

# KIU Journal of Humanities

**College of Humanities and Social Sciences**



**Kampala International University, Uganda.**

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## Editorial

This issue of *KIU Journal of Humanities* touches on Development Administration, Educational Psychology, Reading Skills and Creative Writing.

The first part of the Journal focuses attention on Development Administration. It is universally accepted that Development Administration is the administration of development programs, to the methods used by large-scale organisations, notably governments, to implement policies and plans designed to meet their developmental objectives. It is administering, organizing public agencies such as to stimulate, facilitate defined programs of social, economic progress with a purpose to make change attractive and possible. Papers in this section deal with issues in development administration such as Adult Literacy Programme, Rural development, Foreign Aid, Development Communication and so on. It was argued in one of the papers that prison inmate in the experimental group performed better in cake baking and event decoration than inmate in the control group. The researcher therefore, recommends that teachers should use more of Adult literacy program in the prison on cake making and event decoration should be encouraged which will help equip the inmates face the economic challenges of the society and be self-employed

Articles in the second part of this edition center on Educational Psychology. Educational Psychology studies various factors which have impacts upon students, which may include home environment, social groupings, peer groups, his / her emotional sentiments, and mental hygiene etc. Various methods are used in order to get the desired data about the learner in order to know about him or her mentality and behavior and its manifestations. Against this backdrop, section two looks at how some psychological factors such as resilience, distress, leadership behavior, home violence, and so on, affect students' performance in education.

Section Three x-rays the importance of reading skills. It is widely believed that reading skills are important to students' success in schools as they will allow them to access the breadth of the curriculum and improve their communication and language skills. In addition, reading can be a fun and imaginative time for students, which opens doors to all kinds of new worlds for them. Based on the its findings, one the papers in this section suggests among others that Knowledge of the reading skills that pupils have mastered is important so that teachers in early childhood classrooms can target instruction for those particular skills that are still weak.

Papers in the last section of this edition center on Creative writing. This borne out of the fact that Creative Writing is not only a means to help students unleash their creative side and feel more comfortable when writing in and about everyday life, but has also been proven to improve language learning. While the first paper in this section argues that Pre-theoretic intuition quiz and Puzzle-based learning strategies improved students' practices towards sustainable

environmental development, the second posits that the inculcation of moral character and creative thinking in the younger one, most especially at the primary and secondary levels is the only way the Pupils/students of both the Primary and Secondary may be useful for themselves and the society in which they meet themselves for national development

Above all, this edition of *KIU Journal of Humanities* features many thought provoking articles.

We hope that these educative and informative articles will contribute immensely to the existing knowledge on each topic.

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# **Part One**

## **Development Administration**



## Gender Equality as a Sociological Strategy for Effective National Development in Nigeria: An Evaluation of a Christian Sociologist

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**Abstract.** In any male dominated society, women face the challenge of relevance among many others. In spite of the fact that women constitute more than half of the world's population and contribute to two thirds of the world's food production, there is an unimaginable discrimination against women not only in Nigeria, but all over the world. The development of any nation requires the contributions of its members irrespective of gender status. Thus, the paper examines the role of male and female gender in the national development. It also specifies constraints which hinders female contributions to national development. In order to fast track national development and to make Nigeria's transformation programme a reality and a huge success, there is the need to integrate gender without discrimination in all aspects of the governance. This is the order to exploit the hiding potentials especially in the women folk in contributions to the development of their society in particular and that of the nation in general. Pragmatic and phenomenological methodology guided the examination of concepts and closely related research works. It is recommended that policies and programmes such as women for change and development initiative, women in development, women agricultural credit facilities and affirmative action; these policies should be fully implemented right from the national to local level. There should be an intensive awareness of all citizens to the fact that equal education opportunity is the right of all citizens, irrespective of gender, age, locality, creed or social status and should therefore be made available to all. The study concludes by

proffering some suggestions to be implemented for effective national development.

**Keywords:** Gender equality, Sociological strategy, Effective, National development, Religious evaluation.

### 1. Introduction

The status of women in the society is very diverse worldwide. It is obvious that little recognition has been accorded women in spite of their majority in Nigeria. Among many important traits associated with the differentiation of gender inequality is religion, which itself must be regarded as a fluid concept with interpretations and practices embedded and thus varying with respect to cultural and historical relations. Admitting the complexity of the issues, some religious norms and traditions can contribute to the formation of gender inequalities and to subordinates the role of women in society. Using an exploratory quantitative analysis, the influence of religiosity on gender inequality in social, economic and political spheres is examined. Globally, there is no place where men and women are treated equal (Stump, 2008). Women are often oppressed and marginalized in almost all aspect of human endeavours. They are regarded as subordinates to men in all spheres of live.

According to Egwemi (2009), female constitute over 50 percent of the world population, in spite of this advantage in terms of population, women are disadvantaged and enjoy very few privilege and rights relative to their male counterparts.

These poor global records of women's status are worst in the Africa continent. In Nigeria the situation is not different as a highly patriarchal society where men dominate all spheres of women's lives (Olurode, 1990). Women are in a subordinate position particularly at the community and household levels, and male children are preferred over the female (Yusuf, 2010). Consequently, a high percentage of women employment are restricted to low income generating activities, concentrated within the lower levels of the unregulated, formal sector, which are not adequately represented in the National Accounting System (King, 1995). By comparison, men employed within the informal sector are located in the upper levels and are predominantly engaged in higher income-generally with respect to politics and public life in order to liberate Nigeria's human capital resource for active participation in the vision for free market economy. Whereas, women are economically backward, politically sidelined and disfranchised (Adeyanju, 2012).

It is against this back drop that promoting gender equality is now globally advocated as a development strategy for reducing poverty levels, improving health and living standards, as well as enhancing efficiency of public investments among men and women. The attainment of gender equality is not only seen as an end in itself and human rights issue but as a pre-requisite for the achievement of sustainable development in contemporary Nigeria.

## 2. Clarification of Concepts

For a better appreciation of the objectives of this paper, it is perhaps good for us to attempt clarification of some key concepts or terms. These terms includes gender, equality, gender equality, strategy, development, national development and evaluation.

**Gender:** Gender is social differentiation based on sex. It is defined as a personal conception of oneself as male or female. Iwuoha and Anusiem (2013) also affirmed that the term gender further refers to a social and cultural understanding of masculinity and femininity. The term gender has been defined by various authors. It can also be

described as the symbolic construction of being male or female. The term gender in the study refers to culturally based expectations of the roles and behaviour of men and women. The term distinguishes the socially constructed from the biologically determined aspect of being male and female. Thus, it refers not to men and women but the relationship between them and the way this is socially constructed (Moser, 1993). Gender should be seen therefore as being synonymous with participation of men and women in the activities of the community and the empowerment of women and men, thus enabling both to accept responsibility and equally share in the benefits.

**Equality:** The fact of being equal, or having the same value or equal treatment of people irrespective of social or cultural differences. Equality here means fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is not different but which is considered equivalent in terms of rights, benefits, obligations and opportunity.

**Gender Equality:** Refers to equal enjoyment by women and men of socially valued goods, opportunities, resources and rewards. Gender equality does not mean that men and women become the same, but that their opportunities and life chances are equal.

**Strategy:** Here, it refers to action that becomes necessary for the direct achievement for the main goal with available limited resources. The task of strategy is an efficient use of the available human and capital resources for the achievement of the main goal. According to Max (2011), strategy is about shaping the future and is the human attempt to get to desirable ends with available means.

**Development:** Todaro (1981) sees development as many sided process involving changes in structures, institution and attitudes, as well as the acceleration of economic growth, the reduction of inequality and eradication of poverty in a given society. Pearson (1970) uses the concept of development to mean the participation of people in the determination of their

development. For this study, development may be defined as mass participation of both female and male gender in transformation of society in every ramification from lower productive capacity to a higher one.

**National Development:** Here refers to the collective efforts of the people irrespective of their gender based within a defined geo-political entity in the application of their skills and knowledge to the exploitation and harassment and human of the nation's natural potentials, for improving their social, moral, economic, cultural, political and spiritual well-being within the context of the national interests.

**Evaluation:** An assessment used as the basis to judge or determine the value of a variable or expression. It means to form an opinion of the value or quality of something after thinking about it carefully. It is also a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards.

### 3. Christian Observation of Gender Equality in Contemporary Nigeria

The argument has been for ages about the unique roles of women and how much they can contribute to the overall benefit of the society. In most societies, women are considered weak and fragile, while the men are strong and energetic. That is to say, we find out that as regards to status of gender, men benefit more than the female counterpart. This also applies to security issues, where men are considered to be stronger than women and as such are not so much involved in wars (Attah, 2003). The significance of gender equality and women's empowerment for Security Sector Reform (SSR) should be considered. It is noted that there is need to establish strategic targets and specific initiatives to increase the recruitment, retention and advancement of women and other underrepresented groups in security system institutions and oversight bodies. Worldwide, women, men, girls and boys have different experiences in areas such as trafficking in human beings, robbery, sexual violence, abduction etc. Women are more fearful and feel

more insecure with regard to kidnapping, robbery, etc. than men (Ojo, 2007).

It is observed that women are more religious than men. They see religion as more important in their lives and go to church more often. Probably because religious rituals are a form of precaution analogous to wearing a seat belt, therefore religion functions to reduce anxiety for women and helps them feel protected against threatening events (Jaja, 2007). Furthermore, in matters of insecurities like kidnapping, armed robbery, rape, and wars, women are more hit than men, because physically they are handicapped and defenseless. Men are not as insecure as women and children and even though they face the same issue of insecurity, they are not easily gullible and they are more critical in nature than women. Hence, Bada (2012) continued and said that women see religion as a source of emotional security like a child's security blanket. Being generally more anxious than men, women have more need for religion to allay their fears. When all hope is lost for a woman she has no other solace than to turn to God in prayer. Women have no option in times of helplessness than to fall back to their Maker, humbling themselves and praying to God to assist them in their state of insecurity. In difficult moments, prayer becomes for women the only way forward. This is because, prayer is the master key to unlock every stronghold and transform the lives of evil men and women who are blood thirsty (Ebeze, 2003).

Besides, Religious studies tends to be a rather androcentric discipline and in both geography and the sociology of religion, women as researchers and subjects of research had long been in the minority until the last couple of decades. No wonder, Hopkins (2009) tries to open up the discussion about feminist geographies of religion. Yet, it represents a creative and stimulating research approach in the social sciences, and its neglect is tied with the status of women in religious norms and traditions as much as in society in general. The relation between religion and gender equality can be explained by the assertion that societies with higher religiosity accept the authority of religious teachers, who advocate patriarchal

organization of society (Bukoye, 2007). We assume that those women who adhere to the dominant religions, might also not be inclined to take part in their society's public life, due to their upbringing and the social traditions surrounding them. Nevertheless, many religious institutions are always helpful to women in economic and social distress (Nnoruga, 2009).

Biblically, there are two creation stories in the Bible. The first is regarded as the priestly account (Gen.1 – 2:4a) where there was orderly presentation in which the creative acts were performed in six days. The second account unlike the first was a technical process in which God entered practically into the act of making man. God was seen as a man creating out of pre-existing materials. Unlike the priestly account where man was created last, J account presents man the first to be created (i.e. Apex of creation). The woman was created out of ribs of man and this shows the inferiority complex of a woman to man. Man was given authority to give names to all living creatures. Man was not here co-exist. This may account for the Old Testament basis for insignificant emphasis placed on women. However, critical examination of the first creation stories clearly shows that man and woman were created co-equal, co-important and co-exist. No wonder, why the New Testament put more relevance and importance on women than before. In other words, from this context, gender inequality seems to be a social construct. That is to say, it is neither a biological construct nor religious instruction, but creation or invention of the society. Since we now live in a more competitive world, what men can do, women can do same, or even better. Women should be given equal chances, considerations and recognitions in education, politics, religion, culture, economy, family and so forth. The only exception is when there is clash of opinion or class and class struggles, then consideration may be given first to male if their performances are evidently equal (Odudele, 2006). Thus, gender equality is of paramount importance towards having an effective nation development in contemporary Nigeria.

Moreover, on the opposite side of the spectrum, women outnumber men in secular and Western Christian states, because no gender is preferred by social norms or state policy. For this reason, we consider a higher share of women in society to be a sign of greater gender equality (Adeyanju, 2012). Difference in male and female literacy is of paramount importance at this point in time. The ability to read and write improves women's lives and allows them to more actively participate in the economic sphere. Better-educated women are also more likely to take part in public life and the economic development of their state. Women has a better status in societies which grant them equal access to education with men. Literacy make women overall less dependent on men and gives them enhanced freedom (Agara, 2011). Thus, the issue of gender is a critical phenomenon that has gone beyond social and religious construct only, but has spread to cultural terrain among living and non-living things. For instance, among the Yoruba, we now have "Ako Okuta" (Male Stone), "Ako Aja" (Male Dog), "Ako Ibepe" (Male Pawpaw), etc. This signifies that the issue of gender is versatile that has permeated every aspects of human endeavours. In contemporary Nigeria, gender problem is better solved by avoidance and silence about it without much emphasis. In other words, emphasis on gender is also gender consciousness which later creates gender inequality and problem. This in a long run, results to class and class struggle, competition and unhealthy rivalry. It has given birth to feminist school of thought which is an advanced stage of gender consciousness that a times may be against family and religious teachings. Obviously speaking, before we can have effective national development in contemporary Nigeria, gender equality as a sociological impetus have to be emphasized.

#### **4. Gender Equality as a Sociological Strategy for National Development**

In Africa generally and in Nigeria Gender equality is a critical issue in the process of development of any nation since the role of women and men are required irrespective of their gender based. For instance,

Socialist/Marxist argued that mass participation of women in production work was responsible for the huge success in Russia, Sweden, Holland, Germany and China, to the extent that it was recorded that ninety (90) percent of Chinese women worked outside their homes had shoot them from 3rd world economy to the position of 1<sup>st</sup> world international economy. This contributed immensely to the national development of China (Deckard, 1975). He further stated that it was evident that women's efforts were needed to facilitate industrialization in the Chinese economy for rapid expansion of the economy. According to state of the world's reports (1995), women all over the world are making vast and unacknowledged contributions to the wealth and welfare of their communities in unpaid domestic work and in small scale businesses and trading activities. Some of these women are household heads with sole responsibility for their families.

In Africa, it had been on record that women are responsible for three quarter of all subsistence agriculture in addition to their domestics' responsibilities. Most women in Africa are engaged in the informal sector and in Nigeria, for instance the informal sector employs about 46 percent of the female labour force (World Bank, 1990). Despite women's contributions in our nation, there are discriminations against them. For instance, Obasanjo (1991) observed that women are subjected to one form of discrimination or the other, especially as they are not employed evenly throughout the occupational structure. Even when employed, they are concentrated in low paid, low status jobs and sometimes may have to work twice as hard as their male counterparts before get promoted (Olajubu, 2007). Akinwumi (2012) also concurred with women discrimination and observed that in Nigeria women are marginalized while men are given greater opportunities to advance.

Historically, women marginalization traced back to colonial period in Nigeria where it was reported that women were deliberately excluded by the colonial state in activities such as road constructions, mines and processing industries which led to their gradual displacement from engaging in productive activity. With these

women's creative potentialities in area of education, employment and political participations were somehow blocked; rather, they were forced to go into professions that would remind them of their subservient role in society (Umar and Abukakar, 1997). This women discrimination was also observed in membership of parliament, as it was captured in the World Economic Forums (2011). In Global Gender Gap report as cited in Ada (2015), out of 129 countries in the world, Nigeria was ranked 121<sup>st</sup> position for women in parliament. This assertion was clearly displaced during 2011 General Election, despite all the work put in by women advocates and multilateral agencies before and during the election, Nigeria did not come any closer to meeting the minimum 35% representation set as a benchmark by national gender policy in 2006. The report further stated that instead, we regressed-dropping from 9% representation in federal legislature to 7% away below average rate of 20% female parliaments in sub-Saharan Africa and 19% globally (Ada, 2015).

Similarly, Nnoruga (2009) observed that in Africa society in general and Nigerian society in particular had placed most of the leadership roles on the men folk, thereby championing the course of gender inequality. He further stated that the traditional society did not recognize the contributions of women in any decision making process. Women are fragrantly ignored in any important meetings of the family, community and even in most government establishments. In the formal sector, according to Katepa (1996) as cited in Agara (2011) outside the Agricultural sector, women tend to concentrate on occupations which are not too technical in nature.

He further stated that woman employment in formal sector is limited, being less than 5% for the majority of countries in Africa or in the world. Although in Nigeria today, women are virtually integrated in every profession as workers, entrepreneurs as well as professionals and no more just home keepers. They are now in every profession. We have women Judges, Lawyers, Engineers, Accountants, Bankers, Doctors, and Pharmacists, just to mention a few

of them. Politically, we have slight improvement in women's participation as we have few numbers of them in National Assembly and State Houses of Assembly. Even in area of appointment, we have few of them appointed as ministers or commissioners. However, the level of women participation in all spheres of lives is still not encouraging and this calls for more involvement towards effective national development in Nigeria.

### 5. Evaluation and Recommendations

The clarion call here is for a return to the positive aspects of African culture to enhance the dignity and self-worth of women instead of using negative aspects of this culture to enslave and dehumanize them. In physical strength and agility, women are not the same as men, but in spiritual strength and uprightness, it may not be out of place to say that men are no match to women (Akintunde, 2006). The different roles played by women from the Old Testament times to the time of Jesus Christ and the early church, portray women as great leaders and examples of faith (Abogunrin, 2003). We must realize that the world is dynamic and the rate of change is rapid. There is an urgent need to re-assess the roles and position of women in religion and politics if we are sincere with effective national development in contemporary Nigeria.

In order to fast track national development and make Nigeria's transformation programme a reality, there is an urgent need to foster various sociological strategies of gender equality in governance for sustainable development of our country. It further considered that policies and programmes such as Women for Change and Development Initiative, Women in Development, Women Agricultural Credit Facilities and Affirmative Action etc. These policies should be implemented right from the national to local level. There should be intensive awareness of all citizens to the fact that educational opportunity is the right of all citizens, irrespective of gender, age, locality, creed or social status and should therefore be available to all (Oyewole, 2012). The study concludes by proffering suggestions to be

implemented for effective national development. The following are therefore recommended:

There should be more gender participation in decision-making in contemporary society. In spite of the fact that conflict has a high level of impact on the lives of women, it is disheartening to note that they are not fully involved in the peace building processes. The United Nations Security Council recognized women's exclusion from decision-making processes, which contravenes their rights and so advocates for the inclusion of women and gender in decision-making, as that would strengthen prospect for sustainable peace and national development.

