., (2021) is one of the widely used technologies for municipal waste management in Nigeria and the technique is solely depending on the combustion of waste at high temperature. Incineration is the most cost-effective technique for waste management in Nigeria which is seldom applied in various hospitals where medical wastes are incinerated at minimal scale. Incineration is capable of reducing the organic content of the waste; destroy contaminants and organic pathogens of the waste, reduce the volume of the waste and preservation of raw materials and resources.

Plasma arc and Gasification: Plasma arc and gasification is the waste-to-energy technologies. Waste-to-energy is an energy recovery process that converts chemicals from waste residues into practical forms of energy like electricity, heat, steam or ash. The World Energy Council (2016) reports that according to the current rate of waste generation, global waste is estimated to reach 6million tonnes/day by 2025, so increasing utility scale waste-to-energy plants using municipal solid waste or agricultural waste would be a constructive way to deal with waste globally. Therefore, waste-to-energy technologies that process non-renewable waste can reduce environmental and health damages while generating sustainable energy (Nathanson, 2020).

Zero Waste: According to Zero Waste International Alliance (2018), zero waste is the conservation of all resources by means of responsible production, consumption, reuse and recovery of all products, packaging, and materials without burning them, and without discharges to land, water or air that threaten the environment or human health. The cradle-to-grave is a linear model for materials that begins with resource extraction, moves to product manufacturing, and ends by a “grave”, where the product is disposed of in a landfill. Cradle-to-grave is in direct contrast to cradle-to-cradle materials or products, which are recycled into new products at the end of their lives, so that ultimately there is no waste. The cradle-to-cradle model is a zero waste sustainable approach of waste management (Olukanni et al, 2020).



Conclusion

Sustainable development refers to meeting the needs of the present without comprising the future generation in meeting their own needs, while sustainable community development refers to judicious uses of community resources to meet the current needs by ensuring that adequate resources are available for future generations. It seeks better quality of life for all its residents while maintaining nature's ability to function over time by minimizing waste, preventing pollution, promoting efficiency and developing local resources to revitalize the local economy. No doubt, sustainable environment is germane to community development, because environment is the reservoir of renewable and non-renewable resources that needs to be explored and harnessed in a friendly environmental manner for the development of individuals and groups within the community.

Modern waste management practices have now seen community waste as resources that is capable of creating jobs for community members through recycling system, improving healthy living, and enhancing economic growth and development. Therefore, achieving sustainable community development means creating sustainable environment, sustainable employment and sustainable management of natural resources for economic growth. Sustainable employment includes turning wastes into resources (recycling); improving efficiency with regard to energy and materials; converting to greater reliance on renewable energy sources; and increasing community self-reliance. The study concluded that a clean, serene and virile environment through efficient waste management practices have the potential to contribute immensely to the socio-economic growth and sustainable community development of Oyo state and Nigeria at large.

The ways forward

The study therefore suggested that:

1. Alternative waste management practices of 4Rs i.e reduce, reuse, recovery, and recycling, should be adopted for effective waste management practices in Oyo state, Nigeria.
2. Adequate budgetary allocation and fund should be provided for Oyo State Solid Waste Management Authority (OYOWMA) by both local and state government.
3. Public and private participation should be encouraged while private waste collection companies should charge moderate fee to encourage patronage from the public.
4. Government in partnership with private companies should invest heavily in recycling business to create jobs for teaming youths and to enhance community development.
5. Recycling plants and facilities should be established in each local government, federal constituency or senatorial district of the state, in order to promote sustainable waste management practices that is environmentally friendly in line with global best practices.

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PARENTAL SOCIO-ECONOMIC STATUS AND EDUCATIONAL LEVEL AS CORRELATES OF PORNOGRAPHY ADDICTION AMONG PUBLIC SECONDARY SCHOOLS ADOLESCENTS IN AKOKO SOUTH-WEST AREA OF ONDO STATE, NIGERIA

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Abstract

The suspected rate of pornography addiction among secondary school adolescents is giving education stakeholders great concern. This study, therefore, investigated the roles of parental socio-economic status and level of education in predicting pornography addiction among public secondary school adolescents of Akoko South West Area of Ondo State. To guide the study, one research question was raised and two hypotheses formulated; and descriptive survey research design adopted. The population consisted of all public secondary school adolescents of Akoko South West Area of Ondo State, while the study sample consisted of 200 of them. Self-constructed research instrument on four likert scale were used; and data collected analysed. Finding revealed high level of pornography addiction among secondary school adolescents with mean±standard deviation of greater than 2.5 ± 0.925 . The study also revealed significant positive correlation ($r=0.142$) between parental socio-economic status and secondary school adolescents' pornography addiction; as well as, non-significant positive correlation ($r=0.038$) between parental educational level and secondary school adolescents' pornography addiction at $p < 0.05$ level of significance. It is therefore concluded that public secondary school adolescents of Akoko South West Area of Ondo State are pornography addicted; and both parental socio-economic status and level of education are correlates of pornography addiction among these adolescents. It is thus recommended that parental internet mediation, as well as school-based sex education program be organized in order to curb this unwanted trend among our adolescents.

Keywords: Addiction; Adolescents; Educational level, Pornography; Socio-economic status

Introduction

There are suspicions and concerns these days that many adolescents open to corrupt or pornographic sites on the internet, as well as books, and glue themselves to these immoral pictures, taking in every inch of what they see and arousing otherwise dormant sexual instincts (Oluakanwa, 2011). Adolescents' view of pornography has continuously increased over time and the age of first exposure to sexually explicit materials has also been getting younger (Koletić, 2017).

The estimates of prevalence rates have varied, but national representative surveys of adolescents in the USA have found that 68.4% reported exposure to online pornography (Raine, Khouja, Scott, Wright & Sowden, 2020). Another study in the USA found 42% of youth between the ages of 10 and 17 reported viewing online pornography (Hasking, Scheier & Abdallah, 2011). They also continuously watch immoral programmes, home videos/films on the television and/or handset, which have made many of them to become promiscuous and live like harlots. Thus, rapes, sexual harassment, seductive display of body parts, indecent dressing, violent penetration by multiple men, ejaculating on a female face, anal intercourse, multiple sex partners, bondage, sadism, masochism, racism, bestiality, rape, prostitution, and child abuse are rampant nowadays among them (Bikila, Dida, Bulto, Debelo & Temesgen, 2021). **Abiodun, Akinkunmi & Okungbowa** (2015) have also reported involvement of adolescents in pornography in Ondo town, Nigeria. This study consequently investigates “parental socio-economic status and level of education as correlates of pornography addiction among public secondary school adolescents of Akoko South West Area of Ondo State.

The great increase in internet usage has brought with it ubiquitous access to online pornography, defined as accessing sexually explicit content on the internet intended to sexually arouse the viewer. Triggered by biological, social, and cognitive changes, the normative development of sexuality that reaches its peak during adolescence, sexual curiosity and an increasing need for sexual information, adolescents tend to be more susceptible to exposure to pornography (Habesha, Aderaw & Lakew, 2015). Adolescents' exposure to pornography has raised concerns in light of potential risks to adolescent development (Rodenhizer & Edward, 2019). Behavioral science research has shown that exposure to pornography can



influence youth sexual attitudes, which, in turn, impact their sexual behaviour (Dwulit & Rzymiski, 2019) and socio-emotional functioning, and as a result, adolescents' exposure to pornography has been a great concern for parents, teachers and the general public.

Recently, tablet computers, smart phones, and other electronic devices have added ubiquity to electronic communication and the Internet. For example, a recent study found that one in three teenagers sends more than 100 text messages a day and 15% send more than 200 a day, or 6,000 a month (Weber, Quiring & Daschmann, 2012). Four percent of teens have sent a sexually suggestive text message, which are often nude photographs, and 15% of this age group has received a sexually suggestive text. Internet pornography sometimes creates demands and expectations in terms of how to behave in sexual relations. Expectedly, while this has significant influence on their sexual attitude their risk-taking tendency means that adolescent would be more than willing to experiment what they watch than other individuals within other developmental brackets. This situation seems more pertinent given the fact that the revolution in communication which makes available sophisticated phone at cheaper rate as well as ease in accessing internet without limitations increased the probability for adolescents to take to online pornography.

Exposure to pornography may set unrealistic beliefs and attitudes about sex. Adolescents may expect what they observe in pornography to be similar to real-world sexual experiences. It may also influence them to perceive sex as primarily physical and casual, rather than emotional and relational. Moreover, research suggests that the more adolescents use pornography, the more they experience sexual preoccupation (Nieh, Chang, Chang, Chiang & Yen, 2019) and sexually permissive attitudes. These attitudes may include beliefs that women are sex objects rather than relations or partners. Adolescent males, in particular, who had been exposed to sexually violent media, reported more accepting attitudes towards teen dating violence and sexual violence. Exposure to pornography may also impact sexual behaviours. These behaviours includes but not limited to, more frequent engagement in casual sex, high-risk sexual behaviours such as sex with multiple partners and substance use during sex. Adolescents may also exhibit a higher tendency to have sexual intercourse and experience sexually coercive behaviour.

Adolescents who are exposed to frequent pornographic material may also exhibit higher levels of sexual aggression compared with those with infrequent exposure to pornography. Furthermore, from the psychological point of view, exposure to pornographic sexual content of Nigerian adolescents can be a significant factor in early sexual activities, teenage pregnancy (unwanted pregnancy), significantly increased sexual intercourse with non-romantic friends, self-esteem and masturbation among others. Pornography addiction could as well cause decline in studying, missing classes, significant drop in grades and increased risk of being placed on academic probation. Poor integration in extracurricular activities might be associated with pornography addiction of secondary school adolescents (Giordano & Cashwell, 2017)

Also, adolescents viewing pornography could sometimes be prone to truancy, school dropout, low academic performance, deviant attitude to teachers and other school authority. It is paramount to know that adolescent pornographic viewing does not only affect the adolescent but the society at large. Based on the gravity of dangers of pornographic viewing on any nation and/or society, this study is embarked upon to investigate if secondary school adolescents in Akoko South-West Area of Ondo State watch pornography and whether parental socio-economic status and educational level are correlates. Such exploration can enrich our understanding of the factors that are correlated with secondary school adolescents' pornography addiction. And if investigation confirms relationships, this can be incorporated into prevention and intervention programs and can as well inform the design of sexual education among public secondary school adolescents.

Purpose of the Study

The purpose of this study was to ascertain the parental socio-economic status and educational level as correlates of secondary school adolescents' pornography addiction. Specifically, the study sought to:

- 1 determine secondary school adolescents pornography viewing;
- 2 ascertain parental socio-economic status as correlates of secondary school adolescents pornography addiction; and



- ascertain parental educational level as correlates of secondary school adolescents pornography addiction.

Research Question

The following question guided the study:

1 Do public secondary school adolescents of Akoko South West Area of Ondo State view pornography?

Research Hypotheses

The following null hypotheses were formulated to guide this study

- Parental socio-economic status does not correlate with secondary school adolescents' pornography addiction.
- Parental educational levels do not correlate with secondary school adolescents' pornography addiction.

Methodology

This study adopted descriptive research design of the survey type as the researcher used a representative sample to collect data to systematically describe an existing phenomenon. The population for this study comprised the entire public secondary school adolescents in Akoko South West Area of Ondo State. A simple random sampling technique was used to select the sample for this study. A total number of 200 adolescents from public secondary schools were randomly selected from randomly selected four (4) public secondary schools in Akoko South West Area of Ondo State. Stratified simple random technique was used to select 25 males and 25 females in each of the 4 randomly selected public secondary schools in Akoko South West Area of Ondo State. Self-constructed research instrument titled "Love Making Viewing, Parental Socio-economic Status and Educational Level (PSSEL) on four likert scale were used for this study. The instrument was divided into sections; section A contained personal data of the respondents, while sections B and C will contained items that answered the research questions and test the hypotheses generated. The face and content validity were ascertained by the researcher and her supervisor while test-retest method was used by the researcher to certify that the instruments were reliable and the reliability coefficients were 0.86, 0.98 and 0.95. Data was analyzed using Mean and Standard deviation for the research questions while Pearson Product Moment Correlation was used to test the hypotheses.

Results

Research Question One: Do public secondary school adolescents of Akoko South West Area of Ondo State view pornography?



Table 1:
Pornographic viewing (addiction) among Secondary School Adolescents

Items	Mean	Std. Deviation
Watching love-making movies is a way of learning maturity	2.87	.987
Watching love-making movies are common to young people	3.26	.646
Love-making movies is a form of entertainment	2.93	.871
I have watched many love-making movies in the last one month	2.48	.997
Foreign love-making movies are better than local ones	2.81	.981
The actors and actresses of love-making movies are known people to me	2.87	1.019
The actors and actresses of love-making movies are happy doing what they are doing	2.98	.891
I have favourite actors and actresses in love-making movies	2.87	1.043
I believe that love making-movies should not be only for adults	3.08	.817
I watch love making-movies for fun	2.78	.998

Table 1 results show that all the means are far above 2.5 except Q4 that is exactly 2.5 (at 1 decimal place); and this implies that there is a high level of pornography viewing (addiction) among these secondary school adolescents.

Variables	N	Df	r	Sig.
Parental Socioeconomic status	200	198	.142	.045
Pornography Addiction	200			

Table 2 shows that high parental socio-economic status has a positive correlation with secondary school adolescents' pornography addiction, and the hypothesis is therefore rejected. This implies that parental socio-economic status predicts or influences secondary school adolescents' pornography addiction.

Research Hypothesis Two: Parental educational level does not correlate with secondary school adolescents' pornography addiction.

Table 3:
Relationship between Parental Educational Levels and Secondary School Adolescents' Pornography addiction

Variables	N	Df	r	Sig.
Parental Educational levels	200	198	.038	.592
Pornography Addiction	200			

Table 3 shows that high parental educational level is non-significantly correlated with secondary school adolescents' pornography addiction; and the hypothesis is therefore rejected. This implies that parental level of education also predict or influence secondary school adolescents' pornography addiction.

Discussion of Findings

In response to research question one; do public secondary school adolescents of Akoko South West Area of Ondo State view pornography? The result revealed secondary school adolescents' pornography addiction. Overall, more than half of the adolescents covered by this survey reported that they had watched many love-making movies (pornography) in the last one month; and the response of the majority of them to all the love-making questions indicated that they are pornography addicted (See Table 1). This finding is in agreement with Pizzol, Bertoldo and Foresta (2016); Giordano & Cashwell (2017); Dwulit and Rzymiski (2019); and Häggström-Nordin, Borneskog, Eriksson and Tydén (2019), who reported up to 98% of pornography addiction/prevalence among secondary adolescents in Germany, Sweden, Poland, and Italy.

Moreover, this finding is also in consistent with Longe et al. (2007) that reported 53.1% pornographic view among 232 internet-friendly children and adolescents in south western Nigeria and also in line with Abiodun et al. (2015) who reported a higher prevalence of pornography (57.6%) among school-going and out-school adolescents in Ondo Town, Ondo State. Although the results of pornography addiction of this study is not presented in percentage however, if the observed means of 2.5 (the least) and 3.1 (the highest) (see Table 1) at 1 decimal place of the 4 likert scale of this study is converted to percentage, it will be between 63% to 78%; and this implies that there is increase in pornography addiction in South West, Ondo State inclusive between 2007 (53.1%) and 2015 (57.6%); and between 2015 (57.6%) and 2023 (78%). This increase could be as a result of increase in exposure to internet use, as well as, more availability of handset to adolescents, which has made accessibility to pornography easier, since the world is already a global village. In fact, Wolak, Mitchell and Finkelhor (2006) had earlier suggested or posited that millions of youth internet users are exposed to online pornography each year and this seems to justify the reason for the increased rate of pornography observed among secondary school adolescents in Akoko South West Area in this study.

Furthermore, the finding from hypothesis one revealed that high parental socio-economic status has a positive correlation with secondary school adolescents' pornography addiction in Akoko South West, Area of Ondo State. This implies that the financial ability of their parents or guardians to provide all their basic needs such as television, DVD video, handset and money to surf the internet aided their accessibility to pornographic viewing as it is through all these means they get addicted to pornography. This finding contradicts that of Odimegwu, Solanke and Adedokun (2002) and Brown, Halpern and L'Engle (2005), who reported that low socioeconomic status of parents (low parental income) is associated with more frequent exposure of adolescents to pornography. This difference in findings is however expected due to difference in the periods (years of gap between studies), increase in technology (increased availability of home appliances), more availability of handsets for adolescents in recent years for those whose parents/guardians can afford it, and increase in internet access or increased privacy due to some of them having personal, private room. Thus, the world being a global village has changed the narrative, and the adolescents of high



socio-economic status are now more pornography addicted than their counterparts from low socio-economic status, because they have the gadgets to access pornography via the internet more than their counterparts. It has also been adduced earlier that these adolescents get addicted to pornography as a result of easier access to the internet compared to early 20s. The difference in parental/guardian attitudes on pornography exposure may also likely play some roles, possibly some parents/guardians may be being more open-minded towards pornography.

Finding from hypothesis two revealed that parental level of education does predict or influence secondary school adolescents' pornography addiction. It suggests that low or high level of education of these adolescents is a factor that determines their addiction to pornography. This implies that irrespective of the level of education of the parents/guardians of these adolescents, once their parents are able to provide means that could get them glued to videos, films, cassettes, and internet, it becomes an opportunity for them to become pornography addicted. This is in agreement with reports from Widman, Evans, Javidi and Choukas-Bradley (2019); Bikila, Dida, Bulto, Debelo and Temesgen (2021); and Andrie et al., (2021) that parental education level is associated with adolescents' frequent exposure to pornography. However, this is contrary to previous literatures from [Chen and Peng \(2008\)](#); [Kuss, Griffiths, Karila and Billieux \(2014\)](#); and Habesha et al. (2015) who reported negative correlation or relationship between parents' educational and high problematic internet use (PIU) e.g. pornography. The difference in location/research study population could be the likely reason for the variation as their studies were carried out outside Nigeria. This contradiction once again brings to mind the possible roles difference in parental attitude might be playing in pornography addiction of their children/wards, as some of them may be more open-minded towards pornography, and not necessarily difference in level of education of their parents/guardians. A research on parental attitude towards pornography among secondary school adolescents is probably needed to establish this.

Conclusion

From this study it can be inferred that there is pornography addiction among secondary school adolescents of Akoko South West Local Government Area of Ondo State, and that both socio-economic status and educational level of their parents are correlates.

Recommendations

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

1. School-based sex education programmes should be organized as it will provide a preventive measure to minimize over reliance on informal online sex education, and also ensure that adolescents receive valid and safe sex advice and do not (over)rely on online pornographic material for such information.
2. There should be improvement in guidance and counselling services in secondary schools to help correct and rehabilitate students that had been deeply involved in pornography; and/or prevent further involvement of more adolescents in pornographic viewing through proper counselling.
3. Public enlightenment programmes should be mounted by the government at Federal, State and Local Government levels to broaden the knowledge of the populace, especially students and parents on the negative consequences of pornographic viewing among secondary school adolescents.
4. There should be parental internet mediations/monitoring so as to reduce adolescents' pornography addiction. These mediations should include; talking to their children about media content e.g. what to do or not on the internet; setting of rules and limits to restrict internet use; use of tools and software such as blocking and filtering tools as a way of monitoring and/or restricting children's internet use e.g. parents can use filter programs or other means to block some types of websites.

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QUALITY ASSESSMENT FOR INSTRUCTIONAL PROCESS IN TERTIARY INSTITUTIONS IN NIGERIA: CHALLENGES AND WAY FORWARD

By

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Abstract

Concern about quality assessment in tertiary institutions for instructional process in Nigeria is not a new phenomenon. Universities, Polytechnics, Monotechnics and Colleges of Education have always devised mechanisms for assuring the quality of their work as part of the academic tradition for instructional improvement. Tertiary education is a significant instrument for imparting positive changes in the society. It develops not only the personality but also qualities that enable the recipients fulfil certain economic and political functions. However, the quality of tertiary education as a system which serves as a mechanism of advancement is being confronted with various challenges in Nigeria. If these challenges are not nip at the bud, the main goals of education system in Nigeria may be frustrated. This paper therefore, highlighted the following issues: quality assessment of education system; challenges confronting quality assessment for instructional improvement in tertiary institutions in Nigeria. Few of these challenges include; inadequate funding, inadequate physical facilities, poor management, insecurity, teacher's quality, among others; the roles of stakeholders in ensuring attainment quality in the education system of Nigeria. Among the notable roles of the stakeholders gearing towards instructional process include; efficiency and effective utilization of education resources as well as ensuring that the benchmark minimum standard is maintained. The paper concluded that quality assessment should be properly scheduled and timely carried out by the designated agencies and that every program implemented should be assessed from time to time to be able to identify any setback arising from such a program.

Key Words: Quality, assessment, challenges, instructional process, tertiary institutions

Introduction

Concern about assessment quality in tertiary institutions in Nigeria is not a new phenomenon. Various tertiary institutions in the country, that is, Universities, Polytechnics and Colleges of Education have always devised mechanisms for assuring the quality of their programs as part of academic tradition for instructional improvement. The concern about the quality of education students receive from the Universities, Polytechnics or Colleges of Education, the quality of lecturer employed to teach students, the quality of instructional facilities has always been of topmost interest. It is in line with this that researchers, such as Ewell (2010), Asiyai (2015), Titus et al (2017) linked quality assessment in tertiary institutions in the country with students' intake, academics programs, quality of lecturers, teaching-learning process, students' experiences and political economy.

Nigeria, like other developing countries of the world recognizes education as the major instrument for effecting social, economic, military and political development; goals which can fully be attained if quality assessment is rendered in tertiary institutions. In the submission of Ossai and Nwalado (2017) education is seen as a significant instrument for imparting positive changes in the society. It does not only develop the personality but also the quality that enables the recipients fulfil certain economic and political functions and help the beneficiary achieve self-reliance in decision making and perform effectively in all tasks he or she may be responsible for (Baird, 2006). The most noticeable institution that has shaped the lives of Africans is the educational institution.

The essence of quality education is to impart in the learners the knowledge, skills, attitudes and values that would empower them solve their problems and that of their country or state. From a global perspective, economic and social development are increasing driven by the advancement and application of knowledge. According to Saint, Hartnett and Strassner (2003), education in general and higher education in particular, are fundamental to the construction of knowledge, economy and society in all nations. However,



the potential of higher education system in Nigeria is frequently thwarted by long-standing problems of quality and governance, instructional materials, insecurity among others.

The role of tertiary institutions in human development, research, and technological innovation cannot be underestimated. According to Machumu and Kisanga (2014), tertiary institutions are critical components of national development. The implication of this submission is that nations today depend increasingly on knowledge, research-based evidence, technological innovations and up-to the minute skills which are by-product of tertiary institutions. Any nation or state that is unable to develop skills and knowledge of its people and to utilize them effectively in the national economy will be unable to develop anything else.

It has been established by Rukaiyat (2014), that nations or states invest in tertiary institutions because society expects to benefit from its contribution on national development in three ways. First, society expects its tertiary institutions to produce highly skilled personnel in technology, teaching, medicine, engineering, management and other professions. Second, tertiary institutions have the responsibility of producing their own academic personnel, that is, the intellectual resources that will, through scientific research generate new knowledge and innovation to solve developmental problems. Third, tertiary institutions produce teachers, doctors, legal officers, administrators and managers for other levels of human resources through quality assessment (Faganel & Dolinsek, 2012).

Quality assessment leads to quality education (Kufi, 2013), which is represented by acquisition of concepts, talents, skills, competencies, attitudes and values. The quality of education achievable through quality assessment is the best predictor of socio-economic development of a nation. However, in Nigeria, this important agent of human capital development has suffered neglect and abuse. It is obvious that tertiary institutions of good quality are critical to Nigeria to become globally competitive.

Quality assessment involves the judgment of performance against either internally or externally defined criteria. An internal assessment in tertiary institutions is a way of assessing quality of what is actually provided by higher education institutions against external criteria by external experts. This means that internal assessment is the implementation of the school objectives. On the other hand, external assessment deals with the implementation of national objectives, which are pre-requisite to the achievement of quality in any educational institution (Houston, 2010). In the study of Hazelkorn (2011), assessment is conceptualized as an effective technology for supporting change in tertiary institutions. In some parts of Nigeria, assessment has proven to be most potent transformation agent without which many improvements that we might likely see will remain dead letters.

Tertiary institutions as pointed out by Balarabe (2009) are places designed for high intellectual functioning divergent and convergent thinking, transformation and evaluation of knowledge. According to National Policy on Education (FGN, 2014) tertiary education is the education given after post basic education in institutions such as Universities, Polytechnics, Monotechnics, Colleges of Education, Colleges of Agriculture, Schools of Health and Technology and National Teachers' Institutes (NTI). The goals of tertiary education as outlined by National Policy on Education (FRN, 2014) include; Contribution to national development through high level manpower training; provision of accessible and affordable quality learning opportunities in formal and informal education in response to the needs and interests of all Nigerians; provision of high quality career counselling and lifelong learning programs that prepare students with the knowledge and skills for self-reliance; reduction of skill shortage through the production of skilled manpower relevant to the needs of the labour market among others. The tertiary institutions have been designed to pursue these notable goals through;

1. Quality students' intake and retain rate;
2. Quality teaching and learning;
3. Number of teachers available and qualification compared to number of students;
4. Quality of administrative structure and personnel;
5. Budgetary allocation to education sector/tertiary institutions.
6. Research and development;
7. High standards in quality of facilities, services and resources;
8. Staff welfare and development programs;
9. Access to training funds such as Industrial Training Fund (ITF), Tertiary Education Trust Fund (TETFund);
10. Students Industrial Work Experience Scheme (SIWES) that is well structured, coordinated



and supervised;

11. Maintenance of minimum educational standards through appropriate regulatory agencies.

The Nigeria education system according to Oduma (2013) can be likened to tasteless scenario and experience, which in its present form, is devoided from standard, quality and functional. Tertiary institutions are unique institutions, which are differentiated from others in terms of research and other services they render to the community. Therefore, this paper focused on the following areas:

- i. The assessment of quality education for instructional process in Nigeria.
- ii. Approaches to assessment quality education in tertiary institutions in Nigeria.
- iii. Challenges of Assessment quality education in Nigeria.
- iv. The roles of stakeholders in improving assessment quality education in Nigeria.

The Concept of Quality

Quality in terms of teaching and learning as pointed out by Balarabe (2009) means acquisition of concepts, skills competencies, attitudes and values to the extent that inability to operate at assigned standard suggests poor quality. Like freedom or justice, quality is an elusive concept, which is difficult to articulate. Various scholars have defined the concept in various ways. Onu, et al (2012) argue that quality is a complex concept and there is hardly any consensus. In the submission of Ekong (2006) quality builds knowledge, skills, perspectives, attitudes and values. World Declaration on Education (2004) conceptualizes quality as a multi-dimensional concept which should comprise all the functions and activities in schools. Asiyai and Oghuvbu (2009) view quality as a measure of how good or bad the products of tertiary institutions are in terms of their academic performance and meeting established standards.

Quality according to DuBrin (1997) is a desirable attribute of a product or service that distinguishes it from the person seeking the attribute. From DuBrin's definition, quality could be said to have attribute of worth acceptance, and that good quality should possess the characteristic of conformance to expectation, requirement, excellence and value. In addition to that, it seems that all the definitions of quality share an interest in doing something well. Quality is a relative concept, which depends on a benchmark and it means different things to different stakeholders, government, employers, students, academics and society (Newton, 2010). In government, quality may connote as many students as possible who finish the program in the scheduled time with degrees of international standard. Employers may focus on the knowledge, skills and attitudes graduates obtained during their period of study. For students, quality may be connected to the contribution to individual development and the preparation for a position in society. The academics will probably perceive quality as a good academic training based on good knowledge transfer, a good learning environment and a good relationship between teaching and research. It is the contribution that investment in education makes to the gross national product.

Quality in the context of this paper can be conceptualized into four discrete, but interrelated categories, namely; exceptional, perfection or consistency, fitness for purpose and transformative. The exceptional notion of quality accepts as axiomatic that quality is something special, which can be seen as distinctiveness, excellence or passing a set of required standards. The perfection (or consistency) approach to quality focuses on process and sets specification which it aims to meet perfectly, with two dictums: zero defects and getting things right first time. Fitness for purpose, which is adopted by most analysts and policy-makers in tertiary institutions, means that quality is judged in terms of the extent to which the product or service fits its stated purpose(s). The definition, "quality as transformation" does more justice to education as a process which places learners at the centre of the action. The learners get added value, and transformation lies in added value (Harvey & Green, 1993). When quality education is delivered to meet set standards, the products of education should be able to perform well in real life situation. "When quality is low, performance cannot meet the set standards. Hence one can say that the quality of education has declined below set standard" (Asiyai, 2013: 161).

Assessment of Quality Education for Instructional Process

The situation of Nigeria educational system and quality assessment for instructional improvement is becoming worrisome as her policy centres on the quantitative rather than qualitative. There is a general feeling that the quality of education rendered in Nigeria with curricula that are limited to parochial concerns may no longer be adequate in the face of prevailing global situation. Ossai and Nwalado emphasize that the curricula they contented have outlived their usefulness and values of today's Nigeria and her education system. Quality education according to Asiyai (2013) is one that is relevant to the needs and aspiration of the



society. Blessing, Thorm-Otuya and Inko-tariah (2016) posit that quality education is a veritable tool for scientific discoveries, national development and transformation of society. They stress further that quality education transforms human capital to be creative, and to be an agent that can precipitate radical changes in a society.

Quality education is very expedient for national development in Nigeria and it understands the past, relevant to the present and has a view for the future (Blessing et al, 2016). The quality of education determines the quality of man-power and their products. This is why Blessing et al (2016) affirms that all nations of the world owe their level of development to the level of their educational system. Faganel and Dolinsek (2012) pointed out that for any nation or state to be considered developed, about 70% of her citizenry must be educated. Quality education is expected to address critical issues like dignity of labour, quality leadership and committed citizenship, industrial harmony, political stability, religious tolerance, self-reliance and security. These are seriously lacking in Nigeria. In support of this, Enefu, Okolo and Hussaini (2019) posits that lack of quality education can be more dangerous than no education, and that without quality, education has no value. Lack of quality education in Nigeria is one of the major reasons for security challenges rampaging the country at present. Quality education according to Balarabe (2009) is the best predictor of the socio-economic development of any nation. Balarabe stresses further that in Nigeria, this important agent (quality education) of human capital development has suffered neglect and abuse. The evidence is that, the more one looks into history, the more the quality; and the more changes, the poorer the quality.

Parameters for Measuring Quality Education

The benefit of quality education cannot be over-estimated because of its numerous impact on socio-economic, political, religious and cultural development. It is a dynamic concept whose indices may vary based on the needs and aspirations of a country or state. Asiyai, (2013) affirms that a quality education is one that addresses the learner and can adapt to meet the learner's need. According to Ossai and Nwalado (2017) quality education can be measured in terms of quality of input, quality of output, quality of content, quality of process, availability of instructional materials and examination results. This paper therefore, discussed quality of input, quality of output, quality of content and quality of process to be adopted for measuring quality education in Nigeria.

Quality of Input: No education system of any nation or state can rise above the quality of her teachers. Teacher is the most important of all the inputs that go into education system. Education in Nigeria today seems to lack, not only quality programs but also dedicated and committed quality teachers. Most of the teacher education institutions in the state produce teachers that are deficient in content and methodology. Therefore, there is need for the government of Nigeria as a matter of urgency, to embark on quality teacher education through the review and overhaul of the curriculum for teacher education and paying of special attention to the quality of candidates being admitted to the teacher education programs.

Quality of Output: The quality of education is a function of resource inputs and output, which includes academic achievement of the students, the Monitoring of Learning Achievement (MLA) project. In Nigeria, an average public primary or secondary school child can neither read nor write properly. This is due to poor educational system resulting from poor input.

Quality of Content: Quality education of a state or country can be measured based on the curriculum content of the educational system of that state or country. What is mostly needed in Nigeria educational system is nothing but a re-ordering of the curriculum content, that is, the intended curriculum and an enrichment of the achieved curriculum and the implementation with focus on relevance and functionality. According to Ossai and Nwalado (2017), the achieved curriculum connotes the knowledge, skills and attitudes that are achieved, while the implemented curriculum is the translation of the curricula activities into reality in classrooms, laboratories, workshops and other settings for learning, considering the language provisions in the National Policy on Education (FRN, 2014).

Quality of Process: Quality of process implies student/teacher interaction, level of learner participation and engagement in learning. In Nigeria educational system, teacher dominate the lessons and pose few open-ended questions. Group work which encourages discussion is rarely used. In some parts of Nigeria, girls are not encouraged to go to formal western educational setting rather they are being encouraged to go to Islamia school.



Approaches to Assessment Quality in Tertiary Institutions

Different ways of operating assessment quality are found in who assesses, what is assessed, and how is it assessed. First, the “who” question can be divided into a whole set of subsidiary questions: who initiated the assessment? Who carries it out? In other words, it involves the owner of the quality assessment schemes and the practical evaluators. In practice, assessment quality may be set up by governments, or collectively owned by the institutions, or owned by completely independent bodies. In this case, external evaluators should have specific expertise in terms of the focus of the evaluation, such as academic and management. Second, the “what” question is partly a matter of level: the whole institution, a faculty or department, a subject or program and individuals. It is also a matter of what do we assessed: enrolment system, equity, retention rate, the number of resource persons available and their qualifications compared to the number of students, quality and efficiency of administrative structures and personnel budgetary allocation to education, availability of teaching and learning facilities and instructional materials, research, management among others. Third, the “how” question involves the procedures and methods of implementing the assessment quality, as well as the ways of producing and using the evaluation results, which should be voided of political or religious sentiment.

The different approaches to assessment quality discussed above are summarized in Table 1. It is worth mentioning that factors which differentiate the approaches to assessment quality are often interrelated. For instance, performance indicators often lead to quantitative evaluation results and financial consequences are often associated with ambiguous, preferably quantitative and comparable results. This can be emulated by Nigerian government.

Table 1:
Different Approaches to Assessment Quality in Higher Education

Who	Evaluation’s owner	State, institutions collectively, independent bodies.
	Evaluators	Representatives with expertise.
What	Evaluation levels	Institution, faculty/department, subject, individuals.
	Evaluation focuses	Teaching, research, management.
How	Evaluation methods	Performance indicators, peer review.
	Evaluation criteria	Standards-based, mission-based.
	Evaluation results	Quantitative, qualitative, consequences of evaluation results.

Source: Ewell (2010)

Challenges to Assessment Quality Education

Several factors pose as challenges of quality assessment in higher education in Nigeria. These are categorized under four divisions; Institutional factors, Tecno-economic factors; political factors; Students' factors; Socio-cultural factors. These factors, as established by Onu et al (2012) are as follows:

Institutional Factors

- i. Lack of resources/teaching facilities
- ii. Poor leadership
- iii. Inadequate/ poor quality of teaching staff

Tecno-economic Factors

- i. Poor funding/mismanagement
- ii. Low ICT Knowledge/content
- iii. Inadequate/weak quality control

Political Factors

- i. Poor policy implementation



- ii. Politicization of education and educational institutions

Students Factors

- i. Admission policy
- ii. Lack of interest/wrong choice of course
- iii. Lack of commitment/examination malpractices
- iv. Get rich quick syndrome

Socio-cultural Factor

- i. Brain drain due to insecurity

Lack of Resources: Quality education is a function of quality and quantity of human and material resources put in place in institutions of learning. Lack of resources such as science laboratories, workshops, students' hostels, libraries and electricity will definitely affect the quality of education. For delivery of quality education, these facilities must meet the minimum standard specified by the National Universities Commission (NUC), the National Commission for Colleges of Education (NCCE), and the National Board for Technical Education (NBTE) as pointed out by Ossai and Nwalado (2017). Unfortunately, in most institutions of higher learning in Nigeria, the lecture halls are overcrowded with majority of students standing at the corridors during lectures. In addition to that, most students of higher institutions in Nigeria especially in the northern part of the country are learning in dilapidated buildings which are poorly ventilated, illuminated, furnished and environmentally depressing and disabling situations. Libraries in most higher institutions in Nigeria are stocked with obsolete textbooks. These factors are threat to quality attainment in higher institutions in the country.

Poor Leadership: Poor leadership both at the government level and the institution level have been the major challenge to quality in higher education in Nigeria. The government has not displayed enough commitment to quality education development. This is made manifest in the budgetary allocation and disbursement to education in the state, non-involvement of academic staff union members in the decision making, dismissal of academic staff without following due process, high handedness and tyranny of some administrators, non-implementation of staff promotion, among others.

Inadequate/Poor Quality of Teaching Staff: No nation or state can rise above the quality of its teachers because teachers determine the quality of education as they transmit educational policies into practice. In the submission of Ossai & Nwalado, (2017) it was reported that without adequate number of inspiring, well-knowledgeable teachers and fully prepared to meet their responsibilities in classrooms, we cannot have quality education. Despite the importance of quality teachers in the attainment of quality education, some institutions of higher learning in Nigeria are short of qualified lecturers to adequately handle teaching and learning activities because the appointment of teaching staff sometimes does not follow a meritocratic process but by politics. In a situation where there are thousands of students to be handled by a single lecturer, output may be poor.

Poor Funding: The problem of Inadequate funding is the most critical challenge to the attainment of quality in Nigeria. Some institutions in the state are unable to build standard lecture halls, students' hostels, equip laboratories. Despite all effort made, the government has not shown enough commitment towards adequate funding of higher education. No system can stand without adequate financial support. Every plan is based on finance, where plans are beautifully and theoretically made, its success of implementation lies on funding. Higher institutions in Nigeria have been surmounted by inadequate finance particularly to engage in feasible assessment. Inadequate funding can bring down the quality of output.

Poor Policy Implementation: It has been established by Ossai and Nwalado (2017) that poor policy implementation poses a great challenge to quality attainment in education. Nigeria as a country has a robust policies written by seasoned scholars and these policies are written for both present and future benefits of the citizens. However, the problem arises when it comes to translating the theory into policy by the implementers. In Nigeria, several factors could be responsible for smooth implementation of educational policies and thereby resulting to poor quality delivery. Such factors include; underfunding of education and injudicious utilization of available funds by implementation agencies. When funds meant to deliver quality education is misappropriated, the education which the learners receive becomes worthless.

Lack of ICT Knowledge/Content: Lack of information communication technology is another challenge to quality higher education in Nigeria. The government as part of her educational reform effort, has adopted information technologies in all levels of education since the ICT in education is meant to improve teaching



and learning, enhance higher education research, enhance cooperation among peers and improve quality education. Unfortunately, in most higher institutions in the country, there is acute shortage of computers, multi-media projectors, electronic white boards and automation of lecture halls and lecturers' offices. Some institutions may not even link with functional internet connectivity. Through such media, information and relevant school practices which are unknown to teachers and students and which cannot be found in textbooks can easily assessed for use. This will continuously link to higher efficiency, higher productivity and higher educational outcomes.

Brain Drain due to Insecurity: The education sector in Nigeria has been confronted with the challenges of insecurity, which led to destruction of many schools, resulting to the closure of some tertiary institutions. This has grossly affected enrolment and retention. The insurgency, particularly in the northern part of the country has also led to mass exodus of talented lecturers leaving the educational sector for another sectors of economy. Some of the brilliant lecturers left and joined politics, while others joined the business world. The insurgency has drastically slowed down all human activities and subsequently development in all aspects of life especially education. The destructive activities of insurgents, particularly in the northern part of the country from 2009 to date have affected assessment quality drastically. In the midst of the crisis, people were more concerned with survival. People were fearful, frustrated, confused and psychologically and physically devastated to the extent that when specialist were sent on assessment exercise, most of them stay at home and write fake reports without visiting the areas of concern. The few that risked their lives and visited the higher institutions were either abducted, killed or molested. All these affect assessment processes and their qualities. This is a serious challenge to the attainment of quality education in Nigeria.

Examination Malpractices and Other Vices: Another challenge to quality education in Nigeria is the increasing activities of examination malpractices in the institutions of higher learning. Many students in tertiary institutions in the country cheat openly in the examination and threaten lecturers when caught. As a matter of fact, some states in the country were mentioned whose students were grossly accused of impersonation in the 2019 UTME. This is definitely a threat to quality education in Nigeria.

Roles of Stakeholders in Improving Quality Education

Attainment of quality education in Nigeria requires continuous and holistic improvement which necessitates cost sharing among stakeholders both internal and external. Internal stakeholders include government who is the owner of tertiary institutions, students on whom all the activities of the education systems are centred, academic staff who are constantly engaged in teaching and research, administrators who manage the affairs of the institutions by providing leadership, non-academic staff and other management staff. The external stakeholders include National University Commission (NUC), National Commission for Colleges of Education (NCCCE), National Board for Technical Education (NBTE), non-governmental organizations, parents, employers of labour among others.

1. Internal Stakeholders

i. The Institution Administrator (The vice chancellor, Rector, Provost)

- Maintenance of benchmark minimum standard
- Provision of effective leadership
- Proper implementation of policies
- Ensuring that only quality staff especially academic is employed
- Promotion of quality research culture
- Ensuring that institution mission statement is vigorously pursued by all stakeholders

ii. The Government and Institution Governing Council

- Establishment of relevant funding policy
- Implementation of relevant curriculum
- Defining strategic vision for the institution
- Formational of functional policy

iii. Institution Admission Board

- Ensuring only qualified candidates are admitted into the institution.
- Maintenance of conducive and healthy teaching/learning environment
- Provision of learning facilities such as halls or auditoria, libraries, laboratories, staff offices, etc.

iv. Academic and non-Academic Staff

- Adoption of a good ethics and habit



- Ensuring effective classroom management and control during instruction
- Encouraging collaborative work, innovation and creativity among students
- Provision of guidance to students
- Communicating with the students' parents on their learning progress
- Avoiding unethical conducts such as poor teaching, aiding examination malpractices, misplacing students' scores
- Monitoring and evaluating students' learning.

v. Students

- Involving in decision making
- Resume at their institutions at the expected date
- Attend lectures regularly

2. External Stakeholders

i. National University Commission (NUC), National Commission for Colleges of Education (NCCE), National Board for Technical Education (NBTE).