It should be upheld that without the participation of women, there can be no sustainable peace, and without peace, there can be no reasonable national development. The contribution of women in peace building and reconciliation efforts can become most effective by increasing their participation in decision-making organs and in the implementation of policies at the institutional and community levels.

Moreover, women should be given crucial roles to perform in the Church. Jesus had many women disciples like Mary and Martha (John 11:1-4) and many women followers. They were active in ministry and occupied leadership position in building the foundation of God's redemptive plan for mankind as seen in the life, teaching and ministry of Jesus Christ. Nantondo (2009) was of the opinion that in heaven, there will be no sex. Thus, if we are walking in the spirit now, we will not be conscious of sex, but only of the spirit of God. This is supported by Matthew 22:30 which says: For in the resurrection they neither marry nor are given in marriage, but are as the angels of God in heaven. He further gave an account of women who led the first century church. According to him, women filled positions of leadership in the first century church.

Thus, platforms should be provided that would enable Nigerian women to gain visibility to contribute to national debate and influence policy development and democratic processes. Women should be mobilized to exchange ideas

and opinions on national issues and overall development of their country. As a result, empowerment through education is also crucial so as to enable women to acquire pertinent skills that would facilitate their competition for decision making posts. It must be noted that, for men to be elevated over women does not indicate that they are more perfect than women, because women can also perform better in several other capacities towards effective national development in contemporary Nigeria.

## 6. Conclusion

The paper is of the view that women should wake up from their slumber and seek to occupy leadership positions both in the churches and political arena. For as Namani (2005) has rightly observed, in the beginning there was gender equality but inequality was introduced along the line due to the patriarchal quest for power and privileges which was sustained by serious interpretation and ideologies. The study concludes that the contribution of both male and female gender to the national development is strategic in any development process. Gender discrimination against women in the public sector or service is obvious and has negative impact on national development. This discrimination should be discouraged and abolished in order to give different opportunity to all categories of gender to contribute their own quota to the national development. This research work confirmed the relationship between religiosity and gender inequality factors, while the strong influence of economic development on gender inequality was controlled sociologically. Therefore, it is of paramount importance to allow more women participation in politics, religion, economic activities, decision making, marriage and public lives while this gender consciousness do not have negative influence on religious and family settings in a long run. The relevance of this paper is to change the historical trend of gender inequalities towards effective national development since the only thing that is permanent in nature is change.

## References

- Abogunrin, S.O. (2003). *Biblical Studies and the gender problem in Biblical Studies and Women Issues in Africa*, Phillarem Corporate Printer, Ibadan: NABIS.
- Ada, B.I. (2015). *Gender Equality as a Strategy for Effective National Development*. *International Journal of Social Science and Sustainable Development*, Vol.5, No 1, Centre for Advanced Training and Research, Accra, Ghana, Pp. 183 – 186.
- Adebayo, Y. (2001). *The Role of Women in National Stability*. In *Arts and Social Science Forum Journal NAPSASS*, Vol. 1, No.5, Pp. 12 – 19.
- Adeyanju, J.O. (2012). *Jesus' Attitude to Women in the Gospels: A Recipe for Women's Involvement in the Socio-Religious Transformation of Nigeria*. In O.A. Adewale (ed.), *Biblical Studies and Feminism in the African Context*. A Publication of the Nigerian Association for Biblical Studies (NABIS), Western Zone, Ibadan: Samprints and Graphics Co., 179 – 201.
- Agara, J.J. (2011). *Self-Reliance as an Instrument in Women Development*. *LAJAST Lafia Journal of Arts, Science & Technology (Z)* 6-8.
- Akintunde, D. O. (2006). "The Ministry of Women in Lucan Narratives." In *Journal of African Association for the Study of Religion*, Phillarem Corporate Printer.
- Akinwumi, O.S. (2012). *Evolving a Viable Feminist Biblical Hermeneutic Theory Towards the Improvement of Women's Status in Africa*. In O.A. Adewale (ed.), *Biblical Studies and Feminism in the African Context*. A Publication of the Nigerian Association for Biblical Studies (NABIS), Western Zone, Ibadan: Samprints and Graphics Co., 248 – 262.
- Attah, F. (2003). *Responding to Religious Conversation*. Plenary Speech to the Non-governmental Forum. Fourth Conference on Women, Benjin 1995.
- Bada, F.O. (2012). *Gender Differences and Anti-Social Behaviour of Secondary School Students in Ekiti State*:

- Implication for Functional Education. In *Journal of Current Discourse and Research*, Ekiti State University, Ado-Ekiti, 4, 47 – 56.
- Bukoye, O. (2007). Influence of Cultural and Religious Variables on Gender Discrimination among Nigerian Women. In Folorunso, M.A., Oyeneye, I.O. and Adebayo, R.I. (eds.), *Religion and Modernity*, Ijebu-Ode: Alemex Press Ltd.
- Development Assistance Committee (DAC) (1998). Retrieve from <http://www.oecd.org>
- Deckard, B.S. (1975). *The Women's Movement: Political, Socio-economic and Psychological Issues*, U.S.A: Harper & Row.
- David, M. (2013). *Women in Parliament. Leadership P5*.
- Ebeze, U. (2003). Strategic Promotion of Gender: Equality for National Development in Nigeria. *The International Journal of Social Inquiry*, 1(2).
- Egwemi, V. (2009). Beyond Prescriptions: The imperative of Women Education for Self-reliance. A Paper Presented at the First National Conference of the Association of Nigerian Academic (ANA) Ambrose Alli University Ekpoma.
- Haralambos, M. and Holnborn, R. (2004). *Themes and Perspectives*, London: Haper Collins Publisher (Ltd).
- Hopkins, P. (2009). Men, Women, Positionalities and Emotion: Doing Feminist Geographies of Religion. *ACME: International Journal for Critical Geographers*, 8(1): 1 – 17.
- Iwuoha, C.M.A. and Anusiem, C. (2013). Gender, Religion and Security Issues in Nigeria. In J.K. Ayantayo and S.A. Fatokun (eds.), *Religion and Security Issues, Proceedings of 2013 Biennial International Religious Studies Conference*, University of Ibadan, Vol. 5, Pp. 144 – 160.
- Jaja, M.A. (2007). The Effect of Feminism on Conversation of Women in the Church. In Folorunso, M.A., Oyeneye, I.O. and Adebayo, R.I. (eds.), *Religion and Modernity*, Ijebu-Ode: Alemex Press Ltd.
- King, U. (1995). Gender and the Study of Religion. In U. King (ed.), *Religion and Gender*, Oxford: Blackwell, Pp. 1 – 40.
- Max, M. (2011). Strategy. Retrieved from [www.google/search.com](http://www.google/search.com) August 15.
- Moser, A. (2011). Gender. Retrieved from [www.Itad.Org/gender/glossary.Htm](http://www.Itad.Org/gender/glossary.Htm)
- Namani, A.G. (2005). Gender Equality in the Church and Society: Our Obligations towards Change. In Uchem, R. (ed.), *Gender Equality from a Christian Perspective*, Enugu: SNAAP Press.
- Nantondo, H. (2009). Gender, Gender Equality and the Church in Ecumenical Women at the United Nations. *Institutes for Contextual Theology*, Durban, South Africa. Accessed May 7, from <http://ecumenicalwomen.org> academic article.
- Nnoruga, T.N. (2009). Overcoming Gender Inequality and Poverty among Women through Active Participation in Religious and Political Leadership in Nigeria. *International Journal of Sociology, Psychology and Anthropology*, International Centre for Integrated Development Research, Ikot-Ekpene, 1 (3).
- Obasanjo, O. and Akin, M. (1991). *Elements of Development*, Abeokuta: African Leadership Forum Publications: Bullion 16.4 Oct/Dec Lagos: Central Bank of Nigeria.
- Odudele, R. (2006). *Religion and Moral Instructions in Schools*, Akure: Al-hafiz Publisher, P. 70.
- Ojo, J.O. (2007). Women Leadership and Religion: An Overview from Christian Perspective. In Folorunso, M.A., Oyeneye, I.O. and Adebayo, R.I. (eds.), *Religion and Modernity*, Ijebu-Ode: Alemex Press Ltd.
- Olajubu, O. (2007). Women and the Politics of Church Leadership. In M.A. Oduyoye (ed.), *Women in Religion and Culture*, Ibadan: Sefer Books Ltd.

- Olurode, L. (1990). *Women and Social Challenge in Nigeria*. Lagos: Lagos Publishing and Research Company Ltd.
- Oyewole, J.O. (2012). Gal.3:28–‘Equality of Mankind regardless of Gender, Nationality and Status: Pauline Judgement against Patriarchal Hegemony. In O.A. Adewale (ed.), *Biblical Studies and Feminism in the African Context*. A Publication of the Nigerian Association for Biblical Studies (NABIS), Western Zone, Ibadan: Samprints and Graphics Co., 202 – 211.
- Pearson, I.B. (1970). *The Crisis of Development*. London: Pall Mall Press.
- Stump, R. (2008). *The Geography of Religion: Faith, Place and Space*. Maryland: Rowman and Littlefield Publishers.
- Sturm, T. (2013). *The Future of Religious Politics: Towards a Research and Theory Agenda*, *Area* 45(2): 134 – 140.
- Sutchiffe, R.B. (1971). *Industry and Underdevelopment*. London: Addison Wesley.
- Todaro, M.P. (1981). *Economic Development in the Third World*, London: Longman’s Books Press.
- Umar, S. and Abubakar, B.I. (1997). *Gender politics: The Role of Women in Development*. *Images of the Nigeria Women* 2, (3).
- World Bank (1990). *World Development Report*, New York.
- World Bank (1995). *World development Report*, New York.
- World Economic Forum (2011). *Global Gender Gap Report*.
- Yusuf, M.G. (2010). *Gender Politics: Islamic Perspectives*. In C.O. Ayodele and S.I. Fabarebo (eds.), *National Dialogue: The Future of Nigeria*, Akure: DBT Centre, Pp. 101 – 108.





## **Effects of Adult Literacy Programme on Acquisition of Event Decoration Vocational Skills among Prison Inmates in Plateau State, Nigeria**

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**Abstract.** This study investigated the Effects of Adult Literacy Programme on Acquisition of Cake Baking Vocational Skills among Prison Inmates in Plateau State, Nigeria. Based on the aim and objectives of the study, two research questions and two hypotheses were postulated to guide the study. The study adopted the non-equivalent pre-test, post-test experimental group research design, whereby participants were assigned to experimental and control groups. The population of the study was made up of 1474 inmates from two selected prisons in Plateau State, comprising Jos and Lamingo. A sample of 40 convicted prison inmates were randomly selected for the study. They represent 20 experimental and 20 control groups. The

instrument for data collection was Prison Inmate Skill Acquisition Preference Indicator (PISAPI) with content validity index of 0.80 and a reliability index of 0.78. Descriptive statistic of mean and standard deviation was used to answer the research questions and inferential statistics of t-test was used to test the hypotheses at 0.05 level of significance. Results revealed that prison inmate in the experimental group performed better in cake baking and event decoration than inmate in the control group. The researcher recommend that teachers should use more of Adult literacy program in the prison on cake making and event decoration should be encouraged which

will help equip the inmates face the economic challenges of the society and be self-employed.

**Keywords:** Prison inmate, Adult literacy program cake baking, vocational skills

### 1. Introduction

Vocational skill acquisition is an economic development practice that enhances productivity and job creation, especially among prison inmates. Vocational education is any learning experience that is relevant in the world of work. This may take place in a variety of contexts including work places and educational settings. There are different types of vocational skills within the prisons in Plateau State which include the following; carpentry, wood work, tailoring, welding, soap making, hair dressing and shoemaking. However, vocational needs assessment into the prisons in Plateau State indicated that vocational skills such as baking and event decoration training are not available. A need analysis report conducted by the researcher among the prison inmates in the study area indicates that a majority of them are interested in baking. Baking skills are vocational skills that are relevant and profitable in recent times. Ceserani, Kinton and Foskett

(2000) defined baking as the cooking of food by dry heat with an oven in which the action of the dry convection heat is modified by steam. This produces crisps and dry food that are marketable and can generate employment. Baking involves mixing or otherwise (combining of) ingredients such as plain flour, sugar, eggs, butter, baking powder, flavor etc appropriately to form a dough for bread, meat pie, cookies and other pastry products. Baking industry is a money spinning industry that cuts across all ages. Baked products are gaining popularity as they are considered the most staple meal due to busy schedules of people today.

Time keeping is very important in cake baking. Time keeping especially in mixing the dough and the eventual baking in the oven must be observed to avoid overheating the dough. Dough can also be under heated example bread, if the initial heat is low the dough will fall and be damaged. An event decorator must also observe to ensure that the event venue is completely decorated before the stipulated time for occasion. Time is needed to organize the ingredients and in preparation for baking.

Similarly, time is required to prepare a particular venue for an event. Vocational skill acquisition will reduce the crime rate in the society this is because people will be gainfully engaged in meaningful money generating enterprise. Vocational skills acquisition will not only reduce crime but could promote economic growth and social development as well as enable prison inmates to engage in productive ventures that are profitable. Intervention in prison education and vocational training could be a worthwhile venture.

Adult literacy education is any learning or educational activity that occurs outside the formal school system and is undertaken by people who are considered to be adults in that society. The importance of adult literacy education cannot be underestimated; this is because it brings about the development of human potentials that are central to all other developmental efforts. To earn a living, persons especially the prison inmates need some form of literacy to acquire relevant vocational skills and to have proficiencies in them.

### **1.1 Statement of the Problem**

The society has negative perception and attitude towards prison inmates and ex-convicts. Serving prisoners and ex-convicts continue to suffer deprivation, outright rejection, victimization and stigmatization from the society and especially the people they once lived with. Some of the reasons people engage in crimes and criminal activities include unemployment, poor literacy levels, poverty, lack of vocational skills, peer pressure among others. The rise in crime and consequently imprisonment in Nigeria today can be traceable to the problems above. Cake Baking are among some of the vocational skills that are marketable in the Nigerian society today. These skills can flourish in rural or urban settings and prison inmates can start the business upon release from incarceration, thus transiting from a life in prison into living successfully within the society they were once members.

### **1.2 Aim and Objectives of the Study**

The purpose of this study was to investigate the effects of adult literacy programme on acquisition of Cake Baking vocational skills

among prison inmates in Plateau State. The specific objectives of this study are to:

- ascertain the level of cake baking vocational skills of prison inmates in Jos metropolis
- find out whether prison inmates can identify and use baking equipments correctly.
- find out the effects of adult literacy programme on the ability of prison inmates to correctly mix raw materials for baking

### **1.3 Research Questions**

The following research questions were formulated to guide the study:

- To what extent would adult literacy programme affect the ability of prison inmates to acquire baking skills?
- How would adult literacy programme affect the ability of prison inmates to handle equipments in baking and event decoration in the experimental group?

### **1.4 Hypotheses**

The following hypotheses were tested at 0.05 levels of significance:

- There is no significant difference between the pre-test and post-test mean scores of

prison inmates ability to identify and use tools for Cake baking in the experimental group.

- There is no significant difference between the pre-test and post-test mean scores of prison inmates ability to mix raw materials in Cake baking in the experimental group.

### **1.5 Theoretical Framework**

This study is hinged on the Human Capital Theory propounded by Schultz in 1961. However, Becker and Mincer contributed to the evolution of this theory in 1964 and 1974 respectively. The theory depicts that investments in individuals can be mathematically measured based on the economic value they are able to contribute to the society. Therefore, education (formal and non-formal), job training and marketable talents are ways in which humans increase their ability to acquire knowledge and generate higher wages.

### **1.6 Significance of the Study**

The findings of this study will hopefully be of benefit to the following stakeholders: the prison inmates, their family members, the prison

authority, the Government, and the society at large.

There are quite a number of reasons why people commit crimes, get imprisoned and even re-offend. Some of such reasons include unemployment, stigmatization, illiteracy and victimization. If prison inmates are provided with vocational skills that can enable them re-integrate into the society upon release from prison, especially the vocational skills with minimal startup capital like event decoration and baking skills, this will help reduce the incidence of re-offending. When inmates are engaged in productive literacy and vocational skill that lead to economic and social independence, it will bring about reduction in idleness and consequently may reduce the tendencies to engage in crimes. This is because upon release from incarceration, the inmates could start a business that could make them employable or become independent entrepreneurs and even employers of labour. The vocational skill training of prison inmates may increase their choice of employment after completion of their term of imprisonment which may eventually help them contribute

positively to national development (instead of being nuisances to the society). This will hopefully help them to adjust fully into the society knowing full well that there is dignity in labour.

Finally, the outcome of this study if implemented will significantly help reduce the crime rate in the society and may also reduce the tendencies to re-offend due to lack of proper engagement in a meaningful trade since they may return to the society well skilled, reformed and empowered to face the challenges of living.

### **1.7 Scope of the Study**

The study was delimited to Jos and Lamingo prisons in Plateau State. The study did not cover other prisons in Plateau State such as Pankshin, Langtang, Shendam and Wase prisons. The study was restricted to convicted prison inmates serving jail term of six months to one year only and not those serving long term of one year and above. The study was further delimited to vocational training in Cake baking.

## **2. Concept of Vocational Skill Acquisition**

Skill acquisition is a means of providing the opportunity to people to make maximum contribution to their own development and to the self-sustaining development of the community. According to Emeka (2011), skill acquisition is a process whereby individuals acquire skills that they can use to impact their generation. Skill acquisition is not for the poor or middle class individuals only but for everyone. It is relevant for career and or professionals as well as dropouts or individuals who cannot further their education due to certain constraint. Skills acquired make individuals versatile, self- sustaining and independent. Tamaraye (2011) said that; through skill acquisition, creativity, initiative, capability, commitment and empowerment, skills are developed or achieved. It is also a means of realizing human energy by providing an opportunity for people to maximize contribution to their own development and to the self-sustaining development of their communities. Vocational skill acquisition training is aimed at transforming the human person so as to bring about his or her potentials

and empower others to excel in life. Training for skill acquisition also enables individuals to become independent and self-reliant rather than be a liability to his or her family or community. Vocational skill acquisition involves training for specific career or trade. It focuses on practical applications of skills learned and is generally unconcerned with theory or traditional academic skills (Doak, 2011). This also provides a link between education and the working world. Similarly, this form of training is usually provided within or outside the conventional learning environment. Vocational skill acquisition training emphasizes skills and knowledge required for a particular job function (such as event management, carpentry). It is also referred to as vocational education or technical education, which aims at equipping people with knowledge, skills and or competence required in particular occupations or more broadly, in the labour market. This is aimed at equipping people with skills that will enable them get good jobs in the modern world and to face the key challenges posed by globalization (United Nations, Educational,

Scientific and Cultural Organization UNESCO, 2012).