- Regular monitoring of all the activities of the institution in the state.
- Ensuring that only accredited programs are run by the institution
- Set minimum standard regarding qualification of teachers, the quality of teaching, number of students to be admitted into the institution based on the institution carrying capacity
- Conduction of necessary assessment exercise.

ii. Non-Governmental Organizations (NGOs)

- Involving in monitoring of teaching activities
- Involving in the institution decision-making
- Involving in communal efforts such as, donation of land, building of auditorium, students' hostels, construction road networking within the institution, etc.

iii. Parents

- Adequate provision of materials needed for their children academic activities
- Provision of spiritual and moral supports for their children.

Therefore, it can be deduced from the reviewed literature that all is not well with the educational system of Nigeria. It was observed that quality and standard should be restored through quality assessment that is not based on religion or ethnicity.

Way Forward

1. Adequate funding of the education sector as this is required and necessary to maintain both the human and material resources of the sector.
2. Effective monitoring of the management funds allocated to the education sector as this will close room for diversion of funds meant for the development of educational institutions in the state.
3. Adequate remuneration and motivation of the academic staff in terms of promotion as at when due followed by the benefits of the promotion. Doing this will make the teachers committed and dedicated to their duties without embracing simultaneous business activities to enhance their living.
4. There should be effective and consistent supervision and monitoring of school system to confirm the level of compliance to the quality assurance.
5. Employment of staff especially academic should undergo a meritocratic process. The teachers should be properly interviewed. Admission of candidates into the institutions should also base on merit.
6. Funding of education sector should not be left in the hand of the government alone. The alumni association, private organizations, local communities and well-meaning Nigerian should collaborate with the Federal government in funding the education sector in the country.
7. The Federal government should as a matter of priority provide adequate security for all the people in the country.

Conclusion

Quality education is an essential ingredient that can foster national development. This paper discussed the challenges of quality education and the roles of internal and external stakeholders in improving quality education in Nigeria. The paper contended that the Federal Government who is the main



financier of education in the country has not been able to meet the demands of individual institution in the state. The problem of insecurity and lack of staff motivation in the state has led to mass exodus of brilliant academic staff to other sectors of economy, thereby leading to poor output. Therefore, there is need for adequate funding, proper implementation of educational policies, provision of good leadership and qualified academic staff. Quality assessment should be regularly carried out by the designated agencies to checkmate all the activities in all the higher institutions in the state.

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OVERVIEW OF THE ROLE OF SCIENCE AND TECHNOLOGY IN SOCIETAL DEVELOPMENT

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Abstract

Science is a system of attaining knowledge established on the scientific process or method in order to institute a body of knowledge earned through research. Technology has contributed to the growth and transformation of any society in creation of wealth, development in value of life. Technology deals with the logical study of the methods and techniques engaged in the industry, research agriculture and manufacturing to advance the life of man within his environment. Technologists have emerged in developing groundbreaking results such as advanced encryption algorithms, anomaly detection systems, and secure communication protocols. The government needs to invest more in area of science and technology as it's the most important tools for societal development.

Key words: Science, technology, societal development, science

Introduction

The word science comes from the Latin word “*scientia*” which means “knowledge” (Christian, 2014). Science is a system of attaining knowledge established on the scientific process or method in order to institute a body of knowledge earned through research (Lyndsay, 2009). This is in accordance with the definition of Olarinoye (2021) that science is the body of knowledge obtained by methods based upon observation. The knowledge of science aids the development of a nation. Giacomelli and Giacomelli (2004) asserts that science is concerned with the acts of nature. At the same time, Anaeto et. al. (2016) sees science as a division of knowledge that has to do with observation and organization of evidences and creation of truth that is generally acceptable. The learning of science is important as it enables people to understand the nature of life and his environment in order to live appropriately in such an environment. The importance of science makes the government to place it as a core subject to be taught from elementary level to the highest level of education in Nigeria that is, from primary to university education. Generally speaking, we can say science is the study and learning of man and his environment.

Technology is a way of making use of electronic machine in a constructive manner to make our work or daily activities easier. According to Anaeto et. al. (2016) technology is a means of exploiting and utilizing the knowledge of nature for our own advantage. This is to say that the knowledge of technology is being applied for practical and specific purposes. The use of technology is to ease and improve the working condition and activity of man such as natural environment, socio – economic condition, education etc. Technology, as stated by Ohwojero (2015) contributed to the growth and transformation of any society in creation of wealth, development in value of life. Technology deals with the logical study of the methods and techniques engaged in the industry, research agriculture and manufacturing to advance the life of man within his environment. As a result of this, technology caters for the problems of man within the global society, such problems like: health, transportation, printing enterprises, communication, education, military, power, fuel and politics. All these areas and sectors, technology has cushioned any problem that could emerge from them. The outburst of technology some decades back has revolutionized the society as it makes it globalized, complex and media – saturated (Paul & Wendy, 2011).

Science and Society

The society, when have full undertaking of science, it brings and contribute a healthier living, it also takes care of our health which lead to longer life. Science brings answers to almost everything in our day-to-day activities. When talk about knowing or acquiring knowledge, science takes the most important path through which man gets knowledge. Unesco (2023) was of the opinion that it's a necessity for science to respond to both societal and global challenges. The society can easily enjoy the response from science when they fully understand and engage with science by participating in making personal and professional carriers with it. Likewise, the government also needs to take part in science by take a vehement decision as regard



scientific issues like health, education, agriculture, climate change etc. At the same time, science as a body must understand and know the problems of the society especially the policy – makers so as to effect the results of their research relevant to the society (Unesco, 2023)

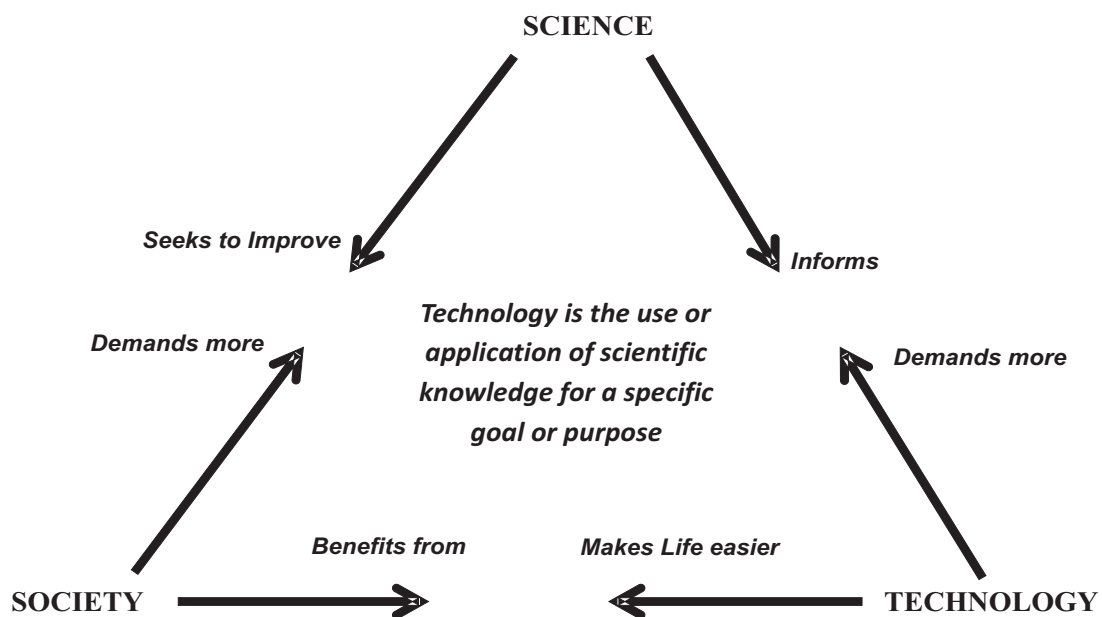
Science and Technology

Giacomelli and Giacomelli (2004) stated that “science is interested in the laws of nature; while technology applies scientific knowledge to make new things; new machineries and it may be used to “dominate” nature and to improve our lives”. This implies that science and technology are cross related with each other. Science goes into deep research which allows for technological process, and in turn gives rise to new instruments and equipment for research. Science and technology is so important in the lives of people living in the society. This brings about the development of such society. This is in agreement with Anaeto et. al. (2016) that science and technology are closely linked with improvement in as much as they have steered towards healthier, lengthier, wealthier and more productive lives. Also, science and technology are significant solutions to relief poverty and challenges to economic growth that we are facing currently (Anaeto, 2016).

Relationship between Science, Technology and Society

These three terms: science, technology and society are interrelated and interconnected with one another, which means they are dependent on one another. Science cannot do away with technology because that is the place science hurls all its experiences. Technology is useless if there is no society to implement or utilize the product. Sagarkumar (2012) stated that difference infrastructures within the society have advanced through the assistance of science and technology. The scope of human communication widened as telephone and radio services are being invented in the societies which have solved the problem of communication barrier among people. Likewise, society would not have developed without industries by which technology tests its outcomes of inventions. The impact of science and technology is greatly felt in the society (Sagarkumar, 2012).

The relationship between science, technology and society is a give – and – take issue that form a cycle, and they are interdependent with one another. The model below shows the interrelationship between science, technology and society.



*Fig. 1: Relationship between Science, Technology and Society. (As adopted)
(C. C. Ihueze , C. C. Okpala , E. C. Okafor , U. C. Okonkwo, 2015).*

Source: Retrieved from https://www.researchgate.net/figure/the-relationship-between-science-technology-and-the-society_fig2_308961638><img.

Science which changes the orientation of man about his environment seeks to improve the society as it demands for more from science. At the same time, science tries to relay its discoveries to technology as it demands for more from science. However, the society benefits from technology as it makes the lives of the people easier and comfortable. This then forms a cycle of dependence of science, technology and society.

Contributions of Science and Technology to the Society

The essence of science and technology is to experience their involvement in the development of the society. The outcomes from science and technology are being traced or connected to the enlargement of new products and new technologies which greatly contribute to the development of the society. Science and technology have made enormous and significant contributions to the development of the society in the area of security over the past few years. Here are some remarkable examples that science and technology has made to our society: artificial intelligence (AI) and machine learning (ML) in surveillance systems, cybersecurity enhancements, biometric technologies for identity verification, drones for surveillance and emergency response among numerous others.

Liu et al. (2020) who affirms that AI and ML technologies have been progressively utilized in surveillance systems to augment security measures. The technologies which enable advanced video analytics, facial recognition, and behavioral pattern detection, refining the accuracy and efficiency of security monitoring. For example, researchers and technologists have developed some AI-based surveillance systems which can detect and alert security personnel to impending threats in to the society.

With the growing frequency and sophistication of cyber threats, advancements in cybersecurity technologies have become crucial for ensuring societal security. Researchers and technologists have emerged in developing groundbreaking results such as advanced encryption algorithms, anomaly detection systems, and secure communication protocols. These advancements as helped in protecting critical infrastructure, sensitive data, and personal information from cyberattacks (Chowdhury et al., 2021).

In the case of identify and securing the identity of a person, the biometric identity verification has been developed. Rattani et al. (2020) stated that biometric technologies, including fingerprint recognition, iris scanning, and facial recognition, have made significant contributions to security systems. These technologies enable precise and dependable identity verification, that reduce the risk of unauthorized access and identity fraud. Biometric authentication systems have been deployed in various sectors, including airports, border control, and financial institutions.

Drones equipped with sophisticated imaging sensors as well as communication proficiencies which have revolutionized surveillance and emergency response operations. They can be positioned in inaccessible or hazardous zones to monitor activities, gather authentic information, and provide situational awareness to security personnel. Drones have been particularly useful in disaster management, search and rescue operations, and border surveillance (Kanhere et al., 2021).

These examples among others highlight how science and technology advancements have positively impacted security measures, enhancing societal development and resilience in the face of emerging threats.

Conclusion

Societies develop through science and technology. Anaeto et. al. (2016), opined that the present and future development of any society or a nation depends on the science and technology. This is the fact that science and technology play an essential and ultimate role in the improvement of lives and economic growth of the country. Gaukroger (2006) opines that science and technology should focus on concrete inventions for the progress of all human lives or humanity.

It is important to note that for any society to develop and expand in her scope of understanding and relating with other communities. The knowledge of science and technology cannot be overemphasized. Also, for science and technology to make available a safe society, one needs to encourage research and development that will provide lasting solutions to any security threat (Giacomelli and Giacomelli, 2004). The government needs to invest more in area of science and technology as it's the most important tools for



societal development. At the same time, school (from basic classes to the university) needs to promote the learning of science and technology right from the childhood stage.

The roles of science and technology are crucial for progress and addressing various challenges. Here are some recommendations; foster scientific literacy, that is the importance of science and technology should be promoted at all levels of education (primary schools to universities level; the government should invest in research and development: government should support basics research that can expand our fundamental understanding of the world; also government should support entrepreneurship and innovation, that is, provide funding opportunities and streamline regulatory processes to enable scientists and technologists to convert their ideas into feasible products.

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AGRICULTURAL EDUCATION AS A STRATEGY FOR SUSTAINABLE NATIONAL DEVELOPMENT IN SOUTH-SOUTH, NIGERIA

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Abstract

The study examined the constraints in the effective programme of agric. education and strategies for stimulating students' interest in agricultural education. Two research questions and two null hypotheses guided the study. The descriptive survey research design was adopted for the study. The study used the proportionate simple random sampling technique to select a sample size of 350 respondents from the five universities in the south southern Nigeria. The instrument was a 24-item structured questionnaire on a 4-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with corresponding numerical values of 4, 3, 2 and 1 respectively. The instrument was face-validated by five experts and a reliability coefficient of 0.88 was obtained with the use of Cronbach alpha reliability test. Out of the 350 copies of the questionnaire administered to the respondents, 327 copies were completely filled and returned which were used for the analysis; representing 93.4% rate of return. The collated data were analysed using weighted mean while Analysis of Variance (ANOVA) was used in testing the null hypotheses at 0.05 level of significance. The study identified seven (7) constraints in the effective programme of agric. education and seventeen (17) measures for stimulating students' interest in agric. education. There was no significant difference in the mean ratings of the responses of undergraduates, postgraduates and agric. education lecturers on the measures for stimulating students' interest in agric. education. Based on the findings, the study recommends among others, that agric. education students should be awarded scholarship opportunities to attract and sustain the students in their chosen career that will culminate into agricultural occupation.

Keywords: Agriculture, Education, Strategy, Sustainable, National, Development.

Introduction

Perhaps, only very few (if any) inter-disciplinary concepts poses, presently, greater intellectual challenges for scholars and policy analysts than 'sustainable development'. The ever growing body of literature on the subject attests to this claim. More enigmatically, because of the cross-disciplinary sensibilities which the concept invokes, a universal definition is far-fetched. The situation does not augur well, occasioned by the fact that countries in and with varying socio-political and economic structures cannot reasonably subscribe to the same definitional regime. Little wonder the emerging consensus favours conceptualizations that are amenable to modification and socio-cultural environments (Egbule, 2018).

Sustainable development originated rather uniquely in the wake of strong criticisms of existing neo-classical development models and theories. Among the criticisms are; the failure of neo-classical models to address key development issues such as poverty, human welfare and healthier environments. More importantly, the neo-classical development model virtually neglects the equitable distribution of growth benefits-a key factor in economic, political and ecological stability (Ekele, 2019). Essentially, therefore, sustainable development concept emerged in juxtaposition to traditional (neo-classical) theories which purport, to describe development using simplistic and narrow indices and models. Picciotto (2015) viewed the emergence and wide acceptance of the sustainable development concept as the evidence of obsolescence of neo-classical models for analysing development trends.

Achimugu (2020) expounded on a nation as: having a certain defined unit of territory with such common characteristics as language, customs, e.t.c. some dominant social



and economic institutions; sovereign government or at least the desire for one; belief in a common history and a love or esteem for fellow nations; ... A common hope for future.

From the above definition, when a country is sharply divided along tribal, sectional, geographical, states, social, economic, political and cultural lines, then it is no more a nation. A nation should have a common destiny and goals and should be visibly cohesive. According to Aminu (2019) development is a means of improving the total circumstances of a man on his earth, satisfying his spiritual and material needs and granting him mastery of his environment. Development is measured in terms of living standard of the people and not by number of imported dazzling machinery and other fanciful products. Okeems (2021) perceived development as a complex process involving several dimensions such as economic, political, cultural, psychological and aesthetic dimensions working in concert with one another. However, in the context of this paper development is a progressive change, which enable an individual or society to actualize their innate capacities such as biological, sociological and psychological instincts. It is pertinent to note that personal development is the genesis of societal development. Thus, development can be said to be the fulfilment of individual needs and maximization of societal happiness.

National development is the extent to which a nation is able to overcome her complex socio-economic, political, and cultural issues to ensure progressive change in the quality of life of her citizens. The four major elements associated with national development include social, economic, political and cultural changes. Eboh, Okoye and Ayichi (2020) opined that economic development is concerned with increase in productivity and national wealth measured by increase in the quality of life of people. e.g., Gross National Product (GNP), level and availability of manpower. Social development, on the other hand, is concerned with how to mobilise the human capital for enhancement of the quality of life of the majority and also to ensure maximum interaction and co-operation among the members of the society e.g., literacy level, health care delivery, water supply, population growth and distribution, satisfaction within population and social security. Political development is concerned with conducive atmosphere necessary for all other phases of development to take place, it is also concerned with political stability, awareness and emancipation e.g., national integration, some public obligations, political tolerant, effective leadership and national security.

Cultural development is concerned with the integration of the traditional elements, to bring together a harmonious blending of old and the new so that the socio-economic changes can take place rapidly e.g. moral level of the people, discipline, attitudes and value system. Every good government aims at providing these basic needs for the entire citizenry. Nwosu (2020) corroborated that national; development is a continuous improvement of the material and human resources of a nation in order to maximise and manipulate the physical environment for the benefit of the citizen. To this extent, national development connotes improvement in the living standard of each citizen. National development is measured by the extent to which the skewed distribution of wealth is corrected by the number of people who are lifted above the poverty line, the facilities provided to them for education, health and housing; the range of employment generation; economic growth; price stability and political participation of the unorganized majority. The above indicators ensure that the entire population of a nation is free from hunger and want. A nation is thus, said to be developed when its people have achieved the following: low infant and maternity mortality, longer life, affordable and comfortable means of transportation, regular water and energy supply, improved agricultural system, robust commercial activities, strong industrial base, decent and adequate accommodation, good communication network, improved and sound health services, a free and democratic society, political participation of the majority, price stability, available employment opportunities, equipped armed forces and elites live above board e.t.c. The reverse conditions of the above however, are the characteristics of developing nations like Nigeria hence the need for sustainable national development (Achimugu, 2020).

Sustainable national development is the one that meets the needs of the present generation without compromising the ability of future generations to meet their own need for progressive change in the quality of life of all her citizens (World Commission, 2010). The FAO (2020) council perceived it as the management and conservation of the natural resources base, and the orientation of technological and institutional change, in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. In the view of Ballara (2021), sustainable national development is humanity's ability to survive by means of the rational use of renewable resources, by refraining from disrupting the ecosystem or overexploiting natural resources and by refraining from activities that destroy



cultures or societies and instead allow them to reach their potential. In the context of this paper, it entails participatory development, human development and environmental protection. The foregoing pool of paradigms and definitions reveal certain basic principles underlying the clear endorsements of sustainable national development. The aim of sustainable national development can only be achieved through deliberate and sound education of her citizenry on the best sustainable strategies to adopt.

Education is the process of transmission of worthwhile values to people to equip them for active participation in life. In the view of Sunday (2022), education is a process by which the community seeks to open its life to all the individuals within it and enable them to take part in it. Simply put, education is a process of social reconstruction, rehabilitation and reconciliation. In the context of this paper, education refers to the deliberate efforts directed towards the transmission of accumulated wisdom, knowledge and skills from generation to generation, imparted within the school (formal) or outside the classroom (non-formal/informal). While the deliberate efforts of training learners in the improved agricultural production process and in the techniques for the teaching of agriculture is known as agricultural education.

Agricultural education is education designed to train people for efficient, profitable and satisfying employment in different fields of agriculture. It is a special type of education designed to train people in the art and science of farming and in the pedagogy of agriculture (Ogbaszi, 1992). In the view of Olaitan (1988), it is teacher preparation in agricultural production and in the pedagogical skills in agricultural subject matter areas. To Osinem (2008), it is a process of imparting knowledge, skills and attitudes in agriculture to the learner at any level. Beyond the family unit, the village is the primary and social group and also a distinctive culture bearing unit. It is pertinent to note that over eighty percent of the Nigerian people live in the village (Ogbazi, 1992). Therefore, the village population is predominantly rural farmers that lack infrastructural facilities and other social amenities. In contrast, the urban areas have facilities and amenities that improve the quality of life of the people. The difference between the rural and urban centres is reflected in the lopsided distribution of social and essential amenities. Sustainable national development therefore, is directed to the modernization of the rural areas because rural development is synonymous with national development.

Investigation however, in the study area revealed that there is concentration of development incentives in the urban centres which had no significant impact on the rural population. Instead, the state has witnessed an unprecedented exodus of able-bodied, educated young people from the rural areas to the urban centres in search of white collar jobs or to enjoy the so called economic "goodies" of life occasioned by the fear of drudgery nature of agriculture coupled with societal apathy towards agriculture. Meanwhile, there is a pool of unemployed educated youths in the cities orchestrating crime and criminalities for survival. Therefore, it becomes imperative not only to introduce agricultural education at all levels of our educational system but also intensify efforts to stimulate students' interest in agriculture.

Research Questions

The following research questions guided the study.

1. What are the constraints in the effective programme of agricultural education?
2. What are the measures for stimulating students' interest in agricultural education?

Hypotheses

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

HO₁: There is no significant difference in the mean ratings of the responses of undergraduates, postgraduates and lecturers of agricultural education on the constraints in the effective programme of agricultural education.

HO₂: There is no significant difference in the mean ratings of the responses of undergraduates, postgraduates and agricultural education lecturers on the measures for stimulating students' interest in agricultural education.

Methodology

The study adopted the descriptive survey research design. Two research questions guided the study while two null hypotheses were formulated and tested at P = 0.05 level of significance. The target population for the study comprised 240 agricultural undergraduates, 48 postgraduate (Agricultural



education) students and 62 agric. education lecturers, totaling 350 respondents. The 350 respondents were spread across the five universities in the (2021/2022 academic session) south southern Nigeria viz: University of Port Harcourt (70 respondents), Rivers State University of Science and Technology (70 respondents), Ignatius Ajuru University of Education, Port Harcourt (70 respondents), Federal University Otueke, Bayelsa (70 respondents) and Niger Delta University, Bayelsa (70 respondents); totaling 350 respondents: Field survey, 2021/2022. The proportionate simple random sampling technique was used to select 70 respondents each from the five (5) universities in the study area totaling 350 respondents.

The instrument for data collection was a 24-item questionnaire, structured on a 4-point response option of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with a corresponding numerical value of 4, 3, 2 and 1 respectively. The instrument was face-validated by three experts. For purposes of determining the internal consistency of the instrument, the instrument was trial tested on 15 similar respondents in University of Uyo, Uyo and the data collated were analyzed using Cronbach Alpha reliability technique which yielded a reliability coefficient of 0.88.

To ensure quality data collection, four (4) trained research assistants joined the researcher, totaling five (5) enumerators in collecting the data from the respondents. Each of the research assistant covered their respective university in Rivers State and Bayelsa State viz: University of Port Harcourt, Rivers State University of Science and Technology, Ignatius Ajuru University of Education, Federal University Otueke and Niger Delta University. Out of the 350 copies of the questionnaire administered to the respondents, 327 copies were completely filled and returned which were used for the analysis; representing 93.4% rate of return. The data collated were analyzed, using weighted mean while Analysis of Variance (ANOVA) was used for testing the null hypotheses at 0.05 level of significance. The cut-off point of 2.50 on 4-point rating scale was used to interpret the result as Agree or Disagree. This thus, implied that any constraint or stimulating measure with a mean value of 2.50 to 2.49 was considered as Agree whereas any constraint or stimulating measure with a mean value of 0.5 to 2.49 was regarded as Disagree. Also, any item with a standard deviation between 0.00 and 1.96 attested to the fact that the respondents were closed to the mean and the opinion of one another, in which case, the statement was adjudged valid.

In testing the hypotheses, the hypotheses of no significant difference was accepted for students' interest stimulating measures whose p-values were greater than 0.05 level of significance. On the other hand, the hypothesis of no significant difference was rejected for students' interest stimulating measures whose p-values were less than 0.05 level of significance with 325 degree of freedom.

Results

The results for this study were obtained based on the research questions answered and hypotheses tested.

Research Question 1: What are the constraints in the effective programme of agricultural education?



Table 1:
Mean Ratings of the Responses of Undergraduates, Postgraduates and Education Lecturers on the Constraints in the Effective Programme of Agricultural Education.

Item No.	Constraints in Agric. Edu. Programme	\bar{X}_{UG} (40)	\bar{X}_{PG} (61)	\bar{X}_{AE} (226)	\bar{X}_G (327)	SD	Remark
1.	Inheritance of education system that is incongruous to local needs.	3.52	3.48	3.58	3.53	0.59	Agree
2.	Use of outdated curriculum and teaching methods.	3.33	3.36	3.70	3.46	0.62	Agree
3.	Paucity of literature dealing with the local farming system.	3.67	3.60	3.59	3.62	0.50	Agree
4.	Inadequate knowledge about the objectives of agric. education and training by policy makers, administrator, instructors, students and parents.	3.35	3.36	3.37	3.36	0.48	Agree
5.	Ignoring on -the-training for adult farmers.	3.18	3.42	3.47	3.46	0.60	Agree
6.	Total neglect of intermediate or appropriate technology.	3.53	3.47	3.57	3.57	0.63	Agree
7.	Heavy emphasis on mechanized agriculture.	3.60	3.53	3.62	3.60	0.55	Agree

Key: \bar{X}_{UG} = Mean of Undergraduates; \bar{X}_{PG} = Mean of Postgraduates; \bar{X}_{AE} = Mean of Agric lecturers; \bar{X}_G = Grand Mean; SD = Standard Deviation; N = No. of Respondents 327

It was revealed from data presented in Table 1, that the seven (7) items had their mean (\bar{X}) values ranged from 3.18 to 3.70 and were all above the bench mark of 2.50. therefore, they were interpreted as Agreed. This implied that the respondents agreed that the seven (7) items (statements) were constraints in the effective programme of agricultural education. The standard deviation values ranged between 0.48 and 0.63 which were below 1.96, an index that the respondents were close to one another in their responses; meaning that the items were valid.

Research Question 2: What are the measures for stimulating students' interest in agricultural education?
The data for answering research question 2 are presented in Table 3.

Table 2:
Mean Ratings of the Responses of Undergraduates, Postgraduates and Education Lecturers on the Measures for Stimulating Students' Interest in Agric. Education.

Item No.	Measures for stimulating students' interest in agric. education.	\bar{x} (40)	\bar{x} (61)	\bar{x} (226)	\bar{x} (327)	SD	Remark
1.	Award scholarship programmes to students by oil companies, individuals, government.	3.76	3.73	3.70	3.73	0.46	Agree
2.	Making agric. subject compulsory in secondary schools.	3.57	3.55	3.56	3.56	0.31	Agree
3.	Change in examination system by scoring 60% and 40% for practicals and theory respectively.	3.18	3.13	3.53	3.28	0.51	Agree
4.	Assisting students with stipends by philanthropic organisation	3.54	3.53	3.55	3.54	0.54	Agree
5.	Revitalization of Young Farmers' Club programme in schools.	3.65	3.66	3.70	3.67	0.50	Agree
6.	Engaging students in regular field trips and excursion programme.	3.20	3.32	3.71	3.41	0.51	Agree
7.	Award prizes to best performed students.	3.57	3.55	3.56	3.56	0.31	Agree
8.	Students' participation in agricultural shows/exhibition.	3.76	3.73	3.70	3.73	0.46	Agree
9.	Provision of safe/conducive learning environment.	3.57	3.55	3.56	3.56	0.31	Agree
10.	Prompt payment of staff salaries and regular promotion exercise.	3.18	3.13	3.53	3.28	0.51	Agree
11.	Use of trained competent agric. educators.	3.20	3.32	3.71	3.41	0.51	Agree
12.	Formulate favourable educational policies towards agric. education.	3.76	3.73	3.70	3.73	0.46	Agree



13.	Use of viable innovative technologies.	3.57	3.55	3.56	3.56	0.31	Agree
14.	Use of competent agric. educator as a role model.	3.65	3.66	3.70	3.67	0.50	Agree
15.	Sufficient funding by government.	3.57	3.55	3.56	3.56	0.31	Agree
16.	Co-operative participation by all major education stakeholders.	3.18	3.13	3.53	3.28	0.51	Agree
17.	Use of safety measures in practical operations.	3.65	3.66	3.70	3.67	0.50	Agree

Key: \bar{X}_{UG} = Mean of Undergraduates; \bar{X}_{PG} = Mean of Postgraduates; \bar{X}_{AE} = Mean of Agric lecturers; \bar{X}_G = Grand Mean; SD = Standard Deviation; N = No. of Respondents 327

The data presented in Table 2 revealed that the mean ratings of the respondents on the seventeen (17) items in the table ranged from 3.13 to 3.76 which are all greater than the cut-off point value of 2.50. Therefore, they were interpreted as agree measures for stimulating students' interest in agric. education. This implied that the respondents agreed that the seventeen (17) statements were measures for stimulating students' interest in agric. education. The standard deviation values of the seventeen (17) items ranged between 0.31 and 0.54 which are below 1.96, indicating that the respondents were close to one another in their responses; meaning that the items are valid.

Testing of Hypotheses

HO₁: There is no significant difference in the mean ratings of the responses of undergraduates, postgraduates and lecturers of agricultural education on the constraints in the effective programme of agricultural education.

Table 3:

Analysis of Variance (ANOVA) of the responses of Undergraduates, Postgraduates and Education Lecturers on the Constraints in the Effective Programme of Agricultural Education.



Item No.	Constraints in Agric. Edu programme	Total sum of square	Mean square	P – values			Remark
1.	Inheritance of education system that is incongruous to local needs.	175.259	0.33	0.34			NS
2.	Use of outdated curriculum and teaching methods.	129.172	0.44	0.31			NS
3.	Paucity of literature dealing with the local farming system.	232.688	0.14	0.60			NS
4.	Inadequate knowledge about the objectives of agric. education and training by policy makers, administrator, instructors, students and parents.	194.770	0.40	0.91			NS
5.	Ignoring on -the-training for adult farmers.	119.650	0.52	0.83			NS
6.	Total neglect of intermediate or appropriate technology.	123.627	0.17	0.20			NS
7.	Heavy emphasis on mechanized agriculture.	149.650	0.51	0.94			NS

Key: S* = Significant; NS = Not Significant; Level of Sig = 0.05

The data presented in Table 3 on hypothesis 1, revealed that the p-values of the seven (7) items ranged from 0.20 to 0.91, which are in each case greater than 0.05 level of significance. This implied that there were no significant differences in the mean ratings of undergraduates, postgraduates and agric. education lecturers on the seven (7) constraints in the effective programme of agric. education. Thus, the null hypothesis of no significant difference in the mean ratings of the three groups of respondents, was accepted on the seven (7) constraints in agric. education programme.

Hypothesis 2

HO₂: There is no significant difference in the mean ratings of the responses of undergraduates, postgraduates and agricultural education lecturers on the measures for stimulating students' interest in agric. Education.

Table 4: Analysis of Variance (ANOVA) of the responses of Undergraduates, Postgraduates and Agric. Education Lecturers on the Measures for Stimulating Students' Interest in Agric. Education.

Item No.	Measures for stimulating students' interest in agric. education.	Total sum of square	Mean square	P – values	Remark
1.	Award scholarship programmes to students by oil companies, individuals, government.	129.703	0.39	0.31	NS
2.	Making agric. subject compulsory in secondary schools.	169.429	1.07	0.62	NS
3.	Change in examination system by scoring 60% and 40% for practicals and theory respectively.	140.484	0.41	0.91	NS
4.	Assisting students with stipends by philanthropic organisation	169.172	0.29	0.83	NS
5.	Revitalization of Young Farmers Club programme in schools.	136.770	0.49	0.68	NS
6.	Engaging students in regular field trips and excursion programme.	180.484	0.20	0.44	NS
7.	Award prizes to best performed students.	169.484	1.07	0.62	NS
8.	Students' participation in agricultural shows/exhibition.	129.703	0.39	0.31	NS
9.	Provision of safe/conducive learning environment.	136.770	0.49	0.68	NS
10.	Prompt payment of staff salaries and regular promotion exercise.	180.484	0.20	0.44	NS
11.	Use of trained competent agric. educators.	140.484	0.41	0.91	NS
12.	Formulate favourable educational policies towards agric. education.	120.703	0.39	0.31	NS
13.	Use of viable innovative technologies.	129.703	0.39	0.31	NS



14.	Use of competent agric. educator as a role model.	169.429	1.07	0.62	NS
15.	Sufficient funding by government.	140.484	0.41	0.91	NS
16.	Co-operative participation by all major education stakeholders.	136.770	0.49	0.68	NS
17.	Use of safety measures in practical operations.	180.484	0.20	0.44	NS

Key: S* = Significant; NS = Not Significant; Level of Sig = 0.05

The data presented in Table 4 on hypothesis 2 revealed that the P-values of all the seventeen (17) items ranged from 0.31 to 0.91 which were in each case greater than 0.05 level of significance. This implied that there is no significant differences in the mean ratings of the responses of undergraduates, postgraduates and agric. education lecturers on the seventeen (17) measures for stimulating students' interest in agric. education. Therefore, the postulated hypothesis of no significant difference in the mean ratings of the three groups of respondents, was accepted on the 17 measures for stimulating students; interest in agric. Education.

Discussion of Findings

The discussion of the findings of this study followed the order of the research questions. From the analysis of the data in Table 1, the study identified seven (7) constraints in agric. Education programme as contained in Table 1. The findings of this study is in tandem with the works of Ekele (2019) who decried that: inheritance of education system that is incongruous to local needs, use of outdated curriculum and teaching methods, paucity of literature dealing with the local farming system among others, were serious setbacks to the achievement of the objectives of agricultural education in the nation. Consequently, there is perceived students' apathy towards agric. education in educational institutions in the country.

It was in furtherance of the above mirage that informed this study to identify seventeen (17) measures for stimulating students' interest in agric. education as contained in table 3. The findings of the study is in line with the submission of Egbule (2018) who advocated for the adoption of the following measures: change in examination system, assisting students, making agric. science a compulsory subject, revitalization of Young Farmers' Club programme, engage students in field trips and excursion programmes, sufficient funding, provision of safe/conducive learning environment among others.

FAO (2020) corroborated that prompt payment of staff salaries and regular promotion exercise, use of trained competent agric. educators as role model and use of modern technologies are good strategies for stimulating students' interest in agricultural education. Hence Ballar (2021) advised agric. educators to religiously implement these measures and accrue the benefits therefrom. The findings of the researchers cited above corroborates the findings of this study and had further improved the validity and reliability of the results.

Conclusion

There is a pool of unemployed educated youths in the cities orchestrating crime and criminalities for survival. Yet the agric. education programmes in schools, which supposed to be a panacea to youths' restiveness, are bedeviled with serious setbacks. Therefore, the study identified seven (7) constraints in the effective programme of agric. education and seventeen (17) measures for stimulating students' interest in agricultural education. There was no significant difference in the mean ratings of undergraduates, postgraduates and agric. education lecturers on the measures for stimulating students' interest in agricultural education. Thus, if the findings of this study are developed into a training manual and packaged for students,



graduates, agric. educators, extension agents, farmers, administrators and educational policy makers, it will lure students to offer agricultural education and ultimately enhance food security in the nation.

Recommendations

Based on its findings and conclusion, the study recommends that:

1. Agric. education programmes should be funded adequately by government and other educational stakeholders.
2. Scholarship opportunities should be given to outstanding students in agric. education to further their career.
3. Young Farmers' Club programmes should be revitalized in schools.
4. Schools should send students to participate in agricultural shows and exhibitions.

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RE-INVIGORATING SCIENCE EDUCATION PROGRAMME IN UNIVERSITIES FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

BY

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Abstract

The paper focuses on re-invigorating science education programme in universities for sustainable development in Nigeria. The paper reviewed historical development of science education from pre-independence era till date. It also considered various reforms which have taken place in science education at different levels of education, the challenges facing the implementation of science education programme especially in Nigerian universities and emerging issues in science education globally. The paper explored ways science education can be re-invigorated in universities in Nigeria. Trends about science education in Nigeria universities suggest that there is need for improvement in the programme. It is hoped that if the strategies outlined in this paper are adopted, it will go a long way in repositioning science education programme in universities for sustainable development in Nigeria.

Keywords: Re-invigorating, Science education, Sustainable, Development & University.

Introduction

The importance of science to the development of any nation cannot be over emphasized. This is why attention is given to the study of science in the educational system of many countries in recent years. Science is investigation into knowledge which provides solutions to problems in the universe (Bilesanmi-Awoderu, & Oludipe, 2012). Science education is field of study which covers the subject matter of science disciplines such as biology, chemistry, mathematics, geography physics, agriculture etc., as well as the process involved in the learning and teaching of science. It also means exposing learners or prospective teachers of science to scientific and technological knowledge, science process, attitudes and equipping them with scientific professional skills (Lewis, 2015; Gabriel, 2019).

According to Aina & Adejo (2013), science education is concerned with sharing of science content and process with individuals who are not considered traditionally to be member of the scientific community. The field of science education includes work in science content, science process (scientific methods) and teaching pedagogy. As such, science education fosters teaching the science concepts, method of teaching and addressing misconceptions held by learners regarding science concepts.

Historical background of science education in Nigeria

Early teaching of science in Nigeria began at about 1875 following the establishment of missionary schools in Lagos. At that time, subjects like arithmetic, nature study among others were taught at in primary



schools. The establishment of Africa Education Commission in the 1920s led to introduction of general science in the Nigeria educational system. The British government introduced general science curriculum into the educational system to satisfy their own aspirations and not the wishes of the Nigerian people (Sulaiman, 2012). The general science later evolved to elementary science at the primary level of education. After independence, a science curriculum for both primary and secondary schools were produced following the curriculum conferences and workshops which held between 1969 and 1975 as contained in the National Policy on Education in 1977.

Some reforms in Nigeria educational system in subsequent years were due to over reliance on expatriates for teaching of science subjects after independence and increase in enrollment in schools. Some of these reforms include the inauguration of West African Examination Council (WAEC) and the Science Teachers Association of Nigeria (STAN) in 1952 and 1957 respectively. There was the collaboration between STAN, the Ministry of Education and Comparative Education Study and Adaptation Centre (CESAC) in 1968 which led to the inclusion of Biology, Chemistry and Physics subjects' curricula in Nigeria schools (Aina&Adejo, 2013).

Between 1970 and 1972, as part of the effort to develop science education, the Nigerian Secondary School Science Project (NSSSP) was drawn up by CESAC. Also, the NSSSP was experimented up to 1978 and the first revised edition of the instructional material was published in 1980 and adopted into the secondary school system. The organization of science content at the secondary school level as a result of the NSSSP formed the foundation of science education in Nigeria schools today. After independence especially in recent decades, science education curricula have been developed and integrated at all levels of education. It is worthy of note that science education exist as a department with individual science subjects programmes in colleges of education and universities in Nigeria presently. Some of the goals of science education programme among other things is to help students develop knowledge and understanding of science and promote critical and creative skills acquisition for decision making and problem solving in the Nigerian society. This can be achieved in science classroom through teachers' use of appropriate innovative teaching strategies among other things (Babalola, 2004).

Goals and Objectives of science education in Nigeria

The goals of science education as spelt out in the National policy on education, (2018) document is as follows:

1. Provide knowledge and understanding of the complexity of the physical world, the forms and the conduct of life.
2. Science shall cultivate inquiring, knowing and rational mind for conduct of a good life and democracy.
3. Provide opportunity for skills acquisition. Service studies in technology and the cause of technology development; and
4. Science education shall produce scientists for national development.

While the objectives of science education includes;

1. Acquisition of the rudiments of number, letters, colour shapes and forms.
2. Providing a solid foundation in mathematics for everyday living.
3. Developing competence in the basic skills and understanding for dealing with numbers.
4. Laying a sound foundation for scientific and reflective thinking.
5. Equipping students to live effectively in our modern age of science and technology.
6. Providing trained manpower in applied science, technology and commerce.

According to the European Commission of Expert Group on Science Education (2015) and the American Association for the Advancement of Science (2009) document proposed a framework for science education identifies some key objectives which can help bring about systemic changes required to generate a sustainable effect across societies.

1. Science education should be an essential component of a learning continuum for all from pre-school to active engaged citizenship.
2. Science education should focus on competencies with an emphasis on learning through science and shifting from Science, Technology, Engineering and Mathematics (STEM) to Science, Technology, Agriculture and Mathematics (STEAM) by linking science with other subjects and disciplines.



3. The quality of teaching from induction through pre-service preparation and in-service professional development should be enhanced to improve the depth and quality of learning outcomes.
4. Collaboration between formal, non-formal and informal educational providers, enterprise and civil society should be enhanced to ensure relevant and meaningful engagement of all societal actors with science and increase uptake of science studies and science based careers to improve employability and competitiveness.
5. Greater attention should be given to promoting Responsible Research and Innovations (RRI) and enhancing public understanding of scientific findings and the capabilities to discuss their benefits and consequences. Based on the foregoing, some notable reforms and innovations in science education in Nigeria are discussed as follows.

Reforms and innovations in science education in Nigeria

The reforms and innovations that took place in science and technology education from the early 2000 among other things include the establishment of National open universities to foster among other things e-learning and virtual library, the establishment of national commission for universities, polytechnics, colleges of education and technical education board and re-vitalization of technical and vocational education and computer studies at all levels of education (Nigeria Education Research Development Council, 2010;Nwachukwu, 2012).

Another dimension to the reforms in science, technology education was emergence of the Millennium Development Goals (MDGs) and Education for All (EFA) goals championed by United Nations. The need to achieve the MDGs in Nigeria led to the adoption of the National Economic Empowerment Development Strategy (NEEDS, 2010;Ige, 2014). This led to the adoption of the review of the 6-3-3-4 to 6-9-3 system of education. As result, there was massive review of content of existing science education curricula in Nigeria. Notable among these is the introduction of introductory technology and basic science into junior secondary school science to promote teaching and learning of science and technology education in Nigeria (National Policy on Science and Technology (NPST), 2004).