According to Onah (2000), skill acquisition is the willingness to and ability of an individual to seek investment opportunities to establish as well as engage in a skill that will enable him become self-reliant and also empowers people in diverse skills. Thus, they can become self-employed or employers of labour. The European Centre for the Development of Vocational training (2013) is of the view that vocational skill acquisition training can be formal, non-formal or informal and can take place in education and training institutions, at work places within the informal and traditional apprenticeships and in everyday life. These involve the acquisition of technical and non-technical skills, in addition to general education that are supported by acquiring awareness, knowledge, skills and attitudes relating to occupations in various sectors of economic and social life.

### **3. Baking Skill**

Baking is the technique of cooking food by dry heat in an enclosed oven, hot sand or stove in which the action of the dry convention heat is

modified by steam. Baking is a combination of different ingredients and skills. The dry heat of baking transforms the ingredients in the mixture which in turn changes the outer layer into brown thereby making the baked product edible attractive and tasty. This procedure can be a lot of fun when the baker is able to painstakingly follow the instruction. The baking business is a lucrative and moneymaking venture that can generate income for the baker, his or her community and the nation at large. Baking industry has an important place in the economy of any nation. This is because people consume baked products so massively due to easy access, low price, safety of time and high nutritional value. With the high rate of busy schedules of people generally, baked products continue to gain popularity.

There are two methods of baking identified by Baking Skills Manual (2013). They include; dry baking; when baking, steam rises from water content of the food. This steam combines with the dry heat of the oven to cook the food .Examples are cakes, pastries etc. Increased humidity baking; when baking certain foods,

the oven humidity is increased by placing a bowl of water or injection-steam into the oven thus increasing the water content of the food. The purpose of the prison business is to train the inmates to have livelihood skill, develop the habit of diligence and cultivate their bodies and mind, so that they can adapt to the normal life of the community.

#### **4. Methodology**

##### **4.1 Research Design**

This study employed the quasi experimental research design. Specifically the non-equivalent pre-test, post-test control group design was adopted. According to Awotunde, Ugodolunwa and Ozoji (2002), quasi experimental research designs are utilized in order to carry out a random assignment of subjects into groups.

Population of this study comprised all convicted prison inmates in Lamingo and Jos prisons, Plateau State. The Lamingo and Jos prisons have a total number of 1474 prison inmates serving various jail terms. The population comprises 668 convicted (both long and short terms) 570 awaiting trial, 31 life imprisonment, and 205 condemned. Similarly,

out of the convicted prison inmates, 165 are serving short term of six months to one year; while the remaining 503 are serving long term of one year and above. The population distribution is presented below:

The sample for the study comprised 40 convicted inmates who are serving short jail term of six (6) months to one year, that is, 20 from Jos and 20 from Lamingo prisons who have functional literacy and who may not have acquired any vocational skill before, and may be interested in acquiring vocational skill in baking and event decoration. There are 615 convicted prison inmates in Jos prison and 53 in Lamingo prison making a total number of 668 convicted inmates in both prisons. Out of this number, 153 are serving short term of six months to one year; while 515 are serving long term of One year and above. The researcher utilized those convicts who will be released between six months to one year. This is to enable the inmates practice the trade immediately without forgetting what they learnt. The choice of Jos and Lamingo prisons is because both meet the criteria for choosing participants for the study. The inmates in

Lamingo prison are all convicted short term and will be released between six months to one year. 165 prison inmates serving short term are in the Jos prison and so selecting the sample for the study did not pose much problem.

#### **4.2 Sampling Technique**

In selecting samples for the study, two sampling techniques were employed. They include the simple random and the purposive sampling techniques. Awotunde et al. (2002) asserted that after obtaining accurate sampling frame and numbering the units it contains serially, a simple random sample can be drawn using the lottery or random number. Therefore, a structured questionnaire developed by the researcher was used as a base line data to select inmates that comprised the sample of the study. This technique was also used in placement of inmates into experimental and control groups.

#### **4.3 Instruments for Data Collection**

The instrument used for the collection of data for this study is Baking Skill Test (BST).

**Baking Skill Test (BST)** is a researcher made test comprising the theoretical and practical aspects of the training following step by step procedure. Section A comprised the personal

data while section B contained ten test items.

The test was used to assess the ability to mention equipments and materials needed for baking, ability to explain the step by step procedure in baking, ability to demonstrate practically the step by step procedure, ability to use the tools and materials orderly, ability to mix the raw materials perfectly, ability to recognize safety tips, ability to maintain quality of products, ability to start and finish well, ability to keep to time and ability to keep records. This instrument was used during the pre-test and post-test.

#### **4.4 Reliability of the Instruments**

Reliability of the Baking Skill Test (BST) was established using test-retest reliability. Furthermore, a pilot study was conducted on inmates in Pankshin prison in Plateau State to ascertain the efficiency and the appropriateness of the instruments. The reliability obtained was 0.850.

#### **4.5 Scoring Procedure**

The Cake Baking Skill Test (CBST) is scored based on the following criteria: very high knowledge (90% and above), high knowledge (80%-89%), moderate knowledge (60%-79%),

low knowledge (40%-59%) and poor knowledge (0%-39%) respectively.

**4.6 Method of Data Analysis**

Data for this study was analyzed using descriptive statistic to answer the research questions. The t-test for related sample was used to test the hypotheses formulated to guide the study. This statistic was chosen because of its ability to compare the scores of two groups (experimental and control). The hypotheses

were tested at 0.05level of significance. The research questions were answered using the arithmetic mean and percentages. Hypotheses one, two was tested using related sample t-test

**5. Results**

This section presented and discussed the result of the study based on the research questions answered and research hypotheses tested at 0.05 level of significance.

**Research Question 1**

How would adult literacy programme affect the ability of prison inmates to handle equipments in baking in the experimental group?

**Table 1:** Extent to which Adult literacy programme will affect the ability of Prison Inmates to Handle Equipments in Baking in the Experimental Group

Extent of Knowledge	EXPERIMENTAL GROUP		CONTROL GROUP	
	Pre-test	Post-test	Pre-test	Post-test
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Poor Knowledge	19 (95)	0	19 (95)	0
Low Knowledge	1(5)	0	1(5)	17(85)
Moderate Knowledge	0	0	0	3(15)
High Knowledge	0	6(30)	0	0
Very High Knowledge	0	14(70)	0	0
<b>Total</b>	<b>20 (100)</b>	<b>20 (100)</b>	<b>20 (100)</b>	<b>20 (100)</b>

**Note:** Percentage is in parenthesis (%)

Table 1 reveals the extent at which Adult literacy programme will affect the ability of Prison Inmates to Handle Equipments in Baking in the Experimental Group. Before intervention, 95% and 5% of the inmates had poor knowledge and Low Knowledge level respectively, Handling Equipments in Baking skills in both experimental and control groups. After intervention, 85% of the inmate in the control group had Low knowledge and 15% had Moderate knowledge Level of Handling Equipments in Baking skills respectively; while 70% and 30% of the inmate in the experimental group had Very High knowledge and High knowledge level respectively in Handling Equipments in Baking skills. This implies that to a high and very high extent Adult literacy programme had affected the ability of Prison Inmates in Handling Equipments in Baking Skills after intervention.

**Research Question 2**

To what extent would adult literacy programme affect the ability of prison inmates to start and finish the production of baking products after intervention?

**Table 2:** Extent to which Adult literacy programme will affect the ability of Prison Inmates to Start and Finish the Production of Baking Products after Intervention

Extent of Knowledge	EXPERIMENTAL GROUP		CONTROL GROUP	
	Pre-test	Post-test	Pre-test	Post-test
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Poor Knowledge	0	0	20 (100)	0
Low Knowledge	0	0	0	0
Moderate Knowledge	12(60)	0	8(40)	1(5)
High Knowledge	8(40)	0	12(60)	19(95)
Very High Knowledge	0	20(100)	0	0
<b>Total</b>	<b>20 (100)</b>	<b>20 (100)</b>	<b>20 (100)</b>	<b>20 (100)</b>

**Note:** Percentage is in parenthesis (%)

Table 2 reveals the Extent to which Adult literacy programme will affect the ability of Prison Inmates to Start and Finish the Production of Baking Products before and after Intervention. Before intervention in the experimental group 60% and 40% of the inmates had moderate and high knowledge of Starting and

Finishing skills in the Production of Baking Products respectively while in the control group 40% and 60% of the inmates had moderate and high knowledge of Starting and Finishing skill in the Production of Baking Products respectively. After intervention, 100% of the inmate in the experimental group had very high knowledge Level of Starting and Finishing the Production of Baking Products; while 95% and 5% of the inmate in the control group had Moderate knowledge level and High knowledge level respectively in Starting and Finishing the Production of Baking Products. This implies that to a very high extent Adult literacy programme had affected the ability of Prison Inmates in Starting and Finishing the Production of Baking Products after intervention.

**Hypothesis 1**

There is no significant difference in the pre-test and post-test mean scores of prison inmates ability to identify and use tools for Cake baking in the experimental group.

**Table 3:** Summary of t-test Analysis in Pretest and Post-Test Mean Scores of Prison Inmates ability to Identify and Use Tools For Cake Baking in the Experimental Group

Groups	N	$\bar{X}$	SD	Df	t-cal	P-value
Pre-test	20	3.45				
			0.6	38	-32.894	.000
Post-test	20	9.65	0.49			

**Source:** Field data 2019

Table 3 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. The inmate in Experimental Group had a pre-test mean score ( $\bar{X} = 5.60$ ,  $SD = 0.52$ ) and a post-test mean and a standard deviation score of ( $\bar{X} = 15.20$ ,  $SD = 1.55$ ), the degree of freedom of 18 and a t-test value -18.59 with a p-value of 0.000. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This implies that there is a significant difference in the Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group.

**Hypothesis 2**

There is no significant difference between the pre-test and post-test mean scores of prison inmates ability to mix raw materials in Cake baking in the experimental group.

**Table 4:** Summary of t-test Analysis in Pre-Test and Post-Test Mean Scores of Prison Inmates Ability to Mix Raw Materials in Baking in the Experimental Group

ABILITY TO KEEP TO TIME	N	$\bar{X}$	SD	Df	t-cal	P-value
Pre-test	20	1.20	0.41	38	-24.158	.000
Post-test	20	4.65	0.49			

Source: Field data 2019

Table 4 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group. The Inmates ability to Mix Raw Materials in Cake Baking had a pre-test mean score ( $\bar{X} = 3.10$ , SD = 0.74) and a post-test mean and a standard deviation score of ( $\bar{X} = 8.50$ , SD = 2.01), the degree of freedom of 18 and a t-test value -7.962 with a p-value of 0.00. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected.

**6. Discussion of Results**

Table 1 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. The inmate in

Experimental Group had a pre-test mean score ( $\bar{X} = 5.60$ , SD = 0.52) and a post-test mean and a standard deviation score of ( $\bar{X} = 15.20$ , SD = 1.55), the degree of freedom of 18 and a t-test value -18.59 with a p-value of 0.000. Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This implies that there is a significant difference in the Pre-test and Post-test Mean Scores of Prison Inmates ability to Identify and Use Tools for Baking in the Experimental Group. This finding is in line with that of Ajah and Nweke (2017) which revealed that vocational training do not exist in Nigerian prison system such as fashion design, dressing hair salon as well as other inmates in Nigeria.

Table 4 reveals the t-test Analysis of Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group. The Inmates ability to Mix Raw Materials in Cake Baking had a pre-test mean score ( $\bar{X} = 3.10$ ,  $SD = 0.74$ ) and a post-test mean and a standard deviation score of ( $\bar{X} = 8.50$ ,  $SD = 2.01$ ), the degree of freedom of 18 and a t-test value -7.962 with a p-value of 0.00. This implies that there is a significant difference between Pre-test and Post-test Mean Scores of Prison Inmates ability to Mix Raw Materials in Cake Baking in the Experimental Group Since the p-value is less than 0.05 level of significance, the null hypothesis was rejected. This finding agrees with the findings of Asokhia & Agbonluae (2013) which states that rehabilitation services in Nigerian prisons are not international best compliance.

### 7. Conclusion

Adults literacy programme on acquisition of cake baking vocational skills among prison inmates in Plateau State have been found to be an effective way of job creation and a rehabilitation strategy to make the imprison inmate acquire skills to be self-employed and

make them to have daily, weekly and monthly income through cake baking for birthday, anniversaries, valentine and so on.

### 8. Recommendations

Based on the outcome of this study, the following recommendations were made:

- Prison inmate should be encourage to prepare cakes while in prison
- Government should encourage cake baking vocational skills in the prison of Nigeria
- Government and Non-profit oriented individuals should provide soft startup loan for this inmates after been released from prison.

### References

- Ajah, B. O. & Nweke, J. O (2017). Challenges facing vocational training prison inmates in Nigeria: A study of Abakaliki And Awka prisons. Middle East Journal of Scientific Research, 25 (7) ,1458-1468.
- Asokhia, M.O. & Agbonluae, O.O. (2013). Assessment of rehabilitation services in Nigerian prisons in Edo state. American International Journal of Contemporary Research, 3(1), 224-230.

- Awotunde, P. O. & C. A. Ugodulunwa (2002). An introduction to statistical methods in Education, (New Edition). Jos; Dekka Publication.
- Ceserani, V., Kinton, R. & Foskett, D. (2000). Practical cookery: Hodder and Stoughton Educational. A division of Hodder headline London.
- Doak, M. J (2011). Vocational training – what is vocational training? Other opportunities for vocational training conclusion. Retrieved from <http://careers.stateuniversity.com/pages/854/vocationaltraining.htm/IYZZ//>.
- European Centre for the Development of Vocational Training (2003). Vocational Education and training in European development co-operation DEVCOB3, Employment, Social Inclusion, Migration Retrieved on 14<sup>th</sup> July 2017 from: <http://www.cedetop.europa.eu/EN/publications/20031.aspx>.
- Onah, F. O. (2000). The Challenges of Human Resources in Local Government in Nigeria. Nigerian, Journal of Public Administration and Local Government 14 (1) 7-18.
- Tamaraye, D. S (2011). Skill Acquisition as a Tool for Poverty Reduction in Bayelsa State Nigeria. An unpublished M. Sc. Thesis in the Department of Public Administration and Local Government University of Nigeria, Nsukka.
- United Nations Educational, Scientific and Cultural Organization (2012). Youth and Skills for all Global Monitoring Report. Building skills in informal sector and Education for All Global Monitoring Report 2012., UNESCO.



## Scaling-Up Educational Intervention on Teacher Education in the State of Emergency

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**Abstract.** Scaling-up educational intervention on teacher education in the state of emergency is a step towards improving on teacher training and retraining to improve the teacher and the taught. Scaling-up educational intervention is a viable alternative to classes taught using traditional lecture method. It is a research proven pedagogy that prepares students for leadership through development of team building skills. When applied to teacher education, will make a great educational intervention considering that the teacher plays very important role as the initiator of the learning process, the facilitator of the learning skills, the coordinator of the learning sequence; the assessor of learning efficiency; and the pivotal element in the entire educational development. The teacher is the one who will and can bring about change in behavior, adaptation to circumstances and initiator of skill acquisition in state of emergency.

**Keywords:** Scaling up, educational intervention, Teacher Education and State Emergency

### 1. Introduction

If education is the transmission of what is worthwhile involving knowledge and understanding, and some kind of cognitive perspective, then the teacher's role becomes one of the most formidable determinant of the quality of education. To perform roles effectively, teachers must have a true vision of

his mission in the school where formal education takes place. The teacher usually involves in teaching-learning situation. He knows the appropriate techniques, methods and materials that are adequate for a particular age group and for a particular environment. Thus, for good teaching-learning situations, teachers should act like catalyst, they are also expected to use styles of teaching that suits their individual skills, their students' capabilities and expectation of stakeholders even parents. Since the future progress and developments of a nation to some extent depend on the quality of its teachers and teacher education has been clearly underscored in the National Policy on Education (NPE, 2013).

Teachers are largely, responsible for the translation and implementation of educational policies, curriculum offerings, instructional material packages and assessment of learning outcomes at the level of learners. Besides his instructional leadership role, the teacher exerts a lot of influence on the character formation and the process of socialization of the children within the learning environment (Edozie, (2005) in Ifamuyiwa, (2013)).

Going by the National Policy on Education from 1981 to date, government had made tremendous effort on teacher production but the quantity and quality of teachers produced in Nigeria over the years fell short of national expectations and

needs hence the desire for interventions. Scaling-up educational interventions in Nigeria couldn't have been clamoured for in a better time than now.

## 2. Scaling-up

Scaling-up is deliberate effort to increase the impact of successfully tested pilot, demonstration or experimental projects to benefit more people and to foster policy and programme development on lasting basis. This name was originally "Student-centred activities for large enrollment undergraduate physics". But since then many different institutions have adapted scale-up to teach variety of courses of varying enrollment sizes. The acronym was changed to "Student-centred Active Learning Enrollment for Undergraduate Programmes" now because of the increasing number of pre-college installations, plus to draw attention to the instruction as well as the space, the name has become "Student-centred Active Learning Enrollment with Up-side-down Pedagogies".

The basic idea is that students are given something interesting to investigate. While they work in teams on these "tangibles" (hands-on measurement or observations) and "ponderables" (interesting, complex, problems), the instructor is free to roam around the classroom-asking questions, sending one team to help another or asking why someone else got a different answer. There is no special lab class and most of the "lectures" are actually class-wide discussions. The groups are carefully structured and give students many opportunities to interact.

Scale-up facilitates active learning in redesigned studio classrooms and has been effectively implemented for large enrollment classes of large student members. It is a viable alternative to classes taught using a traditional lecture with separate breakout laboratory sections.

## 3. State of Emergency

This is a situation of national danger or disaster in which a government suspends normal

constitutional procedures in order to regain control.

It can also be described as a situation in which a government is empowered to perform actions that it would normally not be permitted to do. A government can decide such a state during disaster, civil unrest, or armed conflict.

## 4. Teacher Education

Teacher Education has been defined differently by different educators. Ughamadu and Oriahi (1997) see teacher education as a gigantic and all-important enterprise for any nation that is interested in making pronounced advancement in all sphere of life. It is that kind of formal, systematic and organized training which is geared towards production of professional teachers. It is body of knowledge, skills, attitudes etc. that are given to students in school to enable them to achieve efficiency and effectiveness in their teaching career after graduation. According to Okafor (1988), teacher education is the form of education which is properly planned and systematically tailored and applied for the cultivation of those who teach and are training to teach. In its extended dimension, it comprises also the preparation of administrators, supervisors and guidance counsellors.

The contention that teachers are born not made can be true only in a few rare cases. It is also not contended that training by itself is sure to make good teachers but it is generally observed that a teacher with training becomes more mature and confident to perform his task more efficiently.

Proper education of the teacher enables him to have knowledge of how children grow, develop and learn, how they can be taught effectively and how their inner potentials can be brought out and developed. Teacher Education is needed to kindle the imagination of the teacher and to remove the evils of "hit and miss" process to accord a professional status to the teaching profession and above all, to make the optimum use of the time and energy of the teacher and the taught (Aggarwal, 2004).

## 5. Scaling-up Intervention on Teacher Education in a State of Emergency

It has been aptly remarked “If you educate a boy, you educate one individual, if you educate a girl, you educate the whole family and if you educate a teacher, you educate the whole community”. A sound programme of professional education of teachers is essential for the quantitative improvement of education. Investment in teacher education can yield very rich dividends because the financial resources required are small when measured against the resulting improvement in the education of millions.

The maxim that “No educational system can rise above the quality of its teacher” clearly demonstrates the position of teachers in the Nigerian educational development (Adeosun and Okey in Akintola, 2013). This insight enforces the drives to make rigorous effort towards producing competent teachers as teaching profession is a versatile field that requires at all time the correct identification of indices of developments in the society (Akintola, 2013). There is a need to move away from regarding everyone who possesses a paper qualification as a competent teacher. The importance of teacher competence therefore, cannot be overemphasized and this is sustained by single most important factor in determining student performance is the quality of his or her teachers.

Quality of teachers and teacher education has been given prominent attention in the National Policy on Education in the area of Educational Planning and Development. This is seen in the light of the National Policy on Education (1981) which devoted the entirety of its section 9 made up of 26 subsections (ss.57-82) to Teacher Education. The 1995 draft 3<sup>rd</sup> edition comprises 11 sections out of which 6 is devoted to higher education. Teacher Education was subsumed under this section and has 10 subsections (ss.56-65) (Olagboye, 2000). But the challenges are still there in areas of quantity and quality.

Scaling-up interventions, the research proven pedagogies that prepare students for leadership through development of team building skills will make a great educational intervention for teacher

education with reference to the critical role of the teacher in formal education with the current quantitative expansion we have today, the system must of necessity take in its stride qualitative teacher education if quantity is to be matched with corresponding quality in the education provided. This is because the central role which teachers play in education. With this educational intervention, the general low quality of education, the issues of high number of out-of-school children, low levels of incompetence among teachers, low primary completion, persistent high levels of drop-out at primary, little learning by children that are able to access school, low achievement levels, low levels of learning in the nation’s public schools, emergency situations – internally Displaced Children, the Almajiris, Nomadic Children, the Girl child, children with disabilities/special needs etc will be tackled if proper intervention is made.

When an emergency such as war, communal conflict, insurgency, volcanic eruption, land slide, flood, building collapse etc, occurs in a community, we often notice that schooling for most children is interrupted. We must understand that as a result of these calamities, the child’s life must not be allowed to stagnate. In most cases, the focus has been on how to survive, so priority is given the responses such as shelter, water and sanitation, food and health, of course these are vital necessities but these may only work on short term and temporary bases, while on the long term, education helps the children meet their needs, reduces vulnerability to disaster and help build their lives.

Education provides children the fundamental role of protection. A safe supervised environment is what a child who has witnessed crisis requires. Most children are vulnerable during an emergency. Education helps to provide psycho-social support to children, teachers and community members. The effects of emergency which often traumatize families can be gradually healed as children engage in activities where they learn to express their emotions. Children learn to cope with skills that help them to be resilient to the effects they had experienced in the emergency. The teacher’s

role here includes according to Kadiri (2015) creating awareness on the importance of education in emergencies in areas of:

- Building a core team of critical mass and master trainers that through step down training can cascade knowledge to teachers in order to build their capacity at the school level.
- Integrating psychological activities and life skills into our daily lesson delivery not as a separate subject but an intervention to promote concrete changes in the content and methodology to be used in the classroom, especially those skills that boarder on cultivating critical thinking value clarification, communication, decision making etc. this skills will help children to develop resilience and cope with any crises while they learn to forge ahead with determination.
- Creating a peaceful and socializing environment where all children are treated with respect and given the chances to discuss freely their thoughts as they view issues.

## 6. Conclusion

Nigeria can get the education system working if and when she confronts the challenges of quality and quantity head on. To achieve this, quality education at all levels should be paramount as education will involve learners who are healthy, contents that are reflected in relevant curricular, the process through which trained teachers use child-centred teaching approaches which scale-up intervention is advocating, and outcomes that encompass knowledge, skills, attitudes and values for positive participation in the society. Funding at all levels of government is key to quality education in Nigeria. Poor funding has led to acute shortages of infrastructures and facilitates at all levels. Efforts on training of teachers is desired because poor quality teachers is a major problem confronting the quality of our education system.

## References

- Aggarwal, J.C. (2004). *Teacher and Education in a Developing Society*. Vikas: Publishing House PVT Ltd.
- Akintola, O.A. (2013). Professional Competence of Nigeria Teachers: The Bane and Bounty for Educational Development. In P.K. Oyedele, M.O. Arikewuyo & A.C. Njoku (eds) *Challenges of Educational Development in Nigeria*. Ondo: National Institute for Educational Planning and Administration.
- Federal Republic of Nigeria (1981). *National Policy on Education*. Lagos: Federal Government Press.
- Federal Republic of Nigeria (2013). *National Policy on Education*. Abuja: Fed. Govt Press. [https://en.m.wikipedia.org/wiki>state\\_...](https://en.m.wikipedia.org/wiki/state_...) Accessed 27/4/2019
- [https://en.m.wikipedia.org/wiki>SCAL...](https://en.m.wikipedia.org/wiki/SCAL...) Accessed 27/4/2019
- Ifemuyiwa, A.S. (2013). The Challenge of Training and Retraining for Teacher Preparation, Development and Production on Nigeria in P.K. Ojedele, M.O. Arikewuyo and A.C. Njoku. *Challenges of Educational Development in Nigeria*. NIEPA: Ondo State.
- Kadiri, A.M. (2015). *Educating the Nigerian Child in a State of Emergency: A Book of Readings*. Yola. School of Early Childhood Care and Primary Education.
- Okafor, F.C. (1988). *Nigeria Teacher Education: A Search for New Direction*, Enugu: Fourth Dimension Publishers.
- Olagboye, A.A. (2000). *Nigerian Teacher Education Policy: Implementation, Problem and Prospects* in J.O Fadipe and E.E. Oluchukwu (eds) *Educational Planning and Administration in Nigeria in the 21<sup>st</sup> Century*. Ondo: NIEPA.
- Ughamadu, K.A. & Oriahi, C.I. (1997). *The Concept and Objectives of Teacher Education in Teacher Education Concepts and Principles*. Onitsha: Kmensuo Educational Publishers.



## An Overview of Public Key Cryptosystems and Application of Residue Number System

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**Abstract.** The rapid growth in wireless communication system, personal communication system, and smart card technology in our society makes information more susceptible to abuse. The content of the communication may be exposed to an eavesdropper, or system services can be used deceptively. It is vital that these information systems are made secure before these systems are deployed broadly in society. The increasing problem of contraventions in information security has created a demand for serious efforts towards ensuring security of data and information in electronic system communications. The use of these electronic systems for e-commerce, Internet banking, government online services, mobile commerce, Public Key Infrastructure, etc., is dependent on the efficiency of the security solutions. These security concerns are further heightened when resource-constrained environments and real-time speed requirements have to be considered in IT applications. Consequently, these IT security issues have been a subject of intensive research in areas of computing, networking and cryptography.

This paper presents the review of public key cryptosystems and application of residue number system. This public key cryptosystem can be used in wide range of electronic devices, such as

Personal Computers, wireless handsets, smart cards, hardware security modules, network appliances, such as routers, gateways, firewalls, and storage and web servers. This paper will examine into details public key cryptography and residue number systems and its application in securing data and information.

**Keywords:** Public key cryptography, Residue Number Systems, Data Security, Data encryption, Data decryption.

### 1. Introduction

Communicating securely is becoming more significant as more businesses and transactions are taking place over more and less secured networks. In the early days of the internet, all users knew themselves on the net and all were considered to be honest users. Times have changed however, and the need for encrypting and validating communications is necessary. Providentially, protocols have grown to allow safe and sound exchange of information. Since the inception of written communication effort have been geared up towards the advancement of techniques of secret communication, a science known as cryptography.

Public-key is regularly used to detect a cryptographic process that uses an asymmetric-key pair which makes use of a public-key and a private-key. Public-key encryption uses that key duo for encryption and decryption. The public-key is made public and is dispersed widely and freely. The private-key is never distributed and must be kept secret.

In prearranging a key pair, data encrypted with the public-key can individually be decrypted with its private-key. On the other hand, data encrypted with the private-key can only be decrypted with its public-key. This feature is used to effect encryption and digital signature. Public-key cryptography allows for protected communications, strong authentication, and message integrity.

Residue number system on the other hand is a non-weighted number system. It is different from the weighted number system like binary and decimal number systems. Residue arithmetic operations like addition, subtraction, and multiplication are intrinsically carry-free. Each digit of the result is a function of only one digit from each operand, thereby autonomous of all other digits. This feature helps in substantial improvement on the processing speed, which is the major criterion in cryptographic applications. The rest of this paper is presented as follows; Section 2 provides the basic background information about cryptography. In section 3 we give the fundamental concepts of the representation of numbers in residue number system. Section 4 the application of residue number system in public key cryptography. An in section 5 the paper is concluded.

Before the contemporary age, cryptography concentrated on message confidentiality which is data encryption. This is the translation of messages from a clear form into a meaningless one and back again at the other end, rendering it unreadable by hackers or eavesdroppers without secret knowledge of the key needed for decryption of that message. Encryption tried to ensure secrecy in communications. But recently the field has expanded beyond confidentiality to include techniques for message integrity checking, sender and receiver's identity authentication, digital

signatures, interactive proofs and secure computation, among others.

Previously there was a classical cipher which was referred to as transposition ciphers, which reshuffle the order of letters in a message. As an illustration, 'hello world' becomes 'ehlol owrdl' in an inconsequentially trouble-free rearrangement scheme. And subsequently a substitution ciphers, which systematically swap letters or groups of letters with other letters or groups of letters. This can be made simpler with this illustration too; 'fly at once' becomes 'gmz bu podf' by replacing each letter with the one following it in the Latin alphabet. Simple versions of either have never offered much confidentiality from creative opponents since the ciphertexts produced by a classical cipher and some modern ciphers can divulge statistical information about the plaintext, and that information can often be used to crack the cipher. Prior to the early 20th century, cryptography was largely concerned with linguistic and lexicographic patterns. But there was wide-ranging open academic research into cryptography in recent times; it started only in the mid-1970s. And of late, IBM personnel designed the algorithm that became the Federal American Data Encryption Standard; Whitfield Diffie and Martin Hellman published their key agreement algorithm; and the RSA algorithm was in print in Martin Gardner's *Scientific American* column.

And later the stress has loosened, and cryptography now makes wide range use of mathematics, information theory, computational complexity, statistics, combinatorics, abstract algebra, number theory, and finite mathematics.

## 2. Cryptography

Cryptography is one of the methods used to make sure confidentiality and integrity of information in a communication system are ensured. It resulted from the Greek word *kryptos* which means secret-writing. Cryptography is the science and art of transforming messages to make them secure and opposed to attack.

Cryptography is generally described as the art and science of scrambling data to prevent

unauthorized access over unsecured transmission channel. Cryptography mostly works on the principle of mathematics that generates different algorithms known as cryptographic algorithm [9]. Cryptographic algorithm is a mathematical function that is used in encryption and decryption method.

Cryptography is a means used to protect information in computing systems. It is used universally on a daily basis. It is used to protect both data at rest and data in motion. Cryptographic systems are an essential part of standard protocols, particularly the Transport Layer Security (TLS) protocol, making it easier to incorporate strong encryption into a wide range of applications.

Data security in modern computing systems is an intricate problem. Network links and remote file system services, which are presumed to be convenient; often make it possible for an intruder to gain access to sensitive data by compromising only a single component of a large system. Because of the dilemma of reliably protecting information, sensitive files are often not stored on networked computers, making access to them by authorized users problematic and putting them out of the reach of useful system services such as backup. Even though, off line backups are themselves a security risk, since they make it difficult to destroy all copies of confidential data when they are no longer needed. In effect, there is fear that computer data are not very private. Thus a situation arises where unadventurous wisdom warns us not to hand over our most important information to modern computers. Cryptographic techniques offer a competent approach for protecting files against illicit access. When correctly implemented and properly applied, modern cipher algorithms (such as the Data Encryption Standard (DES) and the latest IDEA cipher are widely believed amply to render encrypted data unavailable to any foe who cannot supply the correct key.

Internet traffic, which passes information through transitional computers, can be intercepted by a third party. These could be in the form of the following:

- **Eavesdropping:** Information remains intact, but its confidentiality is compromised.
- **Tampering:** Information on transit is changed or replaced and then sent to the receiver.
- **Impersonation:** Information passes to a person who poses as the anticipated recipient.

Impersonation can take two forms:

- **Spoofing:** A person can act as if to be someone else.
- **Misrepresentation:** A person or organization can misrepresent itself

Nowadays cryptography is more than encryption and decryption. It has developed from encrypting files to full scale e-commerce business online, it provides:

- **Confidentiality:** The deterrence of unauthorized leakage of information.
- **Availability:** The stoppage of unauthorized concealment of information or resources.
- **Integrity:** The preclusion of erroneous alteration of information.
- **Authorization:** The process of allowing only approved user's access to sensitive information.

Privacy ensures that only the sender and intended recipient of an encrypted message can read the contents of the message that are transmitted from one place to another and no one can understand it even by any intermediate parties that may have intercepted the data stream.

Non-repudiation provides a method to assure that a party to a transaction cannot falsely claim that they did not participate in that transaction.

## 2.1 Encryption and Decryption

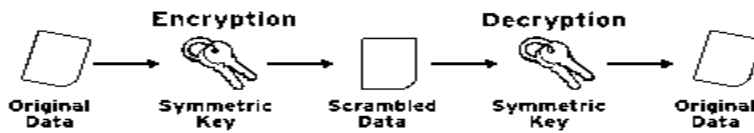
Encryption is the process of transforming information so it is inarticulate to anyone but the intended recipient. Decryption is the process of decoding encrypted information. A cryptographic algorithm, which can also be referred to as a cipher, is a mathematical

function that is used for encryption or decryption. Typically, two correlated functions are used, one for encryption and the other for decryption. With most modern cryptography, the capability to keep encrypted information undisclosed is based not only on the cryptographic algorithm, which is widely

known, but on a key that is essential for use with the algorithm to produce an encrypted result or to decrypt previously encrypted information. Decryption is simple if you have the correct key. Decryption deprived of the correct key will be very hard, if not intolerable.

**2.1.1 Symmetric-Key Encryption**

With symmetric-key encryption, the encryption key can be considered from the decryption key and viz-a-viz . With most symmetric algorithms, the equivalent key is used for both encryption and decryption, as shown below.



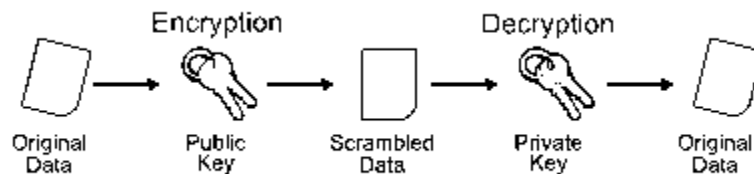
**Figure 1.1. Symmetric-Key Encryption**

Implementations of symmetric-key encryption can be very proficient, so that users do not experience any major time delay as a result of the encryption and decryption. Symmetric-key encryption also provides a degree of authentication, since information encrypted with one symmetric key cannot be decrypted with a different symmetric key. As long as the symmetric key is kept secret by the two parties using the encrypted message, each of them can be sure that it is communicating with the other as long as the decrypted messages is intact.

Symmetric-key encryption is efficient only if the symmetric key is reserved secret by the two parties. If someone else discovers the key, it affects both confidentiality and authentication. A person with an unauthorized symmetric key can decrypt messages sent with that key, and can also encrypt new messages and send them as if they came from one of the legitimate parties using the key.

**2.1.2 Public-Key Encryption**

Public-key encryption which is also known as asymmetric encryption involves a pair of keys, a public key and a private key, associated with an entity. Each public key is made available to everyone, and the matching private key is kept secret. Data encrypted with a public key can only be decrypted with the matching private key. Encryption shows a simplified view of the way public-key encryption works.



**Figure 1.2. Public-Key Encryption**

The method shown in Figure 1.2, “Public-Key Encryption” allows public keys to be unreservedly circulated, while only authorized

people are able to read data encrypted using the private key. In general, to send encrypted data, the data is encrypted with that person's public key, and the person receiving the encrypted data decrypts it with the equivalent private key.

In relation with symmetric-key encryption, public-key encryption involves more processing and may not be viable for encrypting and decrypting huge amounts of data. However, it is possible to use public-key encryption to send a symmetric key, which can then be used to encrypt additional data.

The reverse of the scheme shown in Figure 1.2, “Public-Key Encryption” also works: data encrypted with a private key can also be decrypted only with the corresponding public key. This is not a suggested practice to encrypt sensitive data, however, because it means that anyone with the public key, which is by definition is made available to all, could decrypt the data. Nonetheless, private-key encryption is beneficial because it means the private key can be used to mark data with a digital signature, a significant condition for electronic commerce and other commercial applications of cryptography.

## 2.2 Key Length and Encryption Strength

Breaking an encryption algorithm is in essence finding the key to access the encrypted data in plain text. For symmetric algorithms, breaking the algorithm usually means trying to choose the key used to encrypt the text. For a public key algorithm, breaking the algorithm usually means acquiring the mutual secret information between two recipients.

One way of breaking a symmetric algorithm is to simply try every key in the full algorithm until the right key is established. In case of public key algorithms, since half of the key pair is publicly known, the other half (private key) can be derived using published, though intricate, mathematical calculations. Physically finding the key to break an algorithm is called a brute force attack.

Breaking an algorithm poses the risk of intercepting, impersonating and fraudulently verifying, private information.