Recently, there was the introduction of Science, Technology, and Engineering & Mathematics (STEM) and of Science, Technology, Engineering, and Agriculture& Mathematics STEAM content across all levels of education which is the basis for solid foundation for emerging technologies in the 21st century crucial to the development of the nation (Smith, 2019).

Emerging issues/areas for sustainable reinvigorating science education in universities Nigeria in a globalized world

The need to achieve Sustainable Development Goals (SDG) proposed by the United Nations in 2015 has led to the call for sustainable reinvigorating science education programme in universities in Nigeria (Danjuma & Adakole, 2019; Hanachor & Wordu, 2021). Development is a process that create growth, progress, positive change or the addition of physical or economic value to a society. . it could also mean a state of advancement. There is universal call to action by all nations to growth and progress which should cut across every sphere of our national life. This necessitated the concept of millennium development goal (MDGs) which lately has translated to sustainable development goal (SDGs) (United Nations, 2015).According to Webster, (2023), sustainability is the desire to meet the needs and aspirations of the present without compromising the ability meet those of the future. It is the process of starting and continuing a thing. On the hand, reinvigorating is concerned with creativity, experimenting new ideas and putting appropriate measures or best practices in place (Webster, 2023), which must be a part of the educational system (in this case, science education in Nigerian universities) .The term university refers to higher level of educational institution in which students study for degrees and academic research is done. It usually comprises of college and liberal arts and sciences which graduate professionals and having authority to confer degrees in various fields of study(Letricia,2023)Such areas to be reinvigorated in Nigerian universities include; intensive training of skilled personnel/entrepreneurship, quality research/pedagogy, more funding, information, communication, technology (ICT), globalization/ collaboration and new technologies among other things (Negedu, Ochijenu & Olorunnishola, 2020).



Intensive training of Skilled personnel/entrepreneurship

There is need for skilled persons in any field of life as no nation can rise especially above the literacy (in this case, the scientific literacy) level of her citizens. This calls for training and retraining of persons saddled with the responsibilities of science teaching or implementing the science subjects curricular. Such skills which every 21st Century teacher should possess among other things include; critical thinking skills, one who thinks globally, and one who possesses the ability to use smart digital devices and ability to collaborate effectively with others.(Palmer (2015;Yalams, 2016).

Quality Research/Pedagogy

This is about current practices or approaches as it is being practiced in other parts of the world. There is the need to adopt best practices like innovative teaching methods, standard curriculum, assessment techniques, content, materials and quality control mechanism etc.

Funding

There is need for steady improvement in funding of existing science education programme. This will go a long way in ensuring that the programme keep abreast as it is in other parts of the world.

Information Communication Technology (ICT)

There is the need for improvement in the present ICT level especially in Nigeria. This will enable educators in the field of science education keep abreast with current information with their counterparts in other countries.

Globalization/collaboration

Scientific knowledge does not exist in isolation. Science educators must promote collaboration or cross-fertilization of ideas through regular participation in conferences, workshops, seminars and symposia both home and abroad in order to keep abreast with the rest of the world in the field of science education.

New technologies

There is the need to adopt or apply latest technologies like cloning and robotic technologies to improve efficiency or productivity in the field of science education. Among other things STEM and STEAM should form the basis for emerging technologies in the 21st century which all nations must embrace (Chesky, & Wolfmeyer, 2015)

Challenges facing the implementation of science education programme in Nigeria

The success or failure of any programme in this case, the science education programme among other things depends on the seriousness and sincerity given to the execution of the programme. In spite of the effort of federal government in introducing science education in schools, the programme did not readily make much impact because of the following factors.

Problem of corruption

Corruption has ravaged nearly every facet of the society in Nigeria. Science education programme is not exemption. In spite of efforts by government to equip schools with facilities for teaching science based programmes, many of these schools did not get the equipment as corrupt government officials made away with money meant for installation of equipment in such schools.

Problem of assessment

Some contents of science education courses are too bulky and boring as a result difficult for teachers and learners to cover. This trend hinders the achievement objectives of science education programme. Science examination should able to link the both the theoretical and experimental knowledge to the realities of life thus, this can only be achieved when content on which these assessments are based are narrowed down to a well define and specific objective. This will provide a new standard for students and enhance the achievement set goals.



Lack of political will

In spite of the noble objectives of the science education programme in Nigeria, there is problem of lack of political will on the part of our policy makers and implementers to ensure proper implementation of the programme in schools in Nigeria. Even when implementation attempts was made; the programme did not readily make much impact because there was no proper follow up and supervision.

Low level sensitivity of citizens to science education programme

The sensitivity and interest of the citizens in Nigeria to science education is still low compared to developed countries. This account for why many students do not show interest in science education programme in the country.

Inadequate facilities

Science facilities in most schools is grossly inadequate. This problem is even more pronounced in the rural areas. It is either the facilities are not available or insufficient.

Under funding of science education programme

Problem of lack of commitment on the part of the government and poor awareness on the part of educational administrators of projects in our intuitions. This problem is traceable to conflict of interest by different administration. For instance, while previous administration under President Good luck Ibele Jonathan made some significant investment in science education programme through the Petroleum education trust fund initiative while successive regime like the present regime did not properly follow up the gains that were achieved.

High cost of facilities

The cost of facilities meant for teaching biology is high. Most schools rely on internally generated revenue from school fees which is used to run day to day affairs of the schools. As such, many schools are unable to afford these facilities.

Problem of maintaining facilities

Even when these facilities are provided through special funds like the Education Trust Fund (ETF), there is still the problem of maintenance of these facilities. This because there is no sustainable follows up in management of these facilities. Example is in the tertiary institutions where obsolete facilities for teaching science based subjects are not being replaced.

Poor perception of science education programme by educational administrators

Majority of our educational administrators have little awareness about science education programme. This account for apathy towards science education in our schools. Hence, the programme is not given the attention it deserves.

Electricity interruptions

Epileptic power supply has been the bane of the Nigeria society. This problem has affected every sector. Science teaching cannot be effectively implemented where power supply is irregular as electricity is required to carry out certain practical aspects of the curriculum.

Lack of adequate consultation

According to (UNESCO, 2018), the challenges affecting the progress of science education in African countries is due to lack of technical and management capacity in carrying out the said objectives, conflict of interest inadequate consultation. Other challenges facing the implementation and sustainability of standard of science education programme include; poorly motivated teachers leading to poor performance in teaching, frequent strikes by teachers leading to distortion in academic calendars, deficiency in curriculum content and delivery resulting in lowering of performance level of students in school and public



examinations and inadequately professionally qualified teachers in the school system (Osokoya, 2002; Okebukola, 2005; Offorma, 2006; Okoroma, 2006).

Strategies for re-invigorating science education in Nigerian Universities for sustainable development in Nigeria

Based on the previous discussion, the way forward is to adopt the underlining strategies in order to ensure that science education programme in Universities is reinvigorated for sustainable development in Nigeria.

1. Comprehensive home grown science education programme should be developed. Existing curricula should be reviewed to keep a breast with currents trends in the world.
2. Admission quota should be increased in favour of science education based courses in tertiary institutions, with incentives like scholarship to ensure production of well-trained science teachers.
3. The government should increase funding of science education programme and ensure adequate provision of up-to-date facilities like well equipped 'state of the art' laboratories our schools and monitor their use.
4. To ensure un-interruption in power supply the federal ministry of mines and power and corporate organizations should work towards stabilizing electricity supply required for smooth operations of science equipment in schools in Nigeria.
5. In the 21st century, a technologically advanced work force will lead to economic growth in Nigeria. Therefore, government and corporate agencies like the media should be used to promote public awareness campaign on the need for literacy in science education among the country's citizen.
6. Government in collaboration with educational administrators and experts both home and abroad should explore ways of cross-fertilizing ideas on ways to move forward science education in Nigeria. Among other things, such individuals and NGOs should explore ways of setting up training centers and facilities across the country.

Conclusion:

This paper discussed reinvigorating science education in universities for sustainable development in Nigeria .The issue in question is reinvigorating science education in universities for sustainable development in Nigeria. From the discussion in this paper, it is evident that there is the need for reinvigorating science education in universities in Nigeria in a sustainable manner. This is to ensure that the aims and objectives of the programme is achieved not only for the present but for future generations. This will go a long way in promoting development in Nigeria.

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THE ROLE OF COUNSELLORS AND PARENTS TEACHERS ASSOCIATION (PTA) ON THE EDUCATIONAL AND SOCIAL NEEDS OF THE CHILD

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Abstract

The paper focused on the role of counsellors and parents-teacher's association (PTA) on the educational and social needs of the child in Ondo State. The population of the study consisted of all the counsellors, teachers and parents in Ondo State. A simple random sampling technique was used to select 50 teachers, 50 counsellors and 50 parents making a total of one hundred and fifty (150) respondents. The instrument for data collection was structured questionnaire titled "Role of Counsellors and Parents Teachers Association (PTA)" on four point Likert scale. Pearson product moment correlation was used to determine the correlation coefficient which was 0.72. Three hypotheses were formulated to guide the study. The hypotheses were tested using correlation and t-test. The result showed that there was a significant relationship between school counsellor and educational development of the child. The result showed that there was a significant relationship between Parents-teachers' association and educational development of the child. The results showed that there was a significant difference between teachers and educational development of the child. Finally, the results showed that there was a significant influence of school counsellors, parents teachers association and teachers and educational need of the child. The study concluded that counsellors and parents-teacher's association (PTA) influenced the educational and social need of the child in Ondo State. It was recommended amongst others that government should make available e-counselling facilities that could enhance counselling activities both in school and non-school setting.

Keywords: Role, counsellors, parents-teacher's association(PTA), educational, social, child

Introduction

Education is the bedrock of any national development either in the developed, developing or under-developed nation. Education is the instrument for individual, societal, national and international growth and development. It prepares an individual for the total development from birth through a life time for useful and happy membership of the society he belongs to. Education makes an individual to become an asset and not a liability to the society (Ajileye, 2013). All human societies need the development of prerequisite skills, knowledge and experience for their growth and preservation. This is because education develops human resources of the nation. For an individual to develop physically, socially, morally, intellectually and becomes an asset or a useful member of his society, he needs education. Aggarwal (2008) considered education as the 'third eye' which gives a man an insight into all affairs and teaches him how to act.

The school exists to serve the educational and social needs of the child where it is located. This would imply that schools are supposed to be a microcosm of the Nigerian society. That is to say that they are expected to reflect the needs, aspirations, traditions, mores, expectations and idiosyncrasies that characterize the communities or societies in which they are situated. It is not in every situation or period that social institution including schools live up to the expectations of the societies or groups that they are responsible to. A number of factors may work independently to deter an institutions' capacity or effort to live up to its expected objectives. These situations underline the need for counsellors and PTA's involvement in certain defined aspects of the school. Such an involvement is to ensure that each child is given the various forms of support or props that are needed for its effective operation and growth.

According to Adebile (2009), teachers are in the school to get the individual students to learn, teachers remove obstacles to learning and identify to resolve cases of friction and frustration in learning in order to achieve successful learning. Apart from learning, there are other needs of the students to be met,



such as social-personal, emotional and career needs of the students. These other needs of the students might not be met by the teachers in the classroom, then the need for the Counsellor and the Parent Teacher Association (PTA).

According to Okonkwo and Anagbogu (2002) opined that a counsellor is a trained professional saddled with the responsibilities of helping a troubled person to understand himself and his work so as to feel and behave in more personally satisfying manner. School counsellors create schoolcounselling programs based on three sets of standards that define the profession.

These standards help school counsellors develop, implement and assess their school counselling program to improve student outcomes. School counsellors deliver developmentally appropriate activities and services directly to students or indirectly for students as a result of the school counsellor's interaction with others. These activities and services help students develop the appropriate mind set and behaviours for student success and improve their achievement, attendance and discipline. Through the school counselling program, school counsellors ensure equitable academic, career and social-emotional development opportunities for all students.

According to Arop (2008) in a paper presented for teachers retraining programme, defined Parents Teachers Association as a conglomerate of parents and teachers of the children in a particular school. He further described it as a welfare organization established to pursue the welfare interests of the school in which the school is situated and where parents live.

The Ondo State guideline on the operation of PTA published by the Ministry of Education (MOE, 2008) defines Parents Teachers Association as a welfare Association of parents of the children and the teachers of a particular school, these parents also include guardians who are living within the community where the school is located. The membership of the PTA shall be selected from unquestionable character members of this community where the school is located. The PTAmembers shall be made up of all Parents/guardians of children attending the school.

Consequently, the association shall be free to co-opt any member of the community as the need arises for expert advice and services. The PTA shall appoint ad-hoc committee for specific projects as the need arises. Members of PTA shall be people of unquestionable character and shall be resident in the community where the schools are located and shall be parents or guidance whose children or wards are pupils/students in the respective schools.

The school is to be conceptualized here as a formal and organized functional social system comprising appropriate plant index, students, teaching and non-teaching staff, whose core goal is to inculcate and stimulate desirable behavioural outcomes in the students for a better living within the community. PTA conveys a partnership that exists or is supposed to exist between the parents of pupils or students, members of the community and the school as represented by school heads and subordinates staff.

It designates according to Igwe (1999), the complex network of relationships and interdependencies located at both individual and group levels such that their activities and roles cut across the social, economic, cultural and educational realms all in favour of better student academic outcomes, better school effectiveness and educational development.

Zuniga & Alva (1999) contend that parents' involvement in school administration is widely acclaimed as important component of educational reform. Comparative studies in education by (Zuniga & Alva, 1999) indicates further that most nations of the world like the United States of America have stipulated in their national education goals that every school will promote partnership that will increase parental involvement and participation in promoting the social, emotional and academic growth of the children. In consonant with the above international experience, the National Policy on Education (FRN, 2004) section 12(104) agrees that systems and consequently their management and day-to-day administration shall grow out of the life and social ethos of the community which they serve. Literature on parents' involvement in school reveals to a large extent that, schools typically decide what parents should know and teach their children and therefore set agenda for PTA relationship (Alva, 1999). It is through this PTA partnership that parents can be taught informally what is worth knowing in relation to their expected roles in that partnership and what they should teach their children at home.

The rationale for PTA school and community relationship cannot be put away by a wave of hand in haste. Some schools of thought have it that the PTA school and community relationship have been justified by empirical studies (Epstein, 1995). It is proven by these studies that a correlate of increase levels of parents' involvement in school activities is an increase in student's achievement. Also established is a



correlation between parent involvement and improved student attendance and reduced dropout rate due to their support in matters of students' discipline (Berger, 1991). It is also accepted that beyond educentric gains the correlation fosters parents' self-esteem as they get involved in non-academic activities of the school such as sports. Their involvement in school makes their children behave better because parents' presence increases accountability at school and in the community (Zuniga & Alva, 1999). At the same time, it promotes parents, families and community empowerment and well-being (Zuniga & Alva, 1996). Finally, for PTA collaboration to be successful, provision must be made for parents to recognize and value their knowledge and skills in that partnership.

There should be opportunity also to utilize those strengths and resources present among the parents, counsellors and teachers to create multiple pathways for students to expand their abilities. Hence the need to explore the role of Counsellors and Parents Teachers association (PTA) in the educational and social development of the child.

Statement of the Problem

There seems to have been substantial evidence proving that being academically and emotionally matured can help individuals excel through life transitions starting from primary to secondary school, and later into to the working world. At the primary and secondary level, educational and social needs is seen as a valuable need that helps students to manage and cope with the demanding nature of the academic. The positive relationship between students' educational and social, adjustment level and higher academic achievement, a mature students have better interpersonal and intrapersonal skills, are more adaptable, and are better at managing academic and social needs. In other words, emotionally and socially matured and well-adjusted child seems more successful in living their secondary life and thus, are able to learn and perform academically. However, students are said to be confronted with some educational and social challenges in both primary and secondary setting which could result to their being poorly adjusted, and thereby affecting their school success adversely. Among several others which are the consequences of inability to adjust to the societal educational and social needs as student are academic failure, keeping bad company, indecent dressing, low achievement and the likes, as a result of these problems related to poor students' adjustment in the school settings, it is therefore, necessary that the role of counsellors and Parents Teachers association (PTA) be inculcated in the educational and social development of the child.

Purpose of the Study

The main purpose of this study is to determine the role of counsellors and Parents Teachers association (PTA) in the educational and social development of the child. Specifically, the study seeks to:

1. Find out the impact of teachers in the educational and social development of the child.
2. ascertain the impact of counsellors and Parents Teachers association (PTA) in the educational and social development of the child.
3. investigate the role of counsellors and teachers in the educational and social development of the child

Research Hypotheses

The following null hypotheses were formulated to guide the study,

1. There is no significant relationship between school counsellor's educational development of the child.
2. There is no significant relationship between Parents-teachers' association and the educational development of the child
3. There is no significant influence of school counsellors, parents-teacher's association and teachers on the educational development of the child.

Methodology

A descriptive survey research design. The population consisted of all counselors, parents-teacher's association and teachers in Ondo State. A simple random sampling technique was used to choose the sample for the study. A simple random sampling technique was used to select 50 teachers, 50 counsellors and 50 parents making a total of one hundred and fifty (150) respondents. The instrument for data collection was structured questionnaire titled "**Role of Counsellors and Parents Teachers Association (PTA)**" on four



point Likert scale. Test-retest technique was used by the researcher; Pearson Product Moment Correlation was used to determine the correlation coefficient which was 0.64. Three hypotheses were formulated to guide the study. The hypotheses were tested using correlation and Anova. The result showed that **there was a significant relationship between school counsellor and educational development of the child.**

Results

Research Hypothesis One: There is no significant relationship between school counsellors and educational development of the child.

Table 1: Summary of significant relationship between school counsellors and educational development of the child.

Variable	N	Df	r-cal	P-value	Decision
School Counsellors	90	148	0.459	0.000	Sig.
Educational Development	60				

@0.05 alpha level of significance

Table 1 showed summary of the significant relationship between school counsellor's educational development of the child. The calculated value revealed 0.459 while the p-value is 0.000, degree of freedom of 148 at 0.05 alpha level of significance. It is therefore concluded that there was a significant relationship between school counsellor and educational development of the child.

Research Hypothesis Two: There is no significant relationship between Parents-teachers' association and the educational development of the child.

Table 2: Summary of significant relationship between Parents-teachers' association on the educational development of the child.

Variable	N	Df	r-cal	P-value	Decision
Parent-Teachers Association	60	148	0.241	0.000	Sig.
Educational Development	90				

@0.05 alpha level of significance

Table 2 showed summary of the significant relationship between Parents-teachers' association on the educational development of the child. The calculated value revealed 0.319 while the table value is 0.451, degree of freedom of 198 at 0.05 alpha level of significance. It is apparent here that chi-square calculated table is greater than critical value which means null hypothesis was rejected. It is therefore concluded that there was a significant relationship between Parents-teachers' association and the educational development of the child

Hypothesis Three: There is no significant influence of school counsellors, parents-teacher's association on the educational development of the child.



Table 3: One-way ANOVA showing the influence of school counsellors, parents-teacher's association on the educational development of the child.

ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2699.015	2	245.365	2.514	.008
Within Groups	8880.655	146	97.590		
Total	11579.670	148			

Table 3 showed the ANOVA analysis of the significant influence of school counsellors, parents-teachers association on the educational development of the child. The $F = 2.514$ at 0.08 level of significance clearly indicates significant influence on their project writing skills, controlling for other relevant factors such as writing experience, academic performance, and background knowledge. The between group mean square is significantly greater than within group mean square. The results from the table showed that there was a significant influence of school counsellors, parents-teachers association on the educational development of the child.

Discussion of Finding

The findings from hypothesis one revealed that there was a significant relationship between school counsellors and educational development of the child. This study was in line with Okonkwo and Anagbogu (2002) who found that school counsellors deliver developmentally appropriate activities and services directly to students or indirectly for students as a result of the school counsellor's interaction with others. These activities and services help students develop the appropriate mind set and behaviours for student success and improve their achievement, attendance and discipline. Through the school counselling program, school counsellors ensure equitable academic, career and social-emotional development opportunities for all students.

The findings from hypothesis two revealed that there was a significant relationship between Parents-teachers' association on the educational development of the child. This finding is consistent with Igwe (1999), who found that the complex network of relationships and interdependencies located at both individual and group levels such that their activities and roles cut across the social, economic, cultural and educational realms all in favour of better student academic outcomes, better school effectiveness and educational development.

The findings from hypothesis three revealed that there was a significant influence of school counsellors, parents-teacher's association and teachers on the educational development of the child. This is in line with Berger (1991). Who opined that it is proven by these studies that a correlate of increase levels of parents' involvement and school counsellors in school activities is an increase in student's achievement. He also established is a correlation between school counsellors and improved student attendance and reduced dropout rate due to their support in matters of students' discipline.

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THE ROLE OF TRADITIONAL INSTITUTIONS (OLORIS) IN MITIGATING BREAST AND CERVICAL CANCER IN NIGERIAN COMMUNITIES

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Abstract

Human beings are products of their communities as charity begins at home. Communities are headed by male and female institutions including 'Oloris' (Consorts). These institutions are in place despite different changes that had occurred in communities through westernisation. Traditional institutions wield great influence on their people as leaders that are close to the grass root. A healthy society is saner and easier to govern when it is done through traditional use of human and material resources involving community education as continuous and lifelong. The incidence and burden of breast and cervical cancer is high in Nigeria as a low income nation with low formal health resources. This study affirms the potent use of Consorts through community education for making the people to be breast and cervix aware thereby, assisting in stemming high rate of female mortality and morbidity caused by breast and cervical cancer if Nigeria is serious with the realisation of the Goal of WHO's 90 – 70 – 90 agenda and the achievement of Sustainable Development Goal 3 and 5. It suggests among others that, Consorts should make use of their community strength to stem breast and cervical cancer among the citizenry.