The key strength of an algorithm is gotten by finding the fastest method to break the algorithm and comparing it to a brute force attack. For

symmetric keys, encryption strength is described in terms of the size or length of the keys used to carry out the encryption. Longer keys generally provide stronger encryption. Key length is measured in bits. An encryption key is considered full strength if the best-known attack to break the key is not faster than a brute force attempt to test every key possibility.

Dissimilar types of algorithms principally public key algorithms may need different key lengths to attain the identical level of encryption strength as a symmetric-key cipher. The RSA cipher can use only a subset of all probable values for a key of a given length, due to the category of the mathematical problem on which it is based. Other ciphers, such as those used for symmetric-key encryption, can use all feasible values for a key of a given length. More possible matching options mean more security. Because it is relatively trivial to break an RSA key, an RSA public-key encryption cipher must have very long key at least 1024 bits to be considered cryptographically strong. On the other hand, symmetric-key ciphers are reckoned to be equivalently strong using a much shorter key length, as little as 80 bits for most algorithms.

## 3. Residue Number System

A riddle offered in a book written by a Chinese scholar called Sun Tzu in the first century was the first documented materialization of Residue Number System (RNS) representation. The riddle is posed by the following statement:

We have somethings that the number is not known:

If this number is counted by threes, it remains 2.

If counted by fives, the remainder will be 3.

And if same number is counted by sevens, the remainder is 2.

Just how many stuffs are there?

The response is 23.

The mathematical method of obtaining the answer 23 in this riddle from the set of integers 2, 3, and 5 is what was afterward known as the Chinese Remainder Theorem (CRT). The CRT institutes an algorithmic solution of decoding the

residue encoded number back into its conventional representation. This theorem is well thought-out to be the foundation in realizing RNSs.

Residue number systems are built on the congruence relation, which can be defined as follows. Two integers  $a$  and  $b$  are said to be congruent modulo  $m$  if  $m$  divides exactly the congruence of  $a$  and  $b$ ; it is common, in mathematics tests, to write  $a \equiv b \pmod{m}$  to denote this. Thus, for example,  $11 \equiv 8 \pmod{3}$ ,  $11 \equiv 5 \pmod{3}$ ,  $11 \equiv 2 \pmod{3}$ . The number  $m$  is a modulus or base, and we shall assume that its values rule out unity, which produces only trivial congruencies

If  $Q$  and  $R$  are the quotient and remainder, correspondingly, of the integer division of  $a$  by  $m$  that is,  $a = Q.m + R$  then, by definition, we have  $a \equiv R \pmod{m}$ . The number  $R$  is said to be the residue of  $a$  with respect to  $m$ , and we shall usually denote this by  $R = |a|_m$ . The set of  $m$  smallest values,  $\{0, 1, 2, \dots, m-1\}$ , that the residue can assume is called the set of least positive residues modulo  $m$ .

Suppose we have a set,  $\{m_1, m_2, \dots, m_N\}$ , of  $N$  positive and pairwise relatively prime moduli [8]. Let  $M$  be the product of the moduli. Then every number  $X < M$  has an exceptional representation in the residue number system, which is a set of residues  $\{|X|_{m_i} : 1 \leq i \leq N\}$ . This is assumed to be proved as follows: Suppose  $X_1$  and  $X_2$  are two numbers with the same residue-set. Thus modulus  $|X_1|_{m_i} = |X_2|_{m_i}$ , and subsequently  $|X_1 - X_2|_{m_i} = 0$ . Consequently  $X_1 - X_2$  is therefore the least common multiple (LCM) of  $m_i$ . But if the  $m_i$  is relatively prime, the LCM is  $M$ , and it must be that  $X_1 - X_2$  is a multiple of  $M$ . Therefore, the set  $\{|X|_{m_i} : 1 \leq i \leq N\}$  is distinctive and may be taken as the representation of  $X$ . We shall write such a representation in the form  $|x_1, x_2, \dots, x_N|$ , where  $x_i = |X|_{m_i}$ , and we shall indicate the relationship between  $X$  and its residues by writing  $X \sim = \{x_1, x_2, \dots, x_N\}$ . The number  $M$  is called the dynamic range of the RNS, because the numbers that can be represented is  $M$ . For unsigned numbers, that range is  $[0, M-1]$ .

To make use of the properties of the RNS and carry out the processing in the residue domain, we need to be able to convert easily between the conventional binary representation and the RNS

representation. The procedure of conversion from straight representation to RNS representation is named Forward Conversion. Theoretically, this process can be done by dividing the given conventional number by all the moduli and finding the remainders of the divisions. This is the most direct way that can be applied to any general moduli-set.

The universalization arises from the known fact that division of number, that is a power of two, is corresponding to shifting the digits to the right. This property can be used to advance and simplify the forward conversion. The process of conversion from RNS to conventional representation is termed Reverse Conversion. The reverse conversion method is further problematic and presents more overhead in terms of speed and complexity. The algorithms of reverse conversion is based on Chinese Remainder Theorem (CRT) and Mixed-Radix Conversion (MRC).[4] The use of the CRT allows parallelism in the conversion process implementation.

The MRC is an inherently sequential approach. Generally, the understanding of a VLSI execution of a reverse converter is complex and costly. Executing an algorithm by means of parallel distributed arithmetic with no addition between the arithmetic blocks streamlines the overall design and lessens the complexity of the individual building blocks.

### 3.1 The Merits of RNS Representation

The importance of RNS representation can be summarized as follows [17,18]:

**High Speed:** The nonappearance of carry propagation amid the arithmetic blocks results in high speed processing. In conventional digital processors, the critical path is linked with the propagation of the carry signal to the last bit (MSB) of the arithmetic unit. By means of RNS representation, large words are programmed into small words, which outcome is critical path minimization.

**Reduced Power:** Using small arithmetic units in realizing the RNS processor reduces the switching activities in each channel. This

subsequently results in lessening the dynamic power, since the dynamic power is directly proportional to switching activities.

**Reduced Complexity:** As the RNS representation encodes large numbers into small residues, the complexity of the arithmetic units in each modulo channel is abridged. This facilitates and simplifies the overall design.

**Error Detection and Correction:** The RNS is a non-positional system with no dependence between its channels. Thus, an error in one channel does not propagate to other channels. Then, isolating the faulty residues tolerates fault tolerance and facilitates error detection and correction. In fact, the RNS has some embedded error detection and correction features described in.

#### 4. Application of Residue Number System in Public Key Cryptography

As computer arithmetic continues to advance for computation-bound systems, public-key cryptographic processors become progressively more incremental. Researchers are apt to focus their quest for advanced performance on unconventional number system representations. The possibility is not only to further boost up performance but also to investigate new cryptanalytic properties offered by such representations. Among diverse options obtainable, the ancient Residue Number System (RNS) stands out as most prominent of them all.

RNS is appropriate for applications in which addition and multiplication are the major arithmetic operations. Due to its carry-free propagation, RNS has good potential in applications where speed and power consumption is very significant. In addition, the isolation between the RNS-based system designs for public-key cryptography modulo channels facilitates error detection and correction. Residue number system applications are digital signal processing (DSP), digital image processing], RSA algorithms], communication receivers, and fault tolerance. In almost all these applications, exhaustive multiply-and-accumulate (MAC) operations are vital.

A probable application of RNS in DSP is the design of digital filters. Digital filters have diverse usages such as interpolation, decimation, equalization, noise reduction, and band splitting, carrying out the required multiplication and addition operations in the residue domain result in speeding up the system and reducing the power consumption.

Additional conceivable application of RNS in DSP is the Discrete Fourier Transform (DFT) which is a very mutual transform in various engineering applications. Of course, the main operations involved here are addition and multiplication, using RNS in implementing DFT algorithms results in faster operations due to the parallelism in the processing. Also, the carry-free property of the RNS makes it hypothetically very suitable in fault tolerant applications. The RNS has no weight information. Hence, any error in one of the residues does not distress the other modulo channels.

Furthermore, since ordering is not imperative in RNS representation, the defective residues can be discounted and corrected separately. In summary, RNS appears to be good for countless applications that are significant in modern days computing algorithms.

#### 5. Conclusion

As discussed in this paper, RNS is suitable for applications in which addition and multiplication are the main arithmetic operations. Due to its carry-free propagation property, RNS has good potential in applications where speed and power consumption is very crucial. Additionally, the isolation amongst the modulo channels simplifies error detection and correction. Most oftenly these applications require thorough multiply-and-accumulate (MAC) operations. A conceivable application of RNS in DSP is the design of digital filters. Digital filters have diverse uses such as interpolation, decimation, equalization, noise reduction, and band splitting. Carrying out the requisite multiplication and addition operations in the residue domain, results in speeding up the system and reducing the power consumption.

Another possible application of RNS in DSP is the Discrete Fourier Transform (DFT) which is a

very common transform in different engineering applications. The main procedures involved are addition and multiplication, using RNS in implementing DFT algorithms results in faster operations due to the parallelism in the processing. In addition, the carry-free property of the RNS makes it very useful in fault tolerant applications. Nowadays, the integrated circuits are compact, and full testing will no longer be possible. The RNS has no weight information. As such, any error in one of the residues will not affect the other modulo channels. Besides, since ordering is not central in RNS representation, the defective residues can be unessential and adjusted separately. In summary, RNS looks good for many applications that are imperative in modern computing algorithms.

## References

- Forouzan B. A (2008). *Networking and Data Communication (4 Edition)*, McGraw Hill Inc. New York.
- Chaitanya P. and Sree Y. R. (201) Design of New Security using Symmetric and Asymmetric Cryptography Algorithms.” *World Journal of Science and Technology*. Vol 2. Issue 10. pp. 83-88..
- Lai, X. and Massey, J. (1990) A New Block Encryption Standard.” *Proc. EUROCRYPT 90*, 389-404.
- N.S. Szabo, R.I. Tanaka, (1967) *Residue Arithmetic and Applications to Computer Technology*(Mc-Graw Hill, New-York MATH Google Scholar
- G. Bi, E.V. Jones, (1988) Fast conversion between binary and Residue Numbers. *Electron. Lett.* **24**, 1195–1197 Cross Ref Google Scholar
- National Bureau of Standards, "Data Encryption Standard." FIPS Publication #46, NTIS, Apr. 1977.
- P.V. Ananda Mohan, D.V. Poornaiah, ( 1991) Novel RNS to binary converters, in *Proceedings of IEEE ISCAS*, pp. 1541–1544 Google Scholar Ferguson, Niels; Schneier, Bruce (2003). *Practical Cryptography*. Wiley. ISBN 0-471-22357-3.
- Katz, Jon; Lindell, Y. (2007). *Introduction to Modern Cryptography*. CRC Press. ISBN 1-58488-551-3.
- Menezes, A. J.; van Oorschot, P. C.; Vanstone, Scott A. (1997). *Handbook of Applied Cryptography*. ISBN 0-8493-8523-7.
- IEEE 1363: Standard Specifications for Public-Key Cryptography
- Christof Paar, Jan Pelzl (2009) *Introduction to Public-Key Cryptography; A Textbook for Students and Practitioners* Springer.
- Stallings, William (1990). [Cryptography and Network Security: Principles and Practice](#). Prentice Hall. p. 165. ISBN 9780138690175.*
- Alfred J. Menezes, Paul C. van Oorschot, and Scott A. Vanstone (October 1996). [Digital Signatures" \(PDF\)](#). [Handbook of Applied Cryptography](#). CRC Press. ISBN 0-8493-8523-7. Retrieved 2016-11-14*
- F. J. Taylor, (1984) Residue arithmetic: A tutorial with examples,” *Computer (IEEE)*, vol. 17, no. 5, pp. 50-63,
- A. Omondi and B. Premkumar (2007) RNS: Theory and Implementation,” *Imperial College Press 2007*, ISBN 978-1-86094-866-4.
- N. Szabo and R. Tanaka, (1967) *Residue Arithmetic and Applications to Computer Technology*,” New York: McGraw Hill.
- M. A. Soderstrand, W. K. Jenkins, G. A. Jullien, and F. J. Taylor (1986) *RNS Arithmetic: Modern Applications in Digital Signal Processing*,” New York: IEEE Press.



## Communication Technology: Tool for Changing the Face of Worship in Christian Religion in Nigeria

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**Abstract.** Information and communication technology has come to stay and its influence has percolated into every fiber of the society, religion inclusive. Religion being what it is, is always reluctant to embrace change especially when it comes to what has to do with science and technology. However, it seems religion has made an exception with ICT, religious centers has embraced ICT with a remarkable open arms. Though its potential to further the propagation of religion in the country has greatly been harnessed, also it has led to some religious malady. Therefore this paper examined the introduction of ICT into Religion in Nigeria. This research work further point out the importance of the ICT to religion. This paper also investigates the effects of ICT on Religion in Nigeria. In carrying out the research, qualitative method was used and relevant materials were consulted for text analysis. Few recommendations were made which include; religion should draw a line in religious worship that ICT must not cross, so that it (ICT) may not be tempted to hijack the spiritual essence of worship.

**Keywords:** Religion, technology, worship and Information

### 1. Introduction

Before the world became a global village, religious worship, ethics and practices is been propagated through various means. The dynamism of religion and its widespread had and will continue to have an adverse effect on the lifestyle of every human. Technology is a body of knowledge devoted to creating tools, processing actions and extracting of materials. The term ‘Technology’ is wide and everyone has their own way of understanding the meaning of technology. We use technology to accomplish various tasks in our daily lives, in brief; we can describe technology as products, processes or organizations. We use technology to extend our abilities, and that makes people as the most important part of any technological system. (Ramey, 2013).

Information on its own side is that which can be communicated and understood. Therefore information Technology (IT) which is the same with Information Communication Technology

can be defined as the use of Information in order to meet human need or purpose with reference to the use of contemporary devices. Information and communication technology is a term that includes any communication device or application, encompassing radio, television, cellular phones, computer and network, hardware and software, satellite systems and so on, as well as the various services and applications associated with them such as videoconferencing and distance learning. ICT can be seen in different aspect such as ICT in education, health care, libraries, business and religion. The converging global trend of Information and Communication Technology has created opportunities that even religion is benefitting from. Also, communication technology has been accepted as a tool in this 21<sup>st</sup> century because it has left no area untouched. (Ilechukwu, 2014).

While religion, on the other hand, is difficult to define, because human belief structures are varied and complicated. Many definitions of religion have been attempted but many fall foul of being too narrow, or too wide. It has proven problematic to come to a reasonable definition which describes the varieties of religion found across the East and West, both old and new. Many people have given up even trying to define religion coherently (Crabtree, 2016). Nevertheless, scholars have attempted to define religion. Two scholarly definitions is considered for this paper. Jemiriye (2006) defined religion as a system of faith, belief and worship. Whitehead also defined religion as what an individual does with his own solitariness. Here, religion is what a man does in his time of meditation or what a man does in his spare time. With these definitions it could clearly be deduced that worship is an imperative ingredient in religion. It is a means to express religious experience.

The introduction of ICT and the vast uses of the internet has led so many churches to using communication technology to enhance and promote worship, fellowship, pastoral care, education, mission and community outreach, evangelism and communications. Its relevant benefits make it appropriate for all the ministries. Religion now finds it difficult in this

age not to be ICT compliant. Ukodie (2004) further acceded to this fact that, information and communication technology has proven itself and it has been accepted as engine of 21<sup>st</sup> century and beyond. The rapid rate at which ICT have evolved since mid 20th century, the convergence phenomenon in which all existing technology have been harmonized by ICT, in addition to their pervasiveness and intensiveness in all areas of human activities, gives ICT a leading edge in development and globalization. Therefore, since house of worship is part of the information and communication community, it is necessary to investigate how information communication technology is used in the church and its impact on religious worship in Nigeria.

## 2. Overview OF ICT in Nigeria

The history of ICT originates from humble beginnings, which include the abacus. The abacus is thought to have been originally invented 3000 years before the birth of Christ. But today, it has evolved into a concept that is generally accepted globally. According to Adamkolo (2014), the Federal Executive Council approved the National Information Technology Policy in March 2001 and the implementation started in April with the establishment of the National Information Technology Development Agency (NITDA), in charge of the mission to make Nigeria an ICT-capable country in Africa and a key player in the Information Society, while using ICT as a catalyst for sustainable development and global competitiveness (ICT4D Nigeria Annual Report, 2007). In the new policy draft document 2012, the mission statements of the ICT policy is to fully integrate Information and Communication Technology into the socioeconomic development of Nigeria in order to transform the country into a knowledge-based economy. The increasing globalization driven by ICT makes it imperative for Nigeria as an emerging market to irreversibly consider the application and promotion of ICT strategy to facilitate its rapid growth and development. This will involve the development of a vibrant ICT sector to drive and expand the national production frontiers in agriculture, manufacturing and service sectors. It would also require the application of the new

knowledge to drive other soft sectors: governance, entertainments, public services, media sector, tourism and religion. Communication technology may not be the remedy for hunger, poverty, diseases, illiteracy, and every crisis associated with religion, but the right information at the right time, however, can bring about sustainable development when used appropriately with the maximum participation of everyone. The intrinsic values of ICT lie not in easing communication and information but rather in stimulating growth and development. (Olubamise, 2007).

### 3. ICT and Christian Religion

One of the unique features of the Christian society is the way in which it combines the immutable and the flexible. It is a society that strictly adheres firmly to its fixed principles, but at the same time encourages its followers adopt those things which are beneficial to the society. The Church's interest in technology is an expression of her longstanding curiosity about the media and communication technology, seeing the media as an outcome of the historical scientific process by which humankind "advances further and further in the discovery of the resources and values contained in the whole of creation. Thus the Church has taken a fundamentally positive approach to the media. Religion sees the media as a gift which unites and connects the Christians globally in accordance with the providential design, unite men in brotherhood and so help them to cooperate with his plan for their salvation (Vatican, 2002).

In an effort to evangelize the word of God and Christian faith to a growing population of Christians both older and younger ones, churches are turning to technology to create the perfect approach while maintaining Christian values.

However, the interplay between religion and technology is not always adversarial. There are many ways in which ICT actually enhances religious practices, mainly through the expansion and creation of religious communities. Technology cheapens religious

practices when it breaks communal bonds. While this dual natured relationship to religion can be seen in many technologies, one of the clearest examples of how technology can both support and erode religious techniques is internet social networking. (Verschoor-Kirss, 2012).

### 4. Worship in Christian Religion

Worship is an act of religious devotion usually directed towards a deity. An act of worship may be performed individually, in an informal or formal group, or by a designated leader. Christian worship involves praising God in music and speech, readings from scripture, prayers of various sorts, a sermon, and various holy ceremonies (often called sacraments) such as the Eucharist.