Keywords: Traditional institutions, Oloris, breast and cervical cancer.



Pictures showing late presentation of Breast Cancer

Background

The role of traditional institutions in our communities cannot be over emphasized. Traditional institutions include the Obas, Emirs, Obis, Igwe, Chiefs and wives of traditional rulers called Oloris who are also known as Consorts. These are institutions in Nigeria before colonisation and are still in place till date. They are development catalysts and agents of mobilisation for enlightenment, socio-economic empowerment, policy implementation, monitoring and review of policy options and custodians of traditions, values and culture of communities.

Traditional rulers are expected to unite in fighting against both communicable and non-communicable diseases, poverty, ignorance, corruption, crime, conflicts, armed insurgency among others that may bedeviled their different communities in order to foster good communalism. This could be done though Community Education.

Community Education is a veritable tool for addressing individual and collective needs. People of communities are presided over by traditional institutions. These traditional institutions have a duty to see to



the enhancement of the community in which healthy living and needs of the people of such communities is paramount.

Since community education embraces beliefs in education as a lifelong process for all members of communities and as active partners in addressing relevant, individual and community needs, then community education is problem centered to satisfy divergent needs of the community. This lies on the involvement of all community members to participate in building the needed capacity in whatever form. Thus, building the capacity of these people for a health oriented value in the non-formal form is quite adequate and a huge project that is worth its salt. Building the capacity of communities to be breast and cervix aware is equally suitable through community education and essential among the people as health is wealth. Also, prevention is better and cheaper than cure.

As human beings grow, there are divisions and growth of cells. These cells must die and rejuvenate at a particular time. However, in some cases, the control mechanisms are faulty; the cells become malignant; these growth result in cancer. Cancer could be in any part of the body except the teeth and nails but this study focuses on breast and cervical cancer in which women are more vulnerable. It is no gain saying that women's value in our communities are immeasurable. They represent a large segment of the rural community as the backbone of the home and care givers in the society. Their reproductive roles is taken with economic roles to maintain good livelihood in the home-a major segment of the community, which also constitutes the nation. Should women die prematurely? Anything that will affect women in the society should be taken seriously.

More women and girls die young in developing countries than boys and men with gendered impacts arising from Maternal Health and Sexual Reproductive Health (SRH) (PWC, 2016). Whereas, Goal 5 affirms Gender equality and the empowerment of all women and girls. There is poor attention to women's health. According to the Center for Disease Control and Prevention, (2020) Breast cancer is the abnormal proliferation of the cells of the breast, in other words it is a disease in which cells of the breast grow out of control. While cervical cancer is also a benign tumour of the cervix. Although, both men and women are susceptible to breast cancer; however, women are more vulnerable to breast cancer while cervical cancer affects the cervix of women.

Nigeria is a signatory to policy document on ideal living, maintenance of the planet and sustainability of the policy through the Sustainable Development Goals (SDG) from which Goal 3-Good health and wellbeing emanated. The magnitude of the problem is that:

In the year 2020, about 2.3 million women were diagnosed with breast cancer worldwide. In the same year, mortality due to breast cancer was 685,000². This translated to about 1,877 death due to breast cancer per day, 78 women per hour and at least a woman dying of breast cancer every passing minute. Breast cancer is the fifth cause of death in women. Overall (522,000 deaths). The most frequent cause of cancer death in women is in less developed economies (324,000 deaths, 14.3% of total, NCCP, 2018-2022). The burden of breast cancer is higher in low and middle-income countries where about 50-80 % of cases present at advanced stages.³ However, at the end of the year about 7.8 million women diagnosed with breast cancer in developed countries in the past five years were still alive.

Cervical cancer is the fourth most common in women with an estimated 528,000 new cases in 2012. About 85% of the global burden also occurs in less developed regions. Almost nine out of ten (87%) cervical cancer death occurs in less developed regions (National Cancer Control Plan (NCCP), 2018-2022). One woman dies of cervical cancer every two minutes. 8,000 Nigerian mothers, sisters or daughters die yearly from cervical cancer. It is projected that annually new cases of cervical cancer will increase from 570,000 to 700,000 between 2018 and 2030. Also, more than 85% of the affected are young, and less educated women that live in poor and rural communities (Awoyelu, 2021).

Cancer is responsible for 72,000 deaths in Nigeria every year, with an estimated 102,000 new cases of cancer annually. Both breast and cervical cancer represent approximately 50.3% of all cancer cases in Nigeria. In America, the mortality incidence ratio is lower than Nigeria. That is, 19% in America, 51% in Nigeria. Three times rate of the United States.

The Problem

- Knowledge and awareness of cancer is very low among the people.
- People, especially women detect late. Some because of low or no education.
- Women present late in hospitals when little can be done to assist them, even when they are aware that



they have breast or cervical cancer because cancer care is expensive and beyond the reach of many.

- Nigerians are exposed to harmful substances like smokes, carbon monoxide and other substances from cigarettes, machines and trucks.
- The level of poverty is high in Nigeria. People take poor diet. The percentage of families that take balanced diet, eat greens and fruits is low. Either, because they are poor financially or have poor knowledge of nutrition.
- Majority of Nigerians are engaged in religious beliefs that have made them to trust in whatever their religious master tell them instead of orthodox medicine. They also link illnesses to enemies, witches, wizards and the like.
- People prefer complementary and traditional medicine usage for cure
- Availability and quality of cancer data in Nigeria is poor because of malfunctioning of cancer registry.
- Absence of well-coordinated screening programmes into existing health programmes
- Non-functioning of comprehensive cancer care centres
- Human capacity development for healthcare personnel in cancer diagnosis and treatment is low. Oncologists are very few in Nigeria especially with the recent 'japa' syndrome, where Nigerian doctors are travelling abroad for greener pastures.
- Provision of medical devices and the maintenance for adequate radiation and chemotherapy is low
- Non availability of adequate comprehensive cancer control encompassing: primary prevention, early detection/screening, and treatment, palliative care makes mortality and morbidity rate to be high in Nigeria.

We all have a responsibility to reduce the incidence and burden of cancer.

While strategies to eliminate the prevalence of cancer is on globally, the Global Strategy to eliminate cervical cancer as a problem of public health was adopted by the World Health Organisation(WHO) in August, 2020 while it was launched globally on November 17, 2021.

WHO aims to eliminate cervical cancer globally through the 90-70-90 approach. That is, 90% of girls must be fully vaccinated with HPV vaccine by age fifteen, 70% of women must be screened with a high performance test by thirty-five years of age and again, by forty-five years of age while 90% of women identified with pre cervical and invasive cancer must receive treatment and be managed.

Vision of NCCP

To reduce the incidence and prevalence of cancer in Nigeria

Mission

To reduce exposure to risk factors of cancer; establish a framework to ensure access to cancer screening, care and improved quality of life of people affected by cancer.

We are all products of our homes while our different homes constitute our communities and the society at large. Our communities are headed by our traditional rulers who institute power and wield governance that predates colonisation. Traditional rulers are closer to the people. Obas and Oloris are custodians of culture, norms, values and tradition. They are revered in the exercise of royalty. Because of this, the community looks up to Obas and Oloris for guidance. This is a potential to be tapped to give the people of the community knowledge and information on breast and cervical cancer as Nigeria's health institution is highly inadequate. Reducing the number of those infected by the disease through education, awareness creation, advocacy, navigating patients to the hospital and rendering palliative care to those living with cancer is a key responsibility of the Oloris by making use of the communities' capacities. People especially, the rural community are not breast and cervix aware. They consult the religious organs of the community, take complementary and traditional medicine and belief in wrong myths of cancer. Whereas concussions could be toxic, contaminated and without adequate measurement thereby, causing more harm to the consumers.

Oloris could make community integration of the SDG 3 practicable through community response to the challenge of ill information and knowledge about breast and cervical cancer by making use of community capacities, building network, partnerships, forming alliances and coalition for advocacy, making sure that everyone participates. This will enhance bonding and the spirit of communalism among



community members. More or less action based programmes for achieving SDG 3 and 5. The traditional Aaro and Esusu could also be utilized to reduce the financial burden of families of those living with breast and cervical cancer. This will also serve as support for palliative care.

The roles of Oloris in their communities are summarized thus:

- Advocacy
- Partnership: with NGOs
- Social mobilization/Sensitization
- Advisory roles
- Regulations and restriction of harmful cultural practices and belief
- Positively influence the health seeking behaviour of women
- Support for NGOs involved in Cancer awareness
- Support for women suffering and dying from cancer

Conclusion

We are endowed in our communities. As leaders in our various communities, we must continue to engage our members on development issues. A salient one is the issue of cancer, because health is wealth. Deliberative civic engagement will go a long way to building a healthier and saner community. For instance, we have both human and material resources in the form of town halls, schools, churches, mosques, shrines, community health workers, nurses, teachers, social workers, nutritionists, medical doctors among us whose potentials could be harnessed. These will go a long way to building the peoples' capacities in information, knowledge, resource mobilization and utilization. This way, we would have assisted in building our socio-economic capital through healthy living and community cohesion through civic engagement as part of our social responsibility.

Suggestions

- There is the need to get every member of our communities involved in the sensitisation and education of breast and cervical awareness through regular Breast Self-Examination (BSE), screening, vaccination of girls against HPV before the age of fifteen, screening of the cervix for older ladies and seeking early appropriate medical care by those living with breast and cervical cancer.
- Communities need to make use of both material and human resources within, for achievement through Community Education. For instance, medical personnel like doctors, nurses, community health workers, pharmacists, nutritionists and teachers live in communities including those that are retired. In westernized climes, retired technocrats volunteer in their communities in education, health, safety and the like when the need arise. It is time Nigeria emulate this.
- Consorts need to form coalition for advocacy and fund raising to assist in enacting laws for improvement in treatment for cancer care.
- Consorts need to utilise both traditional and modern means of communication to enhance success in awareness creation. These means include the use of town criers, community radios and mobile phones.
- Government need to enact law against movement of trucks during the day. This will reduce the intake of carbon monoxide and other harmful substances emitted by trucks.
- Government should as a matter of urgency warn religious organisations against dabbling into health issues of citizens without putting the necessary resources in place for such
- People should refrain against stigmatizing anyone that is living with cancer.

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MANAGEMENT OF EDUCATION AT THE SECONDARY SCHOOL LEVEL THROUGH EFFECTIVE LEADERSHIP PRACTICES FOR NATIONAL DEVELOPMENT

BY

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Abstract

Education remains the key to national development. This paper examines the management of education at the secondary school level of through effective leadership practices for National Development. Descriptive survey research design was adopted for the study. Four research questions guided the study. The population consisted of all the teachers and the secondary schools in the study area. Simple random sampling was used to selected teachers for the study. The questionnaire titled– “Managing Secondary School through Effective Leadership Practices of Principles for National Development” (MSSTELPPND) was the instrument. The instrument was tested for reliability co-efficient and yielded 0.78; 0.69 and 0.71 respectively using the Cronbach Alpha. Research Questions were analysed with simple frequency, percentages and Mean statistic. The findings revealed that effective leadership practices of the principals were imperative for national development. Therefore, it is recommended that Ministry of Education should organize leadership training programmes for teachers and principals in secondary schools.

Key Words: Management of Education, Secondary School, Leadership Practices, National Development

Introduction

Government at all levels has always invested in education. Education has been seen as the bedrock of any nation”. In the Nigerian philosophy of education section 1 paragraph 39. “Education is an instrument for national development and social change” (FGN 2014). The secondary school level of education in Nigeria comes immediately after primary school education. This level of education start with the Junior secondary Education and end with post Basic Education and career Development. The secondary education level is the preparatory stage for life and living in the world of work and wealth creation. This level of education leads the child (student) to his path of career in life both for now and later in life. The secondary level of education goes beyond passing final examination but to benefiting from the system to be self-reliance and making meaningful contribution to the development of the nation

The place of secondary level of education is crucial for national development with reference to some of the objectives of post-Basic Education and Careers Development (PBECD) which include:

- Provide holders of the Basic Education with opportunity for education higher level, irrespective of gender, social status religious or ethnic background.
- Offer diversified curriculum to cater for the differences in talent, disposition opportunities and further roles.
- Provide trained manpower in to applied sciences, technology and commerce at sub-professional grades.
- Provide entrepreneurial, technical and vocational job specific skills for self-reliance and for agricultural, industrial, commercial and economic development
- Develop and promote Nigeria languages art and culture in the context of world cultural heritage.
- Inspire students with a desire for self-improvement and achievement of excellence
- Foster patriotism, natural unity and sincerity education with emphasis on the common ties inspire of our diversity and



- Raise morally upright and well-adjusted individuals who can think independently and rationally, repeat the views and feelings of others and appreciate the dignity of labour. (FGN.NPE 2014) section3: paragraph36.pp.16-17

At the secondary school level of education the students are exposed to diversified curriculum. Wilson (2016) has described education as a vital tool in the development of the learners through transformation of worthwhile values such as skills, knowledge and planned activities that can help develop the learners' potentials for the benefit of the society. Therefore education provides the learners with potentials in knowledge and skills needed for transformation of the society. For proper implementation of the necessary curriculum aimed at achieving the laudable objectives of secondary school level of education effective leadership is required at the educational institution called secondary school.

The principal occupies the leadership position of the secondary schools in Nigeria. He is the chief of executive who can be a male or female. The principal is the head teacher and the leader in the school whose duty is to, guide, conduct, direct, supervise, enforce, motivate and manage the affairs of the school. The principal position has more responsibilities than remuneration (Olatunji 2015). The principalship is always for a period of time since the position is by promotion on the job and seniority in rank. (Okpa, Okoi and Uchendu 2016). With a principal heading a school and handing over a successor.

The principals has responsibilities to the staff and students and the community. He is responsible for effective day-to-day affairs of the school in ensuring that quality learning and teaching takes place as well as the supervision of the human and material resources of the school. Abdul Rasheed, & Bellow (2015). The leadership position of the principal requires his employing device leadership styles in the course of performing his duties. The duties are both instructional supervision and management practices both to the learners and the teachers.

Concept of national development

Development is a universal term used for growth, increase, advancement in different affairs and dimensions. National development as concept has been defined by various scholars from different perspectives. As opined by Ogai cited in Adeshina (2021) national development comprises all parts of human life, ranging from decrease in illiteracy rates, creating jobs, sharing technologies from developed countries with developed countries, protecting the environment and natural resources, ensuring women's rights alleviating poverty, providing food, medicine and education programmes for children. This concept is highly comprehensive covering every facet of human endeavour and living.

Further, Emeh and Ogaboh cited by Eduwen and OsagieObazee (2016) sees national development as the total transformation of society making humanity the focus of the development drive and seeking to develop man's potentialities in a total sense. Here the focus on human development which aim at reduction of poverty, wealth creation, equitable distribution of wealth, ensuring nutrition and health, housing and auxiliary services, social security and welfare. This presupposes that national development is an all embracing entity on the part of the citizens and the society at large. National development encompasses of gainful employment, sufficient food, poverty reduction and wealth creation in the society with visible element of equality, dignity, social justice and equity. National development brings total change to the national in all areas of human endeavours as economy, technology and education benefit to all citizens. In the same vein, in an earlier opinion, Todero and Smith 2006 opined that national development in a modernization paradigm as the development in multidimensional process that involves the sustained elevation of the entire society and social system towards a better humane life. A closer understanding of the various views of these scholars point to the fact that education is the drawing force for national development. The secondary school level of education is the beginning where career choice are made by students which eventually affect their lives, living and contribution to national development.

Leadership and Leadership Styles

Concept of Leadership

Many scholars has attempted to define leadership. There has been diverse definitions of the concept of leadership depending on the perspective and nature of organization and has been given a wide range by different scholars. There is no organization without a leader who occupies the apex position of every organization. According to Ikegwuoha (2017) leadership is an individual ability to influence others within



an organizational setting. Leadership is an interaction between members of groups. In this view, in a school setting the leader who is the principal interacts with the staff and students with the aim of influencing the activities in the school towards goal achievement in the education industry. Oraegbunam (2004) sees leadership as the ability to initiate action motivate and direct others towards fulfillment of a common goal. Leadership exist in all organization and the education industry is not an exception. Therefore in a secondary school environment skillful leadership is a key factor to the development of the nation.

Leadership style is the behaviour and attitude of the leader which attracts or motivates subordinates to achieve the objectives of the organization as opined by Adeyemi (2014). This entails that a leader has a specific attitude or behaviour which influences the subordinates in responding to his leadership. The leadership style make for success or failure of the leader in any organization including secondary schools. This also means that for the school principal, his leadership style applied in the management of the school will determine how the staff will follow him and response to achieving educational goals for national development. There are many types of leadership styles in work places as there exist leaders. The goals and the climate of the organization determines the type of leadership style to apply (Yan and Lay (2020)). Some of these leadership styles will be discussed briefly.

Kathrime Bradly (2023) included types of leadership in school administration to Administrative, instructional, shared and classical Administrative leadership style is a type of leadership that takes on bureaucracy and enforcing rules to ensure accountability. On the other hand, instructional leadership focuses on curriculum development in order to ensure academic excellence of the student. Its goals is for students growth. Here the principal monitors and evaluate teachers and ensure allocation of resources for achievement of academic success, and high advance of the school. The shared leadership style could be said to be democratic leadership. Where the principal work together with the subordinates/teacher in collaborative leadership. Lastly, is the classical leadership according to Bradley (2023) where the leader is in control and is his pre-occupation with power and position and the need to get the job done. Transactional leadership style is also referred to as the authoritative leadership. The leadership style emphasis good performance and productivity (Lincion 2012). Laisses Faire leadership style entails the leader avoiding responsibility. The leader is passive and not able to give direction to the followers. Northouse (2017) describes Laisses Faire leader as one who makes only the modest effort in satisfying the needs of the followers.

Transformational leadership style is a process that stimulates and inspires both leaders and followers and enhances their abilities in work place. MacGregow Burns cited in Ajudeonu (1978) who discovered transformational leadership style defined it as a process of engaging with others to create a connection that increases motivation and morality in both the leader and the followers. The knowledge and application of these school principals is needful in the success of effective leadership practices.

Literature Review

The leadership in any organization has definite influence on the performance and productivity of the organization. The behaviour of leaders has been identified as factors that influence the subordinates in work place (Oyegoke (2012)). Effective leadership practices of secondary school principal is pivot to the advancement of the nation. The school principal has three main areas of his leadership practices which are educational reforms, increasing participation of subordinates in work place and producing a change (Abbas et al 2020). The effectiveness of the principal contribute to the improvement of the quality of education in the era of technological advancement.

Elsewhere within and other Nigeria empirical studies has been carried out on principals leadership and his leadership practices. The main job of a principal according to Zhan et al (2022) is to assist in leading, directing and co-ordinating various activities in the school environment. The principal main responsibility is to create a conducive for effective teaching and learning for attainment of the educational objectives. The principal focuses on the day-to-day activities in the school which will enhance the educational achievement of the students who will in turn contribute to the development of the society as Chin (2015) stated that academic environment is a process of social influence through which an individual can enlist in and the support of others in attainment of goals for the individual and the society at large. Leadership is prominent power position where the leader promotes movements or changes in others (Wu et al 2020). Also Pluc et al (2021) found out that leadership in any organization whether educational the leadership style and practices is to give directions, implementing plans and motivating followers. Ekpoh and Asquo (2018) in a study of



principal transformational leadership practices as determinates of organizational commitment and value re-orientation among secondary teachers found out that there was a significant effects of principal's leadership practices on teachers' commitment to duties.

Furthermore, Hafsat et al (2020) reported that principals instructional leadership behaviour was significant in school administration. Also Okoiet el (2021) in their research carried out in Calabar on leadership development practices and secondary school effectiveness for sustainable growth and development the result revealed positive influence. In an earlier study carried out by Onyali and Akinfolarin (2017) it was reported that principal's application of instructional leadership practices for secondary school administration did not produce any significant between teachers and principals rating but it was agreed that there was improvement on duties on the part of the teachers when supervised on duty. In recent empirical work of Ajudeonu (2020) on the degree of the practice of transformational leadership style in primary schools by head teachers it revealed a high practice of transformational leadership style by head teachers in Delta State. Again Aibangbe (2020) in study on principals leadership style in secondary schools reported that different principals used different leadership styles in their various school.

Considering the strategic position of secondary school level of education which is expected to bring benefits both of the products themselves and the society, the leadership styles of the principal become imperative. Hence, the study is to investigate the effective leadership styles of the principal in managing secondary level of education for national development.

The main purpose of this study was to investigate the management of education at the secondary school level through effective leadership practices for national development.

The specific objectives were to

- Investigate the instructional supervisory leadership practices of secondary school principal
- Determine the management leadership practices of secondary school principals
- Determine how the leadership practices of the secondary school principal can enhance sustainable national development

Research questions

This study was guided by the following research questions

- What are the instructional supervisory effective leadership practices of secondary school principals for national development
- What are the management leadership practices of secondary school principals for national development?
- In what ways could the secondary school principal promote effective leadership practices for national development?