While worship is often thought of only as services in which Christians come together in a group, individual Christians can worship God on their own, and in any place (BBC, 2009).

Different churches, even within the same denomination, will use very different styles of worship. Some will be elaborate, with a choir singing difficult music, others will hand the music over to the congregation, who sing simpler hymns or worship songs. Some churches leave much of the action to the minister, while others encourage great congregational participation. (Of course all churches encourage the full participation of the congregation in praising God with their heart, mind, and soul, but some churches give the congregation more physical participation.)

Another picture of Christian worship is showing reverence and gratitude by bowing down before God, as in this passage from Nehemiah:

"Ezra praised the LORD, the great God; and all the people lifted their hands and responded, 'Amen! Amen!' Then they bowed down and worshiped the LORD with their faces to the ground" (*Nehemiah 8:6*).

Both singing and bowing down are acts of worship, but they are only part of the picture. Christian worship is so much more than that!

Christian worship begins with discovering and admitting what we have been worshipping in our lives. All of us worship something, whether we know it or not. We may not physically bow

down to it, or offer it songs of praise and adoration, but whatever we devote most of our time and attention to is often what we worship. Merriam-webster definition of worship: "Reverence offered a divine being or supernatural power; also: an act of expressing such reverence; a form of religious practice with its creed and ritual; extravagant respect or admiration for or devotion to an object of esteem." (Dictionary, 1999). Seen in that light, it's easy to see that we can worship God, we can worship money, or power, or a rock star, or we can even worship a lifestyle. Worship is more than an act of reverence. It is an attitude of the heart. Christian worship is clearly of interest to God. He knows we have an inner need to worship, so He asks us to worship Him. He, being God, can handle the weight of being worshiped; humans cannot. People who are worshiped by others can often be influenced to think more highly of themselves than they ought.

### **5. ICT and Worship In Christian Religion in Nigeria**

Majority of the worship centers in Nigeria are now being built with technology in mind or have been retrofitted with technology in the past years. There are so many churches employing new technology in worship in this age. The use of Wi-Fi and social media in some form has become an acceptable means to reach out to the congregation. In some churches, people are allowed to tweet the pastor a question and he would read the question and address it as a part of his message. Even in the concerts these churches organize, the performers now use a tablet device to cast the music being performed (Bolu, 2012).

The Apostle Paul wrote long scripts by hand, sent them across hundreds of miles of water or desert, all just to hope that they reached the hands of church elders. But now pastors can simply speak from the comfort of their offices and instantaneously stream the message online to thousands of homes. There's no risk of it getting lost and no possibility that the message will come too late to be helpful.

However, before the advent of projectors, computers, internet and the likes, the most popular devices used in worship are our audio systems, microphones, soundboard, processor and improved monitor systems, though these gadget are provincial and not sophisticated. Nevertheless, they do serve the purpose they are meant to serve. They pose less challenge neither do they distract worshippers during worship. Communication technology now plays an important role in the Sunday worship. Most men of God now have their Scriptures and other religious materials on the phone or tablet. Some often use computer to research and prepare lessons that will be taught on Sundays. Meanwhile some church leaders have been encouraging members to use digital versions of religious materials rather than costly and environmentally impactful paper books and magazines. Most weekends, church members now watch the proceedings in their homes through streaming video on the television. According to Dawson (2015), a key challenge associated with all this is that the same devices that is been used for these religious activities on Sundays are the ones that carry the day-to-day distractions like email, sports scores, social networks and all the rest. This causes distractions when interrupted by notifications and messages from different social media platform. It takes away the attention from the worship, which is the sole purpose of attending the service. Members in most churches now use You Version to look up the Bible texts on their various smart phones. They can check out different translations from what's projected on the screen and from the printed Bibles. Also the idea of tweeting during service has made worship and religion lose its essence. Wi-Fi setup for the congregation is for a purpose which is totally different from worship, even though it is always available during worship. Furthermore, the enhancement of worship experience is through "sound" amplification. The volume, clarity and provision of sound encapsulate a good worship which cannot be done without quality technology device. Technology in churches today allows more people to participate in worship, not fewer people. An example of this is the display of song lyrics which will be projected for all to see, so that the whole

congregation can participate, which is a brilliant idea for increasing participation. This new world of technology where cell phones, Mp3 players, computers and internet are an integral part of our society and are regular attachments, the church can should find a way to use them in positive ways to engage people in ways they understand. Technology has changed the worship experience of the congregation. The integration of multi-media equipment such as projectors, giant LCD screens, High Definition Cameras, Digital Sound Recording systems – powered Sound Speakers, LCD Digital Podiums which dramatize and enhances sermons, etc. The capability of these devices mentioned can manipulate the atmosphere from sombre (spiritual) to excitement or vice versa. It is presumed that “the larger a church intends to grow, the greater it has to invest in the technology that enhances church service to ensure its members have a pleasant experience in every worship service”

Churches are integrating video mainstream, mobile devices and other forms of technology in order to reach out to generations that don't remember a time without modern technology. Churches, like Winners chapel, Gospel faith mission and most of the new generation churches are recreating worship with technology to reach a larger group of young Christians.

The reality is that younger generations and even the older are now comfortable accessing their information through technology, whether it is on a mobile device, video screen or tablet. (Howard, 2016). They prefer this interactive experience because as they grow up, technology evolves. Churches can now reach a greater number of members and relay information or provide support, like prayer, through technology. An example is the Halleluyah challenge which is been done through the social media. Many churches, communities and prayer groups use the free application called Prayer Stream hosted by Christian Care Ministry, to create a personalized prayer feed. Members with a profile can add a prayer request, pledge to pray, and reach out to one another for religious support and guidance.

The traditional way of worship have been focused on auditory processing, reaching the

part of the congregation that is able to retain information and the word of God by hearing it; however, a large portion of the population is now used to accessing information through visual processing. (Care, 2013). Integrating video and visual stimulation to support the Word of God during a worship service which allows a greater number of members of the congregation to fully understand the message. Since the last two decades, a lot of dynamic changes have taken place in the areas of religion, culture, economy and politics. ICT is being envisaged as possessing the potential to transform the society and impact positively on the lives of people in general.

## 6. The Effect of ICT on Religion

The pulpit has become the focal point of sharing information, so much so that it is inevitable to think around the effects of ICT on religion as a whole. The improvement in technology has changed the strategy of managing church affairs such that more church leaders have joined and are joining social media such as Facebook, Twitter, Instagram, Pinterest, Google Plus etc. These platforms are used to promote the prophetic message that churches have to offer. Frederick Ferre believes that technology stands for all practical implementations of intelligence. He talks about technology as matter and activities, beliefs, and attitudes. In other words, technology can be discussed in terms of tangible things as well as intangible belief systems, attitudes and ways of thinking (Ferre 1991; 1995). According to Dale (2002) Technology has given Christianity a voice to reach a world-wide audience. Historically there have been advances for Christianity when there have been advances in technology. Not all Christian groups have reacted to it as have the Amish. In many cases the Church has been one of the first entities to adopt or profit from technology. The Pax Romana that existed at the time of Christ played a large role in the spread of the gospel. Technology that created good roads for transportation, that bolstered the strongest army in the world to enforce relatively peaceful times, and stabilized governments for common laws, common language, and common culture allowed a small group of Christians to become a large

following in a single generation”. Even in Islam, one of the unique features of the Islamic society is the way in which it combines the immutable and the flexible. It is a society that strictly adheres firmly to its fixed principles, but at the same time encourages its followers adopt those things which are beneficial to the society. The Messenger of Allah (SAW) is reported to have said: “Wisdom is the lost property of the believer, wherever he finds it, he has more right to it.” In Islam all beneficial new developments in the fields of science and cultural achievements should be adopted, if they are not already present, and efforts should be made to bring them to the Muslim society, develop them and perfect them. This is a communal obligation (fard kifaya), as the Muslim scholars stated, and it requires paying attention to scientific research and allocating large sums of money to it. Those who are unfamiliar with the Qur’an might, be questioning themselves about the relationship between the Qur’an, which is a book, revealed in more than 1433 years ago and Information and Communication Technology, which is an invention of this century. Al-Qur’an is the book of knowledge and the first sources of Islamic law, which contains general principles applicable for all times and places (Usman, 2013). Therefore, information and communication technology can have a positive and negative impact on religion. Even though religion can no longer impact successfully without being technologically competent and ICT compliant, is it then acceptable that the essence of religious worship be forgotten due to the rise in technology?

According to Sims (2014), Technology has been good for religion in a number of ways:

- It has greatly magnified the voice of those preaching the gospel. Instead of reaching hundreds or even thousands when preaching a sermon, a pastor now has a possible audience in the millions.
- It has enriched the message of God by providing information to a large number of people in a shorter amount of time.
- It has increased the number of channels of distribution of the gospel.

- It has provided help for the encouragement, the strengthening, and edification of the saints through technology tools and discipleship material.
- It allows religion to administer grace to a world that is distracted and burdened, by using various tools.
- It provides security and safety which has become a major concern for anybody participating in a private or public gathering due to global terrorism threats against human life. Most churches are now been robbed by thieves hence the deployment of Closed Circuit Television (CCTV), Hackett metal detectors, electrical fencing and wall fences have been extended from Banks to the Church and mosques. After all, it is a gathering of lost souls seeking the forgiveness of sins.

Churches can use specific software and databases to process and store membership records. Storing membership data, in an electronic and organized manner, can help church leaders become more acquainted with their members and this trend can produce positive relationships between members and the clergy as churches can send customized birthday messages, anniversary wishes, upcoming events, devotion material, tailored prophetic prayers, etc. A church database can also help to easily identify members with special needs such as health & marital, jobs, housing, financial, and educational, relationships issues.

Although, technology has bad as well as good effects, it has also develop a dynamism of its own. It has been observed that technology has displaced the face of religious worship, to our great harm, especially in the way that worship and church work is conducted. Borgmann has described our culture quite well in his book *Power Failure* (Borgmann, 2003) He believes that technology is the defining element of our society. It has produced a culture of self-orientation that is designed to procure a comfortable and individualistic lifestyle. Science and technology are the standards against which all claims are evaluated. Technology, by its very

nature, is value neutral or indifferent toward Christianity. Therefore, many people feel free to dismiss Christianity. ICT also provides a medium for observing and modeling different forms of behavior and a plethora of viewpoints and value systems. In the past, children learn appropriate behavior from those people who were close to them in proximity, such as parents, teachers, pastors, and leaders in the community. But today they learn from the internet, music, movies, and television. Indeed religion has been greatly affected by these cultural change. Most religion evaluates themselves by the same standards as those used by the culture of technology. (Wandner, 2004). Because technology provides immediate information and feedback, religion have begun to operate on a fad or poll basis. Whatever the latest fad is or whatever the latest trend predicted by the polls happens to be, that is where religion is going. Because our technical driven culture requires efficiency, convenience, and entertainment, then the religion must provide that. Because religion has tried to meet the standards of technology in order to remain relevant to society and culture, it has given technology the right to declare it irrelevant. Religion, desperate to succeed by the standards of technology, has become more and more acculturated.

## 7. Conclusion

ICT is a mere tool for all who use them. It can promote productivity and strengthen the human solidarity. It serves as the common good in innovative ways, and at the same time, it can be the powerful agent of materialism and consumerism which feeds a pragmatic approach to life. Therefore, ICT thrives because the society accepted it and it is our responsibility to make use of it wisely and not allow our vision to be clouded when it comes to spiritual matters.

## 8. Recommendations

In view of the above conceptual clarifications and discussions, this research work proposes the following recommendations:

- Religion should draw a line in religious worship that ICT must not cross. For

religious activities in worship to still maintain its essence and relevance, there are aspect of worship that should not be influenced by Technology e.g prayer. Tithe and offering. Religion need to quit letting technology define them or set the standards for them.

- Church leaders should make conscious effort to positively harness ICT towards the effective and acceptable worship. Religion should devise a means whereby ICT will not be tempted to hijack the essence of religious worship.
- Religion adherents should be given orientation from time to time on how ICT, if not properly used, could cheapen the spirituality of worship. Churches need to unplug from high and sophisticated technology periodically. It should propagate messages without the use of television or cell phones or computers or radio.
- Worship should be observed without the total aid of technology.

## References

- BBC. (2009, June 23). An introduction to the different forms of Christian worship and its origins in Jewish worship. Retrieved September 3, 2017, from Christian Worship:  
<http://www.bbc.co.uk/religion/religions/christianity/ritesrituals/worship.shtml>
- Care, C. (2013, January 10). REACHING OUT TO THE YOUTH- ONE CHURCH USES TECHNOLOGY DURING WORSHIP. Retrieved November 2, 2017
- Christian Worship. (2003, Febuary 20). Retrieved October 23, 2017, from All About God:  
<https://www.allaboutgod.com/christian-worship.htm#>
- Contributor, G. (2016, June 21). The Church and ICT: Should it be perceived as a godsend or otherwise? Retrieved October 15, 2017, from Manic:  
<http://www.manic.co.zm/church-and-ict-perceptions/>

- Crabtree, V. (2016, March 12). What is Religion? How Do You Define Religion? Retrieved November 3, 2017, from The Human Truth Foundation: [http://www.humanreligions.info/what\\_is\\_religion.html](http://www.humanreligions.info/what_is_religion.html)
- D, M. E. (2016). *The Social Christian*. Chicago: Digital Tech and Social Media Highlights from 2016.
- DAWSON, J. (2015, October 2). I've often wished there was an easier way to switch my devices into a sort of "Sabbath mode." Retrieved November 2, 2017, from Technology and Worship -- And Worshipping Technology: <https://www.recode.net/2015/10/2/11619172/technology-and-worship-and-technology-worship>
- Dictionary, M. W. (1999). Springfield, M.A. (Merriam-Webster Incorporated). Retrieved 2017, from <http://www.merriam-webster.com>
- Harrison, C. (2012). Understanding the relationship between religion online and offline. *Journal of the American Academy of Religion*, 87-114.
- Howard, M. (2016). *Social Christian*. Chicago: Digital Tech and Social Highlights From 2016.
- Ilechukwu, L. C. (2014). Application and Role of ICT in Religious Education. *Research on Humanities and Social Sciences*, 1-4.
- Olubamise, B. (2007). *NIGERIA : ICT4D Annual Review*. Lagos: Jidaw Systems.
- Ramey, K. (2013, December 12). Retrieved November 6, 2017
- Sims, D. B. (2014, April 12). The Effect of Technology on Christianity: Blessing or Curse? . Retrieved October 4, 2017, from Dallas Baptist University: <http://www3.dbu.edu/Naugle/pdf/The%20Effect%20of%20Technology%20on%20Christianity2.pdf>
- T.F, J. (2006, August 11). INTRODUCTION TO THE STUDY OF AFRICAN TRADITIONAL RELIGION. Retrieved October 17, 2017, from Ekiti State University Publications: <http://tfjemiriye.org/atrintro.htm>
- Usman, A. Y. (2013). USING INFORMATION AND COMMUNICATION TECHNOLOGY. *Journal of Teaching and Education*, 353-368.
- Vatican. (2002, February 28). THE CHURCH AND INTERNET. Retrieved September 15, 2017, from PONTIFICAL COUNCIL FOR SOCIAL COMMUNICATIONS: [http://www.vatican.va/roman\\_curia/pontifical\\_councils/pccs/documents/rc\\_pc\\_pccs\\_doc\\_20020228\\_church-internet\\_en.html](http://www.vatican.va/roman_curia/pontifical_councils/pccs/documents/rc_pc_pccs_doc_20020228_church-internet_en.html)
- Verschoor-Kirss, A. (2012). *Journal of Religion and Society* Volume 14, 1-8.
- Wandner, L. D. (2004). USING VIRTUAL HUMAN TECHNOLOGY TO PROVIDE IMMEDIATE FEEDBACK ABOUT PARTICIPANTS' USE OF DEMOGRAPHIC CUES AND KNOWLEDGE OF THEIR CUE USE. *Journal of Pain*, 1-10.

## Demographic Characteristics and Differential Item Functioning of Economics Achievement Test in Plateau State, Nigeria

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**Abstract.** The study investigated the demographic characteristics of students and differential item functioning of economics achievement test items for SSII students in Plateau State, Nigeria. The motivation of the study was the persistent poor performance of students in external examinations in the subject which could be attributed to the quality of test items used by teachers in assessing students' achievement in the subject. Again, some of the test items used in assessing students function differentially based on students' gender, school location and school type, which have resulted in students with the same ability performing differently. Furthermore, the teachers use the same test items to measure secondary issues above primary issues. Again there are no existing developed tests in economics in the study area that can be used in assessing students in the subject within the study area. The research design used for the study was instrumentation and cross-sectional survey research designs. The population of the study consisted of all the 23712 SS2 economics students in Plateau State whereby a sample of 1454 SSII students were selected and used for the study. Multistage sampling technique was used to ensure that adequate number of students were selected from each zone, local government, schools and students. A sample of 134 schools made up of 74 private schools and 60 public schools with 68 from rural and 66 from urban; 720 males and

734 females were used for the study. The instrument for data collection was an Economics Achievement Test (EAT) developed and calibrated by the researcher. One research question and three hypotheses were formulated to guide the study. The research question was answered using the Kaiser-Meyer Olkim (kmo) and scree plot while the hypotheses were tested using structural equation modelling of the IRTPRO. The validity of the instrument was established using a test blue print and experts' judgments. The reliability of the instrument was estimated using Omega reliability procedure and coefficient of 0.83 was obtained for the EAT items. The results of the analysis revealed that some of the items functioned differently for the testees based on gender, school type and school location. It was recommended among others that teachers should determine the differential functioning of test items before using the tests for conducting continuous assessments on students.

**Keywords:** Demographic characteristics, Differential item functioning.

### 1. Introduction

Differential item functioning is one of the test development process that is used in test development to ensure that items in a test are free from bias. It is usually carried out to

determine if examinees of equal ability from different background such as students' gender, school type and school location have an unequal probability of answering an item correctly (Obinne & Amali, 2013) it is a condition where items in a test function differently for respondent with the same level of ability who are from different background. For example one could investigate whether a test functions differentially for male/female students, urban/rural schools and private/public schools. Hence, test-fairness is a moral imperative for both the makers and users of a test to make sure that test items do not function differently for test takers. However, studies have shown that some test items that functioned differently for respondents have been used in determining the ability of testees at different level.

### 1.1 Research Question

What are the dimensions underlying students' performance in the Economics Achievement Test?

### 1.2 Hypotheses

- The items of the economics achievement test will not functioned differentially based on students gender in Plateau State
- The items of the economics achievement test will not functioned differentially based on school location in Plateau State
- The items of the economics achievement test will not functioned differentially due to school type in Plateau State

## 2. Literature Review

### 2.1 Students Gender and Differential Item Functioning

Gender is a set of characteristics that distinguished between male and female (Bolarinwa, Hammed & Barra, 2013). It is the biological and psychological characteristics that defined men and women. Okon and Archibong (2015) observed that it is a social attitude and opportunities associated with being male and female concerns about differential item functioning with respect to male and female

have generated a considerable interest in the field of educational testing over the years. Differential item functioning have been among the contemporary issues in current academic debate all over the world. Differences in the way test items functioned based on gender is likely to contribute disparities in the allocation of cognitive roles in the world.

Similarly different studies have been conducted to investigate the presence or absence of DIF in test items with regards to gender with diverse findings. For instance, Ogbebor and Onuka (2013) in their study found that some NECO test items functioned differently based on students gender. Also Enetairo and Akoredo (2010) in their study found that some economics test items used by NECO in 2013 functioned differently based on students' gender. Furthermore Obinne and Amali (2014) found that biology questions paper used by West African Examination Council NECO functioned differently in favour of males.

On the contrary, Khairani and Nordin (2011) found that there was no evidence of DIF in test items that were used in assessing 14-year old students in mathematics. From the review, it is evident that some examinations contain items that functioned differentially against students' gender thereby enabling the items to measure different things for testees with same ability. However, most of the studies used WAEC and NECO questions papers or existing instrument while the present study seeks to develop an economics achievement test after which DIF was detected so as to see whether some items functioned differently for testees based on male or female. Hence, the need to conduct the present study.

### 2.2 School Type and Differential Item Functioning

Ownership of schools in Nigeria could be viewed from two categories of ownership of schools which could be public ownership and private ownership. According to Oderinde (2016) and Olubunmi (2016) schools that are established and run by government are called public schools while those established by

individuals, organisations and missionary bodies are referred to as private schools. Public schools are schools that are controlled by the federal, state or local government, while individual groups or missionary institutions control private schools. Researchers have not come to consensus over the way test items function in schools based on school type. While some found that differential items functioning exist, in test items that are developed for the purpose of assessment. Others found that there was no evidence of DIF in test items based on school type, for example Abedalaziz (2009) in his study in mathematics found that mathematics test items functioned differentially based on school type in favour of private schools. Agbebor and Onuka (2013) in their study in economics found that 10 items out of the 60 items that were used by NECO functioning differently based on school type.

Similarly, Nhuan (2016) in his study, found that history achievement test items used by National Examination Council Service NECS showed evidence of item bias in favour of school type. Again Ebesine (2016) in his study on culture and differential item functioning in National Council Senior School Certificate Mathematics Multiple-choice test items found that NECO 2012 multiple-choice test items function differentially based on school type in favour of public schools. Hence, the examination test items contain items that measures different things for testees of the same ability, but came from private and public schools. Furthermore Ageigbe and Afolabi (2014) in their study found that both mathematics and English test items had items that functioned differentially for respondents based on school type of public and private schools.

From the foregoing it is evident that test items that function differently based on school type have been used in assessing students in schools, hence, the need to investigate if the items in the EAT functioned differently based on school type and hence the need for the present study.

### **2.3 School Location and Differential Item Functioning**

School location refers to where a school is sited. While some schools are sited in towns, and cities, others are sited in rural areas or villages. Esomonu (2002) states that urban areas are those with high population density, high variety and beautiful environment while rural areas are those with low population and subsistence mode of life. Hence, parents in rural areas are poor and less exposed than those in urban areas. Madu (2012) found that test items functioned differently for candidates from rural and urban schools. Therefore students of the same ability level performed differently in a test while Khairani and Nordin (2011) found that differential item functioning does not exist in a test that was used in assessing students. Ageigbe and Afolabi (2014) and Obesine (2016) in their separate studies found that test items developed by WAEC and NECO in mathematics contain items that functioned differently for students who had the same ability level but came from different schools classified by school location of urban and rural.

Again studies by Amuche and Fan (2016) on assessment of item bias using differential item functioning techniques, found that 10 items functional differentially for students who were of the same ability but are classified based on school location. While some researchers found that some tests items functioned differently for students from urban and rural schools, others found that DIF does not exist based on school location. From the foregoing, there is the need for teachers to investigate if test items used in conducting continuous assessment of students contain items that functioned differentially for testees who are of the same ability but classified by school location of urban and rural schools.

The review of literature shows that most of the studies that were conducted were in mathematics, English language and biology while the present study is in economics. Furthermore, the studies were conducted in Enugu State, Delta State and Taraba State while the present is in Plateau State. Similarly, most of the studies used WAEC and NECO examination papers while the present study developed and calibrated the Economics Achievement Test

(EAT) and therefore the need for the present study.

Available evidence from the review shows that some examination items that have been used in examining students have been found to be bias in favour of either male or female, private and public schools and urban and rural schools which have violate the principles of test fairness and therefore this study set out to investigate if the economics achievement test (EAT) contain items that are bias based on students demographic characteristics. The broad question to this study therefore is; to what extend do the test items functioned differently across the different subgroup classified by gender, school type and school location.

### 3. Methodology

The study used instrumentation and cross-sectional survey research designs. Instrumentation research design refers to the tool or means by which an investigator attempt to measure the variables or items of interest in a data collection process. It was used in developing and certifying the validity and reliability of the economics achievement test. Cross-sectional survey requires that data are collected once at a particular time from a sample for the purpose of describing the population using the sample at that particular time. Cross-sectional survey design was applied in collecting data using the economics achievement test from the sample schools based on subgroups of male, female, urban/rural and private/public schools. The designs were used because the study aims at development and calibration of an economics

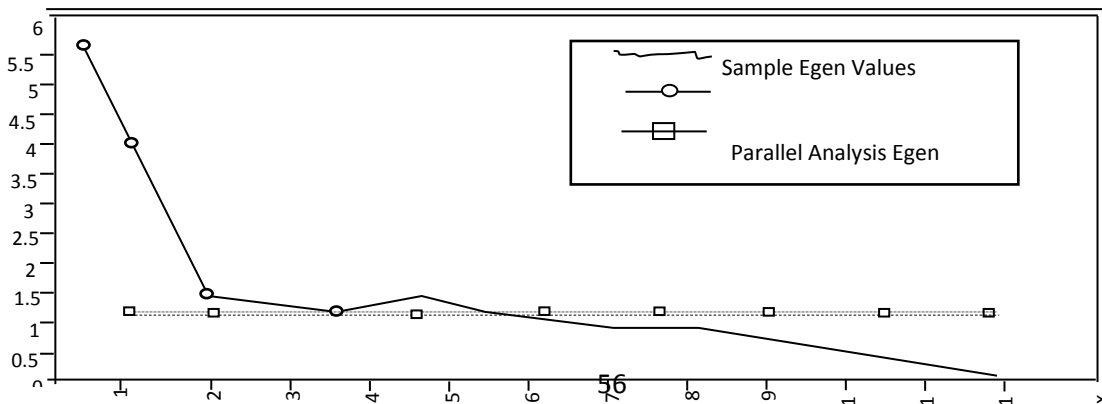
achievement test. The result obtained was generalized on the entire SSII students in the study area.

The population of the study consisted of all the 23712 SSII students in Plateau State made up of male and females, urban/rural and private/public schools while a sample of 1454 SSII students made up of 720 males and 734 females, 729 students drawn from urban and 725 from rural schools were used. The decision to use 1454 as a sample study is because adequate sample for item-response theory should not be less than 1000. Multistage sampling and proportional stratified sampling were used for the study. Multistage and proportional stratified samplings are sampling method in which different strata in a population are identified and which the number of elements are drawn from each strata proportionate to the relative number of elements in each stratum (Nwana, 2007). The instrument used for data collection was the economics achievement test developed and calibrated by the researcher.

The content validity of the EAT was established using table of specifications and the economic curriculum of SSII the validity of the instrument was further established by subjecting the instrument to expert judgment from economics education and research, measurement and evaluation. The reliability of the instrument was established using omega reliability procedure. Descriptive statistics was used in answering the research questions and structural equation modelling was used to test the hypotheses that were formulated to guide the study at 0.05 level of significance.

**Research Question One:** What are the dimensions underlying students’ performance in the economics achievement test in Plateau State

-axis



**Figure 1: Result of Parallel Analysis of the Dichotomously Scored EAT Items**

Figure 1 shows the results of the parallel analysis of the EAT items. From the Figure, it show that the EAT had three component within the sharp descent before Eigen values trail off. This result shows that there were three dimensions or trait underlying the dichotomously scored EAT items, therefore three dimension was used to calibrate the test items.

**Hypotheses**

**Hypothesis One**

The items of the EAT do not function differentially based on students’ gender in Plateau State.

**Table 1: Results of DIF Assessment of the EAT Items based on Students’ Gender**

Item		Estimate	S.E	Est./S.E	P-Value	Comment
1	ON					
	GEN	0.115	0.112	1.028	0.304	No DIF
2	ON					
	GEN	0.106	0.116	0.914	0.361	No DIF
3	ON					
	GEN	-0.003	0.124	0.024	0.981	No DIF
4	ON					
	GEN	-0.197	0.118	-1.677	0.094	No DIF
5	ON					
	GEN	-0.015	0.118	-0.127	0.899	No DIF
6	ON					
	GEN	0.079	0.114	0.699	0.485	No DIF
7	ON					
	GEN	-0.063	0.119	0.526	0.599	No DIF
8	ON					
	GEN	-0.088	0.120	0.731	0.465	No DIF
9	ON					
	GEN	-0.187	0.121	-1.549	0.121	No DIF
10	ON					
	GEN	0.104	0.118	0.847	0.397	No DIF
11	ON					
	GEN	0.067	0.127	0.53	0.596	No DIF
12	ON					
	GEN	0.162	0.135	1.20	0.23	No DIF
13	ON					
	GEN	0.241	0.126	1.917	0.055	No DIF
14	ON					
	GEN	-0.028	0.121	-0.232	0.817	No DIF
15	ON					
	GEN	-0.003	0.135	-0.019	0.985	No DIF
	ON					

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16	GEN ON	0.128	0.129	0.995	0.320	No DIF
17	GEN ON	-0.074	0.119	-0.625	0.532	No DIF
18	GEN ON	0.062	0.123	0.503	0.615	No DIF
19	GEN ON	-0.084	0.118	-0.71	0.477	No DIF
20	GEN ON	0.068	0.127	0.534	0.593	No DIF
21	GEN ON	-0.143	0.122	-1.166	0.244	No DIF

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Item		Estimate	S.E	Est./S.E	P-Value	Comment
22	GEN ON	-0.082	0.117	-0.702	0.483	No DIF
23	GEN ON	-0.069	0.124	-0.555	0.579	No DIF
24	GEN ON	0.078	0.118	0.661	0.509	No DIF
25	GEN ON	-0.16	0.12	-1.335	0.182	No DIF
26	GEN ON	0.189	0.13	1.458	0.145	No DIF
27	GEN ON	-0.203	0.114	-1.783	0.075	No DIF
28	GEN ON	0.132	0.121	1.091	0.275	No DIF
29	GEN ON	-0.003	0.118	-0.028	0.977	No DIF
30	GEN ON	-0.088	0.114	-0.77	0.441	No DIF
31	GEN ON	0.075	0.117	0.644	0.52	No DIF
32	GEN ON	-0.042	0.123	-0.341	0.733	No DIF
33	GEN ON	-0.064	0.121	-0.534	0.593	No DIF
34	GEN ON	0.111	0.117	0.942	0.346	No DIF
35	GEN ON	-0.014	0.115	-0.126	0.9	No DIF

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36	GEN	-0.274	0.128	-2.135	0.033	DIF
	ON					
37	GEN	-0.234	0.116	-2.019	0.043	DIF
	ON					
38	GEN	0.011	0.127	0.088	0.93	No DIF
	ON					
39	GEN	0.098	0.128	0.763	0.446	No DIF
	ON					
40	GEN	0.071	0.114	0.617	0.537	No DIF
	ON					
41	GEN	0.122	0.114	1.069	0.285	No DIF
	ON					
42	GEN	0.125	0.118	1.055	0.292	No DIF
	ON					
43	GEN	-0.047	0.115	-0.406	0.685	No DIF
	ON					
44	GEN	-0.026	0.116	-0.222	0.824	No DIF
	ON					
Item		Estimate	S.E	Est./S.E	P-Value	Comment
	ON					
45	GEN	0.113	0.123	0.919	0.358	No DIF
	ON					
46	GEN	0.017	0.115	0.153	0.879	No DIF
	ON					
47	GEN	-0.107	0.113	-0.948	0.343	No DIF
	ON					
48	GEN	0.102	0.114	0.892	0.373	No DIF
	ON					
49	GEN	-0.082	0.124	-0.663	0.507	No DIF
	ON					
50	GEN	0.101	0.118	0.854	0.393	No DIF
	ON					
51	GEN	-0.016	0.125	-0.131	0.896	No DIF
	ON					
52	GEN	-0.163	0.139	-1.17	0.242	No DIF
	ON					
53	GEN	-0.003	0.12	-0.027	0.978	No DIF
	ON					
54	GEN	-0.025	0.114	-0.219	0.827	No DIF
	ON					
55	GEN	0.178	0.115	1.55	0.121	No DIF
	ON					

56	GEN	-0.003	0.129	-0.022	0.983	No DIF
	ON					
57	GEN	-0.121	0.124	-0.979	0.328	No DIF
	ON					
58	GEN	0.129	0.135	0.956	0.339	No DIF
	ON					
59	GEN	-0.098	0.119	-0.821	0.412	No DIF
	ON					
60	GEN	0.054	0.118	0.457	0.647	No DIF
	ON					
61	GEN	-0.045	0.149	-0.302	0.763	No DIF
	ON					
62	GEN	0.13	0.12	1.08	0.28	No DIF
	ON					
63	GEN	0.03	0.116	0.255	0.799	No DIF
	ON					
64	GEN	-0.068	0.123	-0.549	0.583	No DIF
	ON					
65	GEN	-0.237	0.126	-1.874	0.061	No DIF
	ON					

The results of the analysis in Table 1 shows the assessment of the EAT. Structural equation modeling (SEM) with covariate was used. The analysis was done using MPLUS 7.4. The results show that item 36, 37 showed evidence of differential item functioning while there was no direct effect of the covariate on the remaining items which shows that the items did not display DIF at 0.05 level of significant. Hence, the two items that shows evidence of DIF were removed from the test.

**Hypothesis Two:** The items of the EAT do not functioned differentially for candidates based on secondary schools location in Plateau State.

**Table 2: Results of DIF Assessment of the EAT Items Based on School Location**

Item		Estimate	S.E	Est./S.E	P-Value	Comment
	ON					
1	LOC	0.672	0.116	5.798	0.542	No DIF
	ON					
2	LOC	0.026	0.118	0.219	0.827	No DIF
	ON					
3	LOC	0.074	0.126	0.589	0.556	No DIF
	ON					
4	LOC	-0.071	0.119	-0.597	0.55	No DIF
	ON					

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5	LOC	-0.184	0.119	-1.55	0.121	No DIF
	ON					
6	LOC	0.087	0.116	0.749	0.454	No DIF
	ON					
7	LOC	0.179	0.122	1.462	0.144	No DIF
	ON					
8	LOC	-0.184	0.121	-1.517	0.129	No DIF
	ON					
9	LOC	-0.053	0.122	-0.431	0.666	No DIF
	ON					
10	LOC	0.003	0.119	0.028	0.978	No DIF
	ON					
11	LOC	0.158	0.13	1.212	0.226	No DIF
	ON					
12	LOC	-0.003	0.137	-0.019	0.985	No DIF
	ON					
13	LOC	0.294	0.13	2.259	0.524	No DIF
	ON					
14	LOC	-0.055	0.123	-0.448	0.654	No DIF
	ON					
15	LOC	0.066	0.137	0.477	0.633	No DIF
	ON					
16	LOC	0.34	0.135	2.52	0.712	No DIF
	ON					
17	LOC	-0.252	0.12	-2.091	0.437	No DIF
	ON					
18	LOC	0.14	0.126	1.106	0.269	No DIF
	ON					
19	LOC	-0.044	0.119	-0.367	0.713	No DIF
	ON					
20	LOC	0.196	0.131	1.489	0.136	No DIF
	ON					
21	LOC	-0.14	0.123	-1.131	0.258	No DIF

Item		Estimate	S.E	Est./S.E	P-Value	Comment
	ON					
22	LOC	-0.082	0.118	-0.694	0.487	No DIF
	ON					
23	LOC	-0.099	0.125	-0.791	0.429	No DIF
	ON					
24	LOC	-0.008	0.12	-0.066	0.948	No DIF
	ON					

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25	LOC	0.089	0.122	0.728	0.467	No DIF
	ON					
26	LOC	0.064	0.132	0.486	0.627	No DIF
	ON					
27	LOC	-0.07	0.116	-0.602	0.547	No DIF
	ON					
28	LOC	0.309	0.125	2.467	0.514	No DIF
	ON					
29	LOC	0.055	0.121	0.453	0.65	No DIF
	ON					
30	LOC	-0.211	0.115	-1.83	0.067	No DIF
	ON					
31	LOC	-0.055	0.118	-0.467	0.64	No DIF
	ON					
32	LOC	-0.023	0.125	-0.182	0.855	No DIF
	ON					
33	LOC	0.151	0.124	1.222	0.222	No DIF
	ON					
34	LOC	0.132	0.12	1.097	0.273	No DIF
	ON					
35	LOC	0.13	0.117	1.109	0.267	No DIF
	ON					
36	LOC	0.075	0.13	0.581	0.562	No DIF
	ON					
37	LOC	-0.231	0.117	-1.971	0.449	No DIF
	ON					
38	LOC	0.04	0.129	0.312	0.755	No DIF
	ON					
39	LOC	-0.125	0.129	-0.967	0.333	No DIF
	ON					
40	LOC	-0.033	0.116	-0.286	0.775	No DIF
	ON					
41	LOC	-0.319	0.116	-2.759	0.006	DIF
	ON					
42	LOC	0.099	0.121	0.813	0.416	No DIF
	ON					
43	LOC	0.211	0.122	1.738	0.482	No DIF
	ON					
44	LOC	-0.016	0.116	-0.142	0.887	No DIF

Item		Estimate	S.E	Est./S.E	P-Value	Comment
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ON

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45	LOC	-0.072	0.118	-0.613	0.54	No DIF
	ON					
46	LOC	0.053	0.125	0.421	0.674	No DIF
	ON					
47	LOC	-0.195	0.116	-1.684	0.092	No DIF
	ON					
48	LOC	0.161	0.116	1.389	0.165	No DIF
	ON					
49	LOC	-0.093	0.116	-0.804	0.421	No DIF
	ON					
50	LOC	-0.03	0.126	-0.235	0.814	No DIF
	ON					
51	LOC	-0.178	0.119	-1.491	0.136	No DIF
	ON					
52	LOC	-0.146	0.126	-1.158	0.247	No DIF
	ON					
53	LOC	0.157	0.143	1.099	0.272	No DIF
	ON					
54	LOC	-0.05	0.121	-0.414	0.679	No DIF
	ON					
55	LOC	-0.118	0.116	-1.023	0.306	No DIF
	ON					
56	LOC	-0.117	0.116	-1.009	0.313	No DIF
	ON					
57	LOC	-0.134	0.13	-1.032	0.302	No DIF
	ON					
58	LOC	-0.045	0.125	-0.361	0.718	No DIF
	ON					
59	LOC	0.315	0.142	2.221	0.026	DIF
	ON					
60	LOC	0.108	0.121	0.894	0.371	No DIF
	ON					
61	LOC	-0.138	0.119	-1.156	0.248	No DIF
	ON					
62	LOC	0.231	0.112	0.754	0.321	No DIF
	ON					
63	LOC	0.105	0.212	0.562	0.543	No DIF
	ON					
64	LOC	0.324	0.421	0.647	0.326	No DIF
	ON					
65	LOC	0.211	0.542	0.532	0.432	No DIF
	ON					

The results of the analysis in Table 2 shows the assessment of the EAT. Structural equation modelling (SEM) with covariate was used to assess DIF of the items based on school location at 0.05 level of significance. The result shows that item 41 and 59 shows evidence of differential item functioning based on school location and there was no significant direct effect of the covariate on the remaining items which means that the remaining items did not display DIF based on school location. The items that show evidences of DIF were removed from the test.