Methodology

The descriptive survey design was employed to investigate the management of education at the secondary school level through effective leadership practices for national development. This was found appropriate based on the opinion of Best and Kahn (2003) that descriptive design is concerned with conditions or level of performance that exist, opinions that are held, processes that are ongoing, effects that are evident or trends that are developing.

The population of the study consists of all teachers in government owned secondary schools in Delta North Senatorial district which is one hundred and seventy-seven (source, Delta State Ministry of basic and secondary Education – (+234) 10100001111) on line. The sample for the study was three hundred and sixty teachers from thirty selected schools through simple random and purposive sampling techniques. The instrument for data collection was questionnaire titled “Managing Secondary School Through Effective Leadership Practices of Principals for National Development (MSSTELPPND).

The questionnaire is likert scale of agree and disagree. It is made up of two main sections; section A elicited demographic information of the respondent and section B were items that elicited answers to the research questions. Some experts in the field of education established the face and content validity. The instrument was tested for reliability co-efficient and yielded 0.78, 0.69 and 0.71 respectively using the cronbach alpha.

The administration of the questionnaire to the respondents was done by the researcher and trained research



assistants. The data was analyzed with simple frequency count, percentages and mean statistic.

RESULTS

Research Question one: What are the instructional supervisory effective leadership practices of secondary school principals for national development?

Table one: Mean responses of respondents on the instructional supervisory effective leadership practices of secondary school principals for national development.

S/no	ITEMS	SA	A	D	SD	Total Score	Mean Score
1	Supervising classroom instructional activities	500	600	50	—	1,150	3.19
2	Promoting positive learning environment and academic climate	360	600	60	10	1,030	2.86
3	Monitoring of teachers to attendance to school to ensure adequate teaching	340	600	62	30	1,032	2.86
4	Developing a supportive work team environment	600	150	140	50	970	2.69
5	Encouraging teachers participation in school activities	364	660	54	13	1,091	3.03
6	Setting up strategies to ensure props keeping of school records especially those kept by teachers	400	450	120	40	1,010	2.80
7	Developing mission and goals for the school	280	615	120	15	1,030	2.86
8	Supervising the educational activities of the school regularly	340	630	66	22	1,058	2.93

Data presented on table 2 showed that all the eight (8) had mean rating that ranged between 3.19 to 2.80 which are greater than the cut-off value 2.50 on four point rating scale. The respondent mean rating agreed that instructional supervisory effective leadership practices of secondary school principals are necessary for achieving national development. Supervisory classroom instructional activities of staff had the highest mean of 3.19, closely followed by encouraging teachers participation in school activities. While items 2,3,6,7 and 8 had mean score between 2.86, 2.86, 2.80, 2.86 and 2.93 respectively and item four had a mean score 2.69. The mean scores indicated that they all agreed that the secondary school principals instructional supervisory leadership practices are necessary for achieving national development.

Research Question Two: What are the management leadership practices of secondary school principal for national development?

**Table Two: Means responses of respondents on the management leadership practices of secondary school principal that will enhance national development.**

S/NO	ITEMS	SA	A	D	SD	TOTAL SCORE	MEAN SCORE
1	Proper planning of school activities	352	555	94	30	1,031	2.86
2	Guiding the educational objective in line with national standards on national policy on education	240	255	380	20	595	2.48
3	Delegation of duties and tasks to qualified and appropriate staff	400	525	70	40	1,035	2.87
4	Provision of necessary information to staff for their guidance in job performance	380	555	80	20	1,065	2.95
5	Ensuring teacher props coverage of scheme of work	352	555	90	32	1,031	2.86
6	Ensuring faithfulness in the performance of duties	340	462	140	43	985	2.73
7	Appropriate allocation and adequate allocation of subject and time for specific subject for enough courage.	420	591	54	21	1,080	3.01
8	Proper planning to ensure that extra-curricular activities do not bring wastage of time to academic work	208	231	400	21	560	2.38

The result on table 3 indicated that management leadership practices of secondary school principle could lead to national development. The result indicated that management practices of secondary school principals such as; proper planning of school activities, delegation duties and task to qualified and appropriate teachers and ensuring teachers coverage of the scheme of work have means score of 2.86, 2.87 and 2.86 respectively. Appropriate allocation and adequate allocation of subject and time for specific subject for enough coverage had the highest mean score of 3.01. but items 2 and 8 had mean scores of 2.48 and 2.38 below the cut-off volume of 2.50.

The respondents disagreed on guiding the educational objectives in line with national standards on national policy on education and proper planning to ensure that extra-curricular activities do not bring wastage of time to educational activities.

Search Question Three: In what ways could secondary school principals promote effective leadership practices for national development?

Table Three: Mean responses of respondents on the ways secondary school principals could promote effective leadership practices for national development.

S/NO	ITEMS	SA	A	D	SD	TOTAL SCORE	MEAN SCORE
1	Good management of school facilities	600	345	120	25	1,090	3.02
2	Generating fund through more avenues to improve school facilities	400	360	180	20	960	266
3	Providing good services in the school to attract parents' co -operation	320	610	80	30	1,030	2.86
4	Acquiring qualified staff into the school	340	636	62	22	1,060	2.94
5	Allocating subjects to qualified staff	420	495	110	45	1,070	197
6	Enhancing and encouraging professional development of staff	340	465	140	40	985	273
7	Ensuring discipline in the school of both staff and students	280	615	120	15	1,030	2.86
8	Good relationship with the community	284	612	120	12	1,028	2.85

Table Four: above presents the mean ratings at the various ways the secondary school practices could promote national developing. The result showed that all the items are result therefore indicate that effective leadership styles practices of secondary school principals can promote national development at the secondary school level of education in Nigeria.

Discussion

The findings on principals, instructional supervisory leadership practices indicated that managing secondary schools to enhance national development was necessary. The finding was in consonance with the study of Halfatet. al (2020) which reported that principals instructional leadership behaviour was significant in the management of secondary schools. But this was adverse to findings of Onyeli and Akinfolarin (2017) who reported in their study that principal's application of instructional leadership practices did not produce significant result in the rating by teachers' dedication to duty.

The result on principal management leadership practice to enhance national development was positive. In the same vein with the study of Ekpoh and Asuguo (2018) that reported that principals management leadership practices had significant effects on teachers' commitment to duties. This is also supported by the findings of Uzmaet. al (2022) that principal's leadership style had positive impact on teachers .

The result on table three on the ways secondary school principals could promote effective leadership practices for national development was significant as all the respondent responded positively. The finding of the study was supported by that of Okoi et al (2021) which reported that leadership practices of secondary school principals was significant in contributing to sustainable growth and development in the society

Conclusion

The investigation into the leadership practice of secondary school principals' revealed that increase in the instructional supervisory efficient management by principal will make teachers to be supportive to their management and administration in order to improve performance that could result to the benefit of the secondary school products. This will in turn bring about national development.

Recommendations

1. Management training through conferences seminars and workshops and other leadership training programmes that will enhance the secondary school principal's leadership effectiveness should be organized at local, state and national levels stakeholders in the education industry.



2. Secondary school principals should employ the use of instrumental supervisory leadership practices to enhance their leadership effectiveness for sustainable national development
3. The principals should encourage collaborations within and outside the school by engaging teachers parents community and the political class in the communities to participate in the management of the school for national development.
4. Ministries of education should provide opportunities to teachers to acquire leadership skills through training on the job since these teachers will eventually rise to be position of by a principal in the course of promotion and longevity on the job.

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INFLUENCE OF MULTIMEDIA-BASED INSTRUCTION ON ACADEMIC ACHIEVEMENT AND RETENTION IN MECHANICAL TRADES: A GENDER-BASED ANALYSIS IN ONDO STATE, NIGERIA.

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Abstract

The study investigated the impact of multimedia-based instruction on academic achievement and retention rates in mechanical trades in Ondo State, Nigeria. The study utilized a quasi-experimental design with a sample size of 120 participants divided into an experimental group and a control group. The experimental group received multimedia-based instruction while the control group received conventional instruction. The study also conducted a gender-based analysis, comparing the academic achievement and retention rates of male and female students in both groups. The study used a reliability coefficient to measure the consistency and accuracy of the instruments used to assess academic achievement. The method of calculation involved analyzing the mean scores and standard deviations of each group, as well as conducting a t-test at “p-value<0.05 significant level to determine the significance of the differences between the two groups. The Cronbach's alpha coefficient was used to ensure that the pretest and posttest instrument used to measure academic achievement had high internal consistency and reliability of 0.87. The results of the study showed that multimedia-based instruction had a significant positive impact on academic achievement and retention rates in mechanical trades. The experimental group had higher mean scores and completion rates compared to the control group. The study also found that there were significant differences in academic achievement and retention rates between male and female students in both groups. The study provides evidence that multimedia-based instruction can be an effective teaching method for improving academic achievement and retention rates in mechanical trades. The gender-based analysis also suggests that this method can be equally effective for both male and female students.

Key words: *Multimedia-Based Instruction, Academic Achievement, Retention, Mechanical Trades and Gender.*

Introduction

The use of multimedia resources has become increasingly popular in recent years due to their ability to engage learners with a variety of visual, auditory, and interactive materials. In this paper, we will examine the various factors that influence the effectiveness of multimedia-based instruction in the context of mechanical trades education, with a particular focus on gender-based differences in academic achievement and retention. According to Lee and Owens (2014), multimedia-based instruction refers to the use of digital technologies to present educational content through multiple modes of communication, such as text, images, video, audio, and interactive elements. Technical education requires hands-on skills, which may be more challenging to develop through multimedia-based instruction alone. Nevertheless, multimedia-based instruction can complement conventional instruction by providing students with visual aids and interactive simulations that can enhance their understanding of complex concepts (Ertmer & Newby, 2013).

Previous studies have shown that multimedia-based instruction can have a positive impact on academic achievement and retention. For instance, a meta-analysis conducted by Mayer (2014) found that multimedia-based instruction was associated with higher learning outcomes compared to conventional instruction. Similarly, a study by Adesope et al. (2010) found that multimedia-based instruction can improve knowledge retention and transfer. These findings suggest that multimedia-based instruction has the potential to enhance the learning experience of students in various fields. The aim of multimedia-based



instruction is to enhance the learning experience by providing students with engaging and interactive content that helps them to better understand and retain the material.

The efficacy of multimedia-based instruction is heavily influenced by the modality of the content being used. According to a recent study published in the *Journal Frontiers in Psychology* by Xiao et al (2021), there are indeed significant individual differences in learning styles among students, and it is important for educators to consider these differences when designing instruction. Their research suggests that students who are more visual learners may benefit from more graphic-based materials, such as diagrams or videos, while students who are more auditory learners may benefit from lectures or podcasts, and students who are more kinesthetic learners may benefit from hands-on activities or simulations. Therefore, the use of multimedia resources can be particularly beneficial for students who have a preference for visual or auditory learning. These students may benefit from the use of videos, animations, or audio recordings that help to illustrate difficult concepts. However, it is also important to ensure that the content of multi media materials is appealing and accessible to all students, regardless of their learning preferences.

The design of multimedia materials is another crucial factor that impacts the effectiveness of instruction. Based on a recent study by Liu et al (2021), effective multimedia design should incorporate interactive features, offer a personalized learning experience, and be accessible across various devices. This ensures that students are able to engage with the content and understand the material more effectively. Similarly, Kirschner and Van Merriënboer (2013) suggest that interactive elements can be particularly effective when used to promote active learning. By allowing learners to engage with the material in a variety of ways, such as through problem-solving exercises or case studies, educators can help to create a more dynamic and engaging learning experience.

Moreover, the use of interactive elements, such as quizzes, simulations, and games, can also help to enhance engagement and retention (Van der Meijden, 2014). To ensure that all learners can benefit equally from interactive multimedia-based instruction, it is important to consider the potential impact of gender differences in design.

Gender-based differences may also play a role in the effectiveness of multimedia-based instruction. Since, multimedia-based instructions involve the use of various forms of media to deliver educational content to learners, cognitive processing differences between genders can affect the effectiveness of these instructional methods. Women tend to process information more holistically, attending to the overall context and relationships between elements, while men tend to process information more analytically, focusing on individual elements and their logical rules (Miller & Halpern, 2014).

Recent studies have also shown that multimedia-based instructions providing clear visual or narrative structure are more effective for women, who prefer these types of presentations (Kim & Baylor, 2015; Seepó, 2019). For example, an instructional video that has a clear storyline or visual cues to help learners understand the sequence of events may be more effective for female learners. On the other hand, men may benefit more from multimedia-based instructions that provide step-by-step guidance or interactive elements to engage their analytical processing (Liao & Huang, 2020). It is important to note that individual differences can also play a role in the effectiveness of multimedia-based instructions, and that learners of all genders can benefit from different instructional strategies (Dunn et al., 2019). Therefore, it is crucial to tailor multimedia-based instructions to the specific needs of individual learners for better effectiveness.

Influence of multimedia-based instruction on academic achievement and retention in mechanical trades is a complex and multifaceted issue that requires careful consideration of various factors. The use of multiple modalities, effective design, and consideration of gender-based differences are all important considerations in promoting effective multimedia-based instruction. By incorporating these factors into the design and implementation of multimedia-based instruction, educators can help to promote a more engaging and effective learning experience for all students of mechanical trades in Ondo State, Nigeria

Statement of the Problem

Technical education in Nigeria has been identified as a key factor in promoting economic growth and reducing youth unemployment. However, there are concerns about the quality of technical education in the country, particularly in the area of mechanical trades. Furthermore, there is a gender gap in technical



education, with male students being overrepresented in technical fields. To address these issues, there is a need to identify effective teaching strategies that can enhance the technical skills of students in Nigeria and promote gender equality in the field.

However, there is a lack of research on the effectiveness of multimedia-based instruction in mechanical trades, particularly in Nigeria. Moreover, there is a need to investigate potential gender-based differences in the impact of multimedia-based instruction on academic achievement and retention in mechanical trades.

Therefore, the problem addressed by this study is the lack of research influence of multimedia-based instruction on academic achievement and retention in mechanical trades, with a focus on gender-based differences, in Ondo State, Nigeria. The study aims to fill this gap in the literature and provide valuable insights into the use of multimedia-based instruction in technical education in Nigeria.

Purpose of the Study.

The purpose of the study was to determine influence of multimedia-based instruction on academic achievement and retention in mechanical trades, with a focus on gender-based differences. Specifically, the study determined:

1. The difference in academic achievement mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method.
2. The difference in retention mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method.

Research Questions

The following research questions guided the study.

1. What is the difference between the academic achievement mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method?
2. What is the difference between the retention mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method?

Null Hypotheses

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

1. There is no significant difference between the academic achievement mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method.
2. There is no significant difference between the retention mean scores of male and female mechanical trades taught with multimedia based instructional method and those taught with conventional method.

Methodology

The study used a quasi-experimental design with a pre-test and post-test measurement to compare the effects of conventional instruction versus multimedia-based instruction on academic achievement and retention in mechanical trades based on gender. The study selected two technical colleges in Ondo State, Nigeria. A purposive sampling technique was used to select two groups of students – an experimental group and a control group. The experimental group received multimedia-based instruction, while the control group received conventional instruction. Data was collected using a pre-test and post-test measurement that assessed students' academic achievement and retention of knowledge in mechanical trades. The research instrument used was (MTAT) for both experimental and control group. The results were analyzed using t-test to determine if there is a significant difference between the academic achievement and retention mean scores of male and female mechanical trades students taught with multi-media based instructional method and those taught with conventional method. The statistical significance level was set at $p < 0.05$. Finally, the study was adhered to ethical considerations.



Results

Research Question 1:

What is the difference between the academic achievement mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method?

Table 1

Mean achievement scores between male and female mechanical trade students taught with the multimedia and conventional group.

Method	Pre-test			Post-test		Mean difference
	N	Mean	Sd	Mean	Sd	
Experimental Group						
Multimedia						
Male	50	16.00	4.96	31.59	4.00	15.59
Female	10	17.25	2.21	31.25	2.99	14.00
Control group						
Conventional						
Male	50	14.06	4.89	19.56	3.45	5.50
Female	10	10.29	2.93	17.57	2.51	7.29

The results in Table 1 indicate that male students' mean achievement score for pre-test are 16.00 and 31.59 in post-test with a mean difference of 15.59 while female students obtained a mean score of 17.25 in pre-test and 31.25 in post-test with a mean difference of 14.00. The mean of male students' in multimedia is preferable since it has a higher score. On the other, male students' taught with conventional teaching method have a mean difference of 5.50 and female students taught the same method have a mean difference of 7.29. When compared across teaching with multimedia and conventional method, male students taught with multimedia and those taught with conventional have a mean difference of 10.09 in favour of those taught with multimedia while their female counterparts have mean difference of 6.71 also in favour of those taught with multimedia. Conclusively this shows that teaching and learning are more effective in post-test than in pre-test as regards experimental and conventional method.

Research Question 2

What is the difference between the retention mean scores of male and female mechanical trades students taught with multimedia based instructional method and those taught with conventional method?

**Table 2**

Mean retention scores of male and female mechanical trade students taught with the multimedia and conventional group.

Method	Post-test			Retention		Mean difference
	N	Mean	SD	Mean	SD	
Experimental Group						
Male	50	31.60	3.45	34.59	3.67	2.99
Female	10	31.25	2.99	34.50	2.89	3.25
Control Group						
Male	50	19.56	3.45	16.94	3.45	-2.62
Female	10	10.29	2.93	15.14	3.38	4.86

The result in Table 2 shows that the male post-test and retention mean score of the students taught using multimedia are 31.60 and 34.59 with a mean difference of 2.99 while the females have a post-test and retention mean score of 31.25 and 34.50 with a mean difference of 3.25. However, the male group has a mean loss of -2.618 while the female group has a mean gain of 4.857 for the control group.

Hypothesis 1

There is no significant difference between the achievement mean scores of male and female mechanical trades students taught with multimedia based instructions and those taught with the conventional method.

Table 3

t-test Results comparing the achievement mean scores of male and female mechanical trades students taught with multimedia and conventional method

Source	df	Sum of Squares	Mean sum	f-cal	f-tab	Sig	Remarks
Method	1	1475.694	1475.694	110.925	3.96	0.000	Rejected
Gender	1	12.091	12.091	0.909	3.96	0.343	Not rejected
Method*Gender	1	6.061	6.061	0.456	3.96	0.502	Not rejected
Error	80	1064.283	13.304				
Total	83						

The results in Table 3 show that at 0.05 level of significance with 1 degree of freedom (df), the p-value is 0.000 which is lower than 0.05 level of significance and the f-calculated of 110.925 is greater than f-tabulated of 3.96. This result shows that there is a significant difference between the achievement scores of mechanical trade students taught with multimedia and those taught with the conventional method. Based on this result, the null hypothesis is rejected.

Hypothesis 2

There is no significant difference between the retention mean scores of male and female mechanical trades students taught with multimedia based instruction and those taught with the conventional method.

Table 4***t*-test Results comparing the retention mean scores of mechanical trade students taught with multimedia and conventional method**

Source	d.f	Sum of Squares	Mean sum	f-cal	f-tab	Sig	Remarks
Retention	1	3057.361	3057.361	257.686	3.96	0.000	Rejected
Gender	1	7.959	7.959	0.671	3.96	0.415	Accepted
Retention*Gender	1	6.517	6.517	0.549	3.96	0.461	Accepted
Error	80	1064.283	13.304				
Total	83						

Table 4, shows that there is a significant difference between the retention scores of mechanical trade students taught with multimedia and those taught with the conventional method since the p-value of 0.00 is less than 0.05 and the f-calculated of 257.686 is greater than f-tabulated of 3.96. Thus, the null hypothesis is rejected.

Discussion of Results

The findings of the study showed that male and female students taught mechanical trades using multimedia obtained higher post-test scores than those taught with conventional method. This result concurs with the findings of Ogunbote and Adesoye (2016) which hold that multimedia adds new dimensions to learning experience because concepts are easier to present and comprehend when the words are complemented with images and animations. The achievement can be likened to some practical exercises incorporated in teaching with multimedia. The findings further showed that there was significant difference in the mean difference scores of students taught mechanical trade in experimental and control groups.

There was a slight difference on the performance of male and female student using the mechanical retention inventory though was significant. Male students' retention score is slightly higher than those females. The slight difference is in line with what Ogunboyede (2011) stated concerning feminine attitude and learning readiness for science subjects. The author opined that the exposure of males from childhood to more scientific activities very early in life gives them added advantage over the female. However, teaching with multimedia has helped to reduce this gender inequality to a barest minimum as it creates equal opportunity for both male and female against the assertion of Okeke (2018) in his study where he posited that girls and women perform far below the level of boys and men in science, technology and allied field with identified obstacles encountered by African females.

Conclusion

The study showed that teaching with multimedia enhanced students' academic achievement and retention in mechanical trades. This indicates that teaching with multimedia is an effective method of teaching mechanical trades at NTC level in the sense that it enabled students to learn very well and also retain what they learnt for a considerable period of time. It is therefore, concluded that, teaching with multimedia could foster mastery of concepts and also, enhance students' academic achievement and retention in mechanical trades.

Recommendations

Based on the findings of this study, it is recommended that;

1. The multimedia instructional method should be formally adopted as a method of instruction in technical colleges this will enhanced students' academic achievement.