**Hypothesis Three:** The items of the EAT do not functioned differentially for candidates based on school type in Plateau State.

**Table 3: Results of DIF Assessment of the EAT Items Based on School Type**

Item		Estimate	S.E	Est./S.E	P-Value	Comment
1	ON LOC	0.672	0.116	5.798	0.445	No DIF
2	ON LOC	0.026	0.118	0.219	0.827	No DIF
3	ON LOC	0.074	0.126	0.589	0.556	No DIF
4	ON LOC	-0.071	0.119	-0.597	0.55	No DIF
5	ON LOC	-0.184	0.119	-1.55	0.121	No DIF
6	ON LOC	0.087	0.116	0.749	0.454	No DIF
7	ON LOC	0.179	0.122	1.462	0.144	No DIF
8	ON LOC	-0.184	0.121	-1.517	0.129	No DIF
9	ON LOC	-0.053	0.122	-0.431	0.666	No DIF
10	ON LOC	0.003	0.119	0.028	0.978	No DIF
11	ON LOC	0.158	0.13	1.212	0.226	No DIF
12	ON LOC	-0.003	0.137	-0.019	0.985	No DIF
13	ON LOC	0.294	0.13	2.259	0.524	No DIF
14	ON LOC	-0.055	0.123	-0.448	0.654	No DIF

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15	LOC	0.066	0.137	0.477	0.633	No DIF
	ON					
16	LOC	0.34	0.135	2.52	0.712	No DIF
	ON					
17	LOC	-0.252	0.12	-2.091	0.437	No DIF
	ON					
18	LOC	0.14	0.126	1.106	0.269	No DIF
	ON					
19	LOC	-0.044	0.119	-0.367	0.713	No DIF
	ON					
20	LOC	0.196	0.131	1.489	0.136	No DIF
	ON					
21	LOC	-0.14	0.123	-1.131	0.258	No DIF

Item		Estimate	S.E	Est./S.E	P-Value	Comment
	ON					
22	LOC	-0.082	0.118	-0.694	0.487	No DIF
	ON					
23	LOC	-0.099	0.125	-0.791	0.429	No DIF
	ON					
24	LOC	-0.008	0.12	-0.066	0.948	No DIF
	ON					
25	LOC	0.089	0.122	0.728	0.467	No DIF
	ON					
26	LOC	0.064	0.132	0.486	0.627	No DIF
	ON					
27	LOC	-0.07	0.116	-0.602	0.547	No DIF
	ON					
28	LOC	0.309	0.125	2.467	0.514	No DIF
	ON					
29	LOC	0.055	0.121	0.453	0.65	No DIF
	ON					
30	LOC	-0.211	0.115	-1.83	0.067	No DIF
	ON					
31	LOC	-0.055	0.118	-0.467	0.64	No DIF
	ON					
32	LOC	-0.023	0.125	-0.182	0.855	No DIF
	ON					
33	LOC	0.151	0.124	1.222	0.222	No DIF
	ON					
34	LOC	0.132	0.12	1.097	0.273	No DIF
	ON					

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35	LOC	0.13	0.117	1.109	0.267	No DIF
	ON					
36	LOC	0.075	0.13	0.581	0.562	No DIF
	ON					
37	LOC	-0.231	0.117	-1.971	0.449	No DIF
	ON					
38	LOC	0.04	0.129	0.312	0.755	No DIF
	ON					
39	LOC	-0.125	0.129	-0.967	0.333	No DIF
	ON					
40	LOC	-0.033	0.116	-0.286	0.775	No DIF
	ON					
41	LOC	-0.319	0.116	-2.759	0.006	DIF
	ON					
42	LOC	0.099	0.121	0.813	0.416	No DIF
	ON					
43	LOC	0.211	0.122	1.738	0.482	No DIF
	ON					
44	LOC	-0.016	0.116	-0.142	0.887	No DIF

Item		Estimate	S.E	Est./S.E	P-Value	Comment
	ON					
45	LOC	-0.072	0.118	-0.613	0.54	No DIF
	ON					
46	LOC	0.053	0.125	0.421	0.674	No DIF
	ON					
47	LOC	-0.195	0.116	-1.684	0.092	No DIF
	ON					
48	LOC	0.161	0.116	1.389	0.165	No DIF
	ON					
49	LOC	-0.093	0.116	-0.804	0.421	No DIF
	ON					
50	LOC	-0.03	0.126	-0.235	0.814	No DIF
	ON					
51	LOC	-0.178	0.119	-1.491	0.136	No DIF
	ON					
52	LOC	-0.146	0.126	-1.158	0.247	No DIF
	ON					
53	LOC	0.157	0.143	1.099	0.272	No DIF
	ON					
54	LOC	-0.05	0.121	-0.414	0.679	No DIF
	ON					
55	LOC	-0.118	0.116	-1.023	0.306	No DIF

	ON					
56	LOC	-0.117	0.116	-1.009	0.313	No DIF
	ON					
57	LOC	-0.134	0.13	-1.032	0.302	No DIF
	ON					
58	LOC	-0.045	0.125	-0.361	0.718	No DIF
	ON					
59	LOC	0.315	0.142	2.221	0.026	DIF
	ON					
60	LOC	0.108	0.121	0.894	0.371	No DIF
	ON					
61	LOC	-0.138	0.119	-1.156	0.248	No DIF
	ON					
62	LOC	0.233	0.432	0.512	0.543	No DIF
	ON					
63	LOC	0.211	0.115	0.006	0.063	No DIF
	ON					No DIF
64	LOC	0.332	0.117	0.100	0.526	No DIF
	ON					
65	LOC	0.245	0.302	0.435	0.534	No DIF

The result of the analysis in Table 3 shows the assessment of the EAT. Structural equation modelling (SEM) with covariate was used to assess DIF based on school type at 0.05 level of significance. The results showed that items 41 and 59 show evidence of DIF based on school type because the items had p-value that is less than 0.05 at 0.05 level of significance and there was no significant direct effect of the covariate on the remaining items which means that the other items did not display DIF because the items had p-value that is equal or higher than 0.05.

#### 4. Discussion of Findings

The need for teachers to use test items that do not function differently for testees of the same ability is an important component in teaching and learning. The results of the analysis showed that the EAT data had three Eigen value that were respectively greater than the Eigen value of the mean at 95<sup>th</sup> percentile of the randomly general data. This result showed that there were three dimensions or trait underlying EAT. Therefore multidimensional procedure was used

in calibrating the test item. This is in agreement with the findings by Ackerman (2013) that a test that has more than one dimension should be calibrated using multidimensional method of analysis. Structure equation modelling with covariate was used to test for differential item functioning of the EAT. The findings shows that items 36 and 37 showed evidence of DIF based on students' gender at 0.05 level of significance this findings is in conformity with the findings by Abedalaziz (2009), Madu (2012) and Ogbemor and Onuka (2013) who find that there was the presence of DIF in WAEC questions that were used in conducting certificate examination of students in 2010 based on students gender but the findings is contrary to the study conducted by Ndifon (2014) and Adedoyin and Makabi (2014) who found that there was no evidence of DIF in junior secondary school certificate mathematics examination in southern educational zones, Cross River State. The findings further showed that item 41 and 59 showed evidence of DIF based on school type at 0.05 level of significance. The findings is in agreement with the findings of Ajeigbe and Afolabi (2014) who found that test items for qualifying examination

for senior secondary school students in Osun State and junior secondary school certificate mathematics examination in southern educational zone of Cross River State function differently for students who had the same ability but who were differentiated based on school type at 0.05 level of significance.

The findings further show that item 41 and 59 show evidence of DIF based on school location because the items had p-value that is less than 0.05 at 0.05 level of significance. This also confirm the findings by Madu (2014) who found that mathematics test items used in conducting WAECSSSEE were found to display evidence of differential item functioning with respect to school location.

## 5. Conclusion

Based on the findings of the study, it was concluded that teachers need to determine the differential item functioning of test items before using the test items in examining students. This is to avoid using items that functioned differently for testees of the same ability but who are classified based on gender school type and school location.

## 6. Recommendations

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

- Teachers should investigate for DIF of test items before using the test items in conducting continuous assessment of students in schools.
- Software for DIF should be made available to teachers to enable the teachers use the software in detecting items that functioned differently for testees from different background.
- Teachers should be trained on how to determine differential item functioning of test items that are developed by the teachers.
- Teachers should be sensitized on the need to know that test that are developed for use in conducting continuous assessment of students could be

multidimensional or unidimensional in nature.

## References

- Abedelaziz, N. (2009). *A gender-related differential item functioning Mathematics test items*. Retrieved 19 May 2017 from: <http://www.researchgate.net/.126688/>.
- Ackerman, T. A. (2012). Using Multidimensional Item Response Theory to evaluate educational test. *Journal of Applied and Educational Measurement*, 8(17), 255-278.
- Ajeigbe, T. O., & Afolabi, E. F. (2014). Assessing unidimensionality and differential item functioning in Qualifying Examinations for Senior Secondary School Students, Osun State, Nigeria. *World Journal of Education*, 4(4), 23 – 34. Retrieved 16 November 2017 from: [www.sciedu.ca/wje.world](http://www.sciedu.ca/wje.world) Journal of Education.
- Amuche, C. I., & Fan, A. F. (2016). An Assessment of item bias using differential item functioning technique in NECO biology conducted examination in Taraba State Nigeria. *American International Journal of Research in Humanities, Arts and Social Science*, ISSN (print), 2328 – 3734.
- Bolarinwa, A., Hammed, B., & Barrah, J. (2013). *Empirical Analysis on Gender Disparity towards their Performance in Business Mathematics Examination in Tertiary Institutions in Lagos*. Retrieved 16 March 2016 from: [www.voced.edu.au/...Ngv%3A52627](http://www.voced.edu.au/...Ngv%3A52627).
- Ebesine, S. S. (2016). Culture and differential item functioning in National Examination Council Senior School Certificates Mathematics Multiple-Choice Test in Nigeria. *International Journal of Scientific Research*, 9(1), 29 – 40
- Enetairo, B., & Akorede, F. S. (2010). Differential items functioning techniques for detection of items bias in economics among secondary schools students in Abuja metropolis. *Nigerian*

- Journal of Educational Research and Evaluation*, 9(1), 29 – 40.
- Esomonu, N. P. (2002). Assessment of One-Cognitive Behaviours in Secondary Schools for National Development. In R.C. Ebenebe, & Akudolu L.R. (Eds.) *Education for National Development and Integration* (pp.78 –100). Awka: John Best Publishers.
- Khairani, Z. A., & Nordin, M. S. (2011). The Development and Construct Validation of Mathematics Proficiency test for 14-year-old students. *Asia Pacific Journal of Educators and Education*, 26(1), 33 – 50
- Madu, B. C. (2012) using transformed item difficulty procedure to assess gender related differential item functioning of multiple-choice mathematics items administered in Nigeria. *Journal of Humanities and Social Science*, 2 (6), 22 – 34
- Nhuan, L. V. (2016). *Differential item functioning on the NEL: 88 history achievement test*. Retrieved 16 March 2017 from: [crest.org/wp.content/.../TECH5112.pdf](http://crest.org/wp.content/.../TECH5112.pdf).
- Nwana, O. C. (2007). *Introduction to Educational Research*. Ibadan: HEBN Publishers Plc.
- Obinne, A. D., & Amali, A. O. (2014). Differential item functioning: The Implication for Educational Testing in Nigeria. *International Review of Social Science and Humanities*, 7(1), 52 – 65.
- Oderinde, O. (2016). *Effect of School Variables on Students' Academic Performance in Calabar Municipal Area of Cross River State*. Retrieved 15 June 2017 from: [file: http://www](http://www).
- Ogbebor, U., & Onuka, A. (2013). Differential item functioning method as an item bias indicator. *International Journal Research*, 4(4), 367 – 373.
- Okon, C. E., & Archibong, U. I. (2015). School Type and Students' Academic Performance in Social Studies in Junior Secondary Certificate Examination JSCE. *Academic Journal of Interdisciplinary Studies*, 4 (2), 24 – 35. Publishing Rome Italy.
- Olubunmi, A. G. (2016). *The Impact of School Type, School Population and Socio-Economics Status of Students' Academic Performance*. Retrieved 19 November, 2017 from: [www.covenantuniversity.edu.ng](http://www.covenantuniversity.edu.ng).





## Confucius Political Philosophy as a Panacea to Nigeria Political Crises

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**Abstract.** Democracy as practiced in Nigeria raises fundamental questions. It is besieged with series of problems ranging from corruption to morbid tenacity for power. Besides, political crises tug the nation in different direction and insecurity is on the increase. Electoral violence begets further sophistication across years. With a view to arresting this trend, this paper explores the basic rudiment of Confucius political Philosophy to generate a pedagogy of leadership for leaders.

### 1. Introduction

This paper explores the different dimensions of political crises in Nigeria and the attendant effects on socio-economic development. It enunciates an epistemology of leadership through the ethical and political teaching of Confucius. The essay is not a historical navigation of political crises but a Philosophical examination of why and the way out as demonstrated by Confucius.

### 2. Political and Political Development

Politics as used in their essay revolves around state management. It is the dynamics for managing the affairs of government in a state. According to S.I. Benn (1967:387), “Politics means conjecture about from political organizations actually work or about the causal connections between forms of institution and the types of politics likely to be pursued or between

economic structures and political power. “Hence, we can say that politics enshrines principles which treat the foundation of state and the principles of government” (Appadorai, 1979:3). The principles in reference ascertain who gets what, how and to which extents. As succinctly puts by Lasswell. It enunciates who gets what, how and when” (Lasswell, 1975:4).

Politics, when properly managed bring about political development. “Political development enhances the states capacity to mobilize and allocation resources, to process policy input, into implementable outputs. This assists in problem solving and adaptation to environmental changes and goal realization” (Brunnel, 1996:12). A politically developed state implies appreciable political and participation, proper mobilization of resources and qualitative advancement in the socio-historical and political life of the people (Oyenuga, 2014:166). A politically developed state allows democratic participation of man in governance and creates a latitude for self-realization. It is not oppressive, exploitative or alienating.

### 3. Idea of Political Crisis

In simple expression a crisis is any event that is, or is expected to lead to, an unstable and dangerous situation affecting an individual or group of people. Primarily, “crises are deemed to be negative changes in the security, economic,

political, societal or environmental affairs, especially when they occur suddenly.

Political crisis refer to a period or moment of instability causes by certain factors which a set of people consider unfavourable to their political growth.

#### **4. Dimension of Political Crisis in Nigeria**

Nigeria has been beguiled by series of political upheavals right from the independent era. The civic war (1967-1970) where the Igbo put up mercenary and logistic to secede reflect to a great extent, the enormity of political crisis in Nigeria. Besides, the agitation of the independent people of Biafra championed by Nnamdi Kanu still raise question on the unity of the nation. This is a prelude towards ethnic self determination.

Apart from the threat of session, electoral crisis is another major issue in the annal of politics in Nigeria. The reign of terror in the just concluded election in River State which culminated in the decollation of a police officer is a serious issue. In fact, electoral crisis in Nigeria are accompanied by the threat of force, use of force, assassination, etc.

Not all political crisis are inter-party. At times, it can be intra-party as seen in the on-going positional tussle between Makarfu and Sheriff who are both laying claim to the chairmanship of the People's Democratic Party. There are also crisis caused by the quest for power and position. This at times is caused by the tension between party supremacy and individual calculation on the dynamics of power. This is evident in the internal bickering in the All Progressive Congress over the emergence of Senator Bukola Saraki and the choice of Ekweremadu as Deputy Senate President.

Morbid tenacity for power is another contributory factor. This is anchored on the fact that whoever is in power determines the pattern of resources allocation. Thus, every ethnic group wants to be there and whenever any of them feel cheated; "they return to their primordial ethnic

shell and push their interest through any means" (Uroh, 1998:44).

Political crises can have religious undertone especially when dangerous sects hijacked and manipulate religious creed for survival. This is apparent in the Boko Haram's issue. Countless number of lives have been wasted by this dreaded sect.

Another dimension is when leadership is too autocratic as seen in the draconian rule of late General Sanni Abacha and the maverick manipulation that resulted in the cancellation of an election which was adjudged free and fair in June 1993.

The point is that political crises in Nigeria have diverse dimensions and causes. Some of the causes are: morbid tenacity for power, corruption, electoral malpractices, quest for ethnic self-determination, perceived alienation of ethnic group, manipulation of religion, etc.

#### **5. Political Problem and the Development of Nigeria**

The problem of Nigeria are too numerous to be expressed in a single sentence. They are multifaceted. Politically, Nigeria is being pummeled by diverse forces which violate the efficiency of the system and sap the economy to a worrisome extent.

It is not too outrageous to say that the problem of Nigeria is the problem of leadership. Leadership has a strong