2. Teachers of mechanical trades should acquire the knowledge and skills for using the multimedia based instructional method through in-service training, conferences, seminars and workshops organize by government and private sectors.
3. Curriculum planners of technical college programmes should collaborate with mechanical trades' experts to develop workable motor vehicle mechanics work curriculum that will accommodate teachers' use of multimedia for effective instructional delivery.
4. Mechanical trades teachers should use multimedia in teaching to enable students learn and retain learning in order to improve their academic achievement.
5. Mechanical trades students' should be encouraged and motivated to consistently use multimedia in learning. This can make them master the skills so as to be more creative in knowledge application and consequently enhance their academic achievement and retention.

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APPLICABILITY OF CLASSICAL AND ITEM RESPONSE THEORIES TO TEACHER-MADE MATHEMATICS ACHIEVEMENT TEST STANDARDIZATION AMONG SECONDARY SCHOOL STUDENTS IN ONDO STATE, NIGERIA

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ABSTRACT

Mathematics as a subject has become imperative to seekers of admission to Nigeria Universities. There has been public outcry over the abysmal performance of secondary school students in mathematics. This poor performance has been a source of concern to education stakeholders in Ondo State. Therefore, this study investigated applicability of classical and item response theories to teacher-made mathematics achievement test standardization among secondary school students in Ondo State, Nigeria. The study employed the descriptive research of the survey type. Multi-stage sampling technique was used to select a sample size of 360. Two equivalent teacher-made mathematics multiple-choice achievement test (TMATI & TMATII) were used to collect data. Data collected were analyzed using descriptive statistics to answer research questions and inferential statistics to test all the hypotheses at $\alpha=0.05$. The results of the study showed that there was no significant difference between: difficulty levels of classical test theory (CTT) and item response theory (IRT) $t=0.112$; $p>0.05$; discriminating indices of CTT and IRT $t=0.156$; $p>0.05$; CTT and IRT scores of standardized teacher-made mathematics multiple-choice test using difficulty level, discrimination indices and guessing tendency $F_{3,19}=0.567, 0.931, 1.295$ and 0.911 ; $p>0.05$. Also significant difference existed in the guessing tendency of students in CTT and IRT teacher-made standardized mathematics multiple-choice tests $F_{3,19}=1.454$; $p<0.05$. Based on the findings, it was concluded that CTT and IRT can be complementarily used for the development and standardization of mathematics achievement test. It was recommended that mathematics tests designed for the students both at internal and external examinations should be standardized using both CTT and IRT.

Keywords: Difficulty levels, discriminating indices, guessing tendency, classical test theory, item response theory.

Introduction

Mathematics is one of the secondary school subjects that requires evaluation to ascertain students' basic knowledge, skills and understanding of the concepts and the nature of mathematics problems in any society. Teachers at all levels of education prepare and administer many formal teacher-made achievement tests in the course of teaching and learning processes. Tests are, therefore, indispensable tools in the educational sector. Strict adherence to the principles of test construction, analyses, test administration, and reporting is very essential, especially when norm-referenced tests are developed for instructional purposes. These teachers probably hardly consider the extent of reliability and validity of the tests constructed by them.

Reliability is conceived in relation to the extent of consistency or dependability of a measuring instrument. This implies that if any test is to be applied on student in Mathematics an infinite number of times, it would be expected to generate the same or similar responses or scores. Therefore, for any measuring instrument, the smaller the error, the greater the reliability appears to be while the greater the error, it appears the smaller the reliability becomes. Individual scores on a test can be viewed as the combined result of the true score and measurement error. Validity refers to the extent to which an instrument measures what it is designed to measure.



A test with high validity will better measure the particular qualities it is supposed to measure. However, standardization of test is tied to its reliability and validity. Standardized tests are tests constructed following principles of tests construction and published for use in many different schools and classrooms. They are tests that are given to students in the same manner and condition, meaning that the questions on the test are all the same, the time given to each student is the same, and the way in which the test is scored is equally the same for all students. Americans first began seeing standardized test in the classroom in the early 20th century.

Currently, standardized tests are widely used in virtually all the schools and establishments by examination bodies for purposes of selection, promotion and certification to mention a few. It may be comprised of different types of items, including multiple-choice, true-false, matching, and essay items. Multiple choice questions used to assess students' knowledge comprehensively at the end of a term or semester plays important role in giving feedback to teachers on their educational actions; therefore, the quality of the test is a critical issue. Having administered and scored a test, the teacher needs to know how good the test items are and whether the test items were able to reflect the students' performance in the course in relation to the specific learning objectives taught over the period of time. There are several ways by which teachers could use assessments in order "to understand the student's prowess at the learning outcome, whether it is cognitive, affective, or psychomotor". Adjustments can also be made to instructions given to students based on assessments. Teacher-made multiple choice questions are used widely in schools to assess students.

It was observed that students generally perform low in Senior Secondary School Mathematics achievement tests, probably they were not used to taking standardized test, and hence, the need for the standardization of every teacher-made mathematics achievement tests at all levels in order to yield a reliable and valid test scores. The table below reflects the trend in percentage, Nigeria students that obtained credit and above (A1 – C6) pass and below (D7 – F9) in the May/June WASC in general mathematics between 1991 and 2016. This is an extract from the European Journal of Research and Reflection in Educational Sciences, Zalmon and Wonu (2017).

S/N	Year	% of Students with Credit & Above (A1-C6)	% of Student with (D7 –F9)
1.	1991	11.10	88.90
2.	1992	21.90	78.10
3.	1993	10.90	89.10
4.	1994	16.10	83.90
5.	1995	16.50	83.50
6.	1996	10.00	90.00
7.	1997	7.70	92.30
8.	1998	11.10	88.90
9.	1999	9.0	91.00
10.	2000	32.80	67.20
11.	2001	41.60	58.40
12.	2002	15.00	85.00
13.	2003	45.80	54.20
14.	2004	53.80	46.20
15.	2005	35.55	64.45
16.	2006	39.94	60.06
17.	2007	15.56	84.44
18.	2008	23.00	77.00
19.	2009	31.00	69.00
20.	2010	33.55	66.45
21.	2011	38.93	61.07
22.	2012	49.00	51.00
23.	2013	36.00	64.00
24.	2014	31.30	68.70
25.	2015	34.18	65.82
26.	2016	38.68	61.32
Mean %		27.31	72.69

**Table 1:** *West African Examination Council (WAEC) result between 1991 and 2016*

Charles Spearman, in 1904 was responsible for figuring out how to correct a correlation coefficient for attenuation due to measurement error and how to obtain the index of reliability needed in making the correction. Spearman's finding is thought to be the beginning of Classical Test Theory (CTT). The conceptual foundations, assumptions and extensions of the basic premises of CTT have allowed for the development of some excellent psychometrically sound scales in the assessment practices of educational bodies in Africa. This is owing to the simplicity of interpretation which can usefully be applied to examinees achievement and aptitude test performance (Hambleton, 1989). In the past 30 years or more, the field of educational measurement all over the world has undergone changes to meet increasing demand for valid interpretation of individual score from educational tests or examinations. CTT introduces three basic ideas of scores (1) test score or observed score (X), (2) true score (T), and (3) error score (E). Classical test analysis postulates linking the observed test score (X) to the sum of the true score (latent unobservable score) of an error score: $X = T + E$. The following assumptions underlie CTT: (a) true scores and error scores are uncorrelated, (b) the average error score in the population of examinees is zero, and (c) error scores on parallel tests are uncorrelated. Classical test analysis utilizes traditional item and sample dependent statistics. These include item difficulty and item discrimination estimates, distractor analyses, item-test intercorrelations, and variety related statistics. Most of the psychometric analyses have focused on examinee assessment at the test score level, rather than at the item level. Classical test analysis typically includes a measure for the reliability of scores (i.e., Cronbach Alpha) and difficulty of the test (Applied Measurement Associates, 2010). It is also known as True Score Model (TSM). The basic idea behind the theory is that observed score (x) is made up of two components, the true score and the error score. CTT is concerned with the relationship between these three variables X, T, and E as earlier mentioned. This relationship is used to discuss about the quality of the scores. The true score reflects the exact value of the respondent's ability or attitude.

Classical models have proven very useful in test development, yet, they have several important limitations. The two statistics that form the cornerstones of most classical test theory, item difficulty and item discrimination, are both sample dependent. Higher item difficulty values are obtained from examinee samples of lower-average knowledge while lower item difficulty values occur from examinee samples of above-average knowledge. In terms of discrimination indices, higher values tend to be obtained from heterogeneous examinee samples, and lower values are associated with homogeneous samples. Such sample dependency relationships reduce the overall utility of these statistics. Classical test theory applications are also test dependent or "test-based". Test difficulty directly affects the resultant test scores. Higher knowledge scores are associated with tests composed of relatively easy items, and low knowledge scores can be a function of tests composed of items that are more difficult. The true-score model, upon which much of classical test theory is based, permits no consideration of examinee responses to any specific item. Thus, no basis exists to predict how a given examinee will perform on a particular test item (Applied Measurement Associates LLC, 2010).

Item response theory, according to Osterind (2012), is an approach to modern educational and psychological measurement that posits a particular notion about cognition and sets forth sophisticated statistics to appraise cognitive processes. Its objective is to reliably calibrate individual and test stimuli (i.e., items and exercises) on a common scale that is interpreted to show the individuals' ability or proficiency and specified characteristics of the test stimuli. IRT is applicable to many practical testing problems, such as generalizability of test results, various item analyses, examining test bias and differential item functioning, equating test forms, estimating construct parameters, domain scoring, and adaptive testing. Nering and Ostini (2010) see item response theory as latent trait theory, strong true score theory, or modern mental test theory, a paradigm for the design, analysis, and scoring of tests, questionnaire and similar instruments measuring abilities, attitudes, or other variables. Unlike simpler alternatives for creating scales and evaluating questionnaire responses, it does not assume that each item is equally difficult. explained that it is a model-based version of test theory that uses a mathematical function to describe the relationship between a person's standing on a latent trait and his/her item responses. When an appropriate model is selected, the likelihood that a person will respond to an item in the keyed/direction is a function of the person's standing on the underlying construct and the item's difficulty and discrimination modeled as a function of person's performance level of the trait being measures and the characteristics of the items completed. Item response



theory is also a mathematical model that describes how people interact with test items (Embretson & Reise, 2000). In addition, for an item to have any utility it must be able to differentiate among persons located at different points along a continuum. An item's capacity to differentiate among persons reduces our uncertainty about their locations. This capacity to differentiate among people with different locations may be held constant or allowed to vary across an instrument's items. Therefore, individuals are characterized in terms of their locations on the latent variable and, at a minimum, items are characterized with respect to their locations and capacity to discriminate among persons.

Statement of the Problem

The researcher designed this study using classical test theory (CTT) and item response theory (IRT) to standardize teacher-made mathematics achievement test of Senior Secondary School students in order to ensure objectivity in measurement and to possibly improve the students' performance by reducing the guessing tendency (especially Students in senior secondary school 2 who are preparing for certificate examination) and to find out which of the theories will be more effective in the standardization of teacher-made mathematics achievement test of senior secondary school 2.

Purpose of the Study

The main purpose of this study is to investigate the applicability of classical and item response theories to standardization of teacher-made Mathematics achievement test.

Specifically, the study aims to:

1. Compare CTT and IRT estimated item difficulty values in SS2 multiple choice teacher-made Mathematics achievement test.
2. Compare the CTT and IRT estimated item discrimination indices in SS2 teacher-made achievement test in Mathematics.
3. Determine the guessing tendency in the CTT and IRT Mathematics multiple choice achievement test items.

Research Question

The following research questions will guide this study.

1. Is there any difference in the standardized values of test constructed by Mathematics teachers based on CTT and IRT?

Research Hypothesis

The following null hypothesis will guide the study:

1. There is no significant difference between CTT scores and IRT scores of student in the standardized teacher-made Mathematics achievement test using the indices of P-value, D-value, and guessing tendency.

Research Method

Descriptive research of the survey type was used in the study. This enabled the researcher to cover a large sample size of students from among the population of senior secondary school two students for the purpose of making a reliable generalization.

The population of this study comprised the entire senior secondary school two (SS2) Mathematics students in all the public senior secondary schools in the three (3) senatorial districts of Ondo State. Sample size of 360 senior secondary school two (SS2) Mathematics students were used.

The two instruments used for data collection for this study were Teacher-made equivalent Mathematics Multiple-Choice Achievement Tests (TMAT I & II), constructed by the researcher. The Teacher-made Mathematics Multiple-Choice Achievement Test (TMAT) was based on the following topics: Number and Numeration, Algebraic processes, Geometry, and Statistics. The instruments consist of twenty (20) multiple choice questions. Each question with 5 options (A-E).

The first instrument addressed CTT theory while the second was used to address IRT. The difference between the two instruments is that the first instrument consists of 20 items, set randomly within the four major topics in Mathematics as stated earlier in which five (5) items are from each topic, while the second instrument was with the same content with the first instrument but the items were grouped under same topics mentioned above and the options re-arranged to reduce guessing tendency. Content validation of the instrument was carried out by preparing the table of specification based on the six levels of cognitive domain of Bloom's taxonomy of education



The TMAT were trial tested on twenty (20) senior secondary school two (SS2) mathematics students in two (2) public secondary schools in Akoko South West Local Government Area of Ondo State. The schools were not participating in the study, but have some degree of similarities with the real sample to be used. The data obtained were subjected to Split-Half method of estimating reliability coefficient, using Pearson Product Moment Correlation. The indices coefficient 'rs' obtained from CTT (TMAT 1) and IRT (TMAT II) were 0.659 and 0.658 respectively. The reliability coefficients of instruments radiating around 0.5 are reliable for classroom tests (Alonge, 2004).

The data for this study were collected through the use of Teacher-Made Mathematics Multiple-Choice Achievement Test (TMAT). Copies of the instrument were personally administered on the students by the researcher and through the assistance of the Mathematics teacher in the respective schools that was used as sample. The instruments which consists two sets of tests of the same contents but different structure were administered at different days at interval of two weeks on the students under a good atmosphere and for forty (40) minutes each. The responses to the instruments were retrieved immediately for scoring, recording and analysis. One mark was given for each correct responses and zero for incorrect responses. The Scoring guide contained all answers to the items.

The data collected was analyzed through descriptive and Inferential Statistics. Specifically; research question was analyzed through the use of Mean and Standard Deviation while the Hypothesis used Multivariate Analysis of Variance and was subjected to Pearson Product Moment Correlation (PPMC). The hypothesis was tested at 0.05 level of significance.

Results

The average item difficulty level and discrimination indices for the CTT and IRT based teacher-made mathematics achievement tests were computed.

Table 2: Descriptive Statistics on Standardized Values of test constructed by Mathematics teachers of CTT and IRT based tests.

Variable	N	Mean	Std. Deviation
CTT Difficulty levels	20	0.378	0.123
CTT Discriminating Index	20	0.543	0.283
IRT Difficulty levels	20	0.383	0.177
IRT Discriminating Index	20	0.556	0.285
Valid N (listwise)	20		

In Table 2, the minimum and maximum item difficulty levels for CTT based teacher-made mathematics test are 0.16 and 0.57 respectively, while the average Item difficulty level for CTT based teacher-made mathematics test is 0.378 with standard deviation of 0.123, but the minimum and maximum item difficulty levels for IRT based teacher-made mathematics test are 0.03 and 0.62 respectively, and the average Item difficulty level for IRT based teacher-made mathematics test is 0.383 with standard deviation of 0.177. This implies that there is difference between the item difficulty levels of CTT and IRT. Also, the minimum and maximum item discrimination indices for CTT based teacher-made mathematics test are -0.05 and 0.88 respectively, while the average Item discrimination level for CTT based teacher-made mathematics test is 0.543 with standard deviation of 0.283, while the minimum and maximum item discrimination indices for IRT based teacher-made mathematics test are 0.00 and 0.94 respectively, and the average Item discrimination index for IRT based teacher-made mathematics test is 0.556 with standard deviation of 0.285. This also implies that there is difference between the item discrimination indices of CTT and IRT. In conclusion, there are differences between standardized values of test constructed by mathematics teachers based on CTT and IRT.

There is no significant difference between the CTT scores and IRT score of the standardized teacher-made Mathematics Achievement test using the indices of p-value, D-value and guessing tendency.

Table 3: Summary of Multivariate Analysis of Variance showing difference between the CTT and IRT Scores in teacher-made Mathematics achievement tests using P-value, D-value and Guessing Tendency.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	CTT Difficulty levels	0.155 ^a	13	0.012	0.550	0.828
	CTT Discriminating Index	0.870 ^b	13	0.067	0.619	0.780
	IRT Difficulty levels	0.381 ^c	13	0.029	0.823	0.641
	IRT Discriminating Index	0.839 ^d	13	0.065	0.549	0.828
	Guessing Value	0.080 ^e	13	0.006	2.348 E+30	0.000
Intercept	CTT Difficulty levels	1.760	1	1.760	81.029	0.000
	CTT Discriminating Index	3.391	1	3.391	31.393	0.001
	IRT Difficulty levels	1.774	1	1.774	49.810	0.000
	IRT Discriminating Index	3.514	1	3.514	29.884	0.002
	Guessing Value	0.037	1	.037	1.428 E+31	0.000
CTTPERF	CTT Difficulty levels	0.025	4	0.006	0.287	0.876
	CTT Discriminating Index	0.083	4	0.021	0.193	0.933
	IRT Difficulty levels	0.065	4	0.016	0.454	0.767
	IRT Discriminating Index	0.253	4	0.063	0.537	0.715
	Guessing Value	0.040	4	0.010	3.86 E+30	0.000
IRTPERF	CTT Difficulty levels	0.037	4	0.009	0.431	0.783
	CTT Discriminating Index	0.034	4	0.008	0.078	0.986
	IRT Difficulty levels	0.147	4	0.037	1.031	0.462
	IRT Discriminating Index	0.261	4	0.065	0.555	0.704
	Guessing Value	0.016	4	0.004	1.489 E+30	0.000
CTTPERF * IRTPERF	CTT Difficulty levels	0.037	3	0.012	0.567	0.657
	CTT Discriminating Index	0.302	3	0.101	0.931	0.482
	IRT Difficulty levels	0.138	3	0.046	1.295	0.359
	IRT Discriminating Index	0.321	3	0.107	0.911	0.490
	Guessing Value	0.011	3	0.004	1.454 E+30	0.000
Error	CTT Difficulty levels	0.130	6	0.022		
	CTT Discriminating Index	0.648	6	0.108		
	IRT Difficulty levels	0.214	6	0.036		
	IRT Discriminating Index	0.706	6	0.118		
	Guessing Value	1.000E-13	6	1.000E-13		
Total	CTT Difficulty levels	3.136	20			
	CTT Discriminating Index	7.404	20			
	IRT Difficulty levels	3.528	20			
	IRT Discriminating Index	7.728	20			
	Guessing Value	0.120	20			
Corrected Total	CTT Difficulty levels	0.286	19			
	CTT Discriminating Index	1.518	19			
	IRT Difficulty levels	0.595	19			
	IRT Discriminating Index	1.545	19			
	Guessing Value	0.080	19			



The result in Table 3 shows that there is no significant differences between CTT scores and IRT scores of the standardized teacher-made Mathematics achievement tests using item difficulty levels (P-values) and discrimination indices because the effect of interaction of CTT scores and IRT scores on CTT and IRT P-values, and CTT and IRT D-values giving $F = 0.567, 0.931, 1.295$ and 0.911 respectively > 0.05 . But there is significant between CTT scores and IRT scores of the standardized teacher-made Mathematics achievement tests using item guessing tendency, because the effect of interaction of CTT scores and IRT scores on guessing values give $F = 1.454$ with $P < 0.05$. Therefore, the differences between CTT scores and IRT score using P-values and D-values are not significant while the difference between CTT scores and IRT score using guessing tendency is highly significant.

Discussion

Findings from the research question revealed that there are differences between standardized values of teacher made mathematics achievement test constructed by mathematics teachers based on Classical Test Theory (CTT) and Item Response theory (IRT). Each item is assessed in terms of its difficulty, discrimination index and guessing tendency level to judge the quality or worth of the test as opined by Denga (2003). The indices obtained from both approaches gave valuable information with comparable and almost interchangeable results in some cases.

Furthermore, the interaction effect of CTT and IRT scores of standardized teacher-made Mathematics achievement test using difficulty levels (P-values) and discrimination indices (D-values) are not significant, while the effect of interaction between CTT and IRT scores using item guessing tendency is highly significant. These results could probably be as a result of high level of guessing in the multiple-choice mathematics achievement tests, especially when the students are not informed to guard against guessing as observed by Ossai and Peter (2015). This is in line with the findings of Awopetu and Afolabi (2016) which indicated that correlations between CTT and IRT were comparable.

Conclusion

Based on the results of the findings, conclusion could be drawn that, the difference between CTT and IRT scores using P-values and D-values are not significant while the difference between CTT and IRT scores using guessing tendency is highly significant. Therefore, the study revealed that CTT and IRT were comparable in estimating item characteristic of tests and thus could be used as complementary procedures in the development and standardization of teacher-made mathematics multiple choice achievement tests.

Recommendations

It is imperative to determine the parameters of difficulty level, discrimination indices and guessing tendency, in CTT and IRT before administering test to students. Tests and Measurement experts should periodically organize workshops to educate teachers on the implications of quality and standardized tests. They should as well train teachers to know about the modern measurement frame work called IRT as well as the necessary interpretation involved.

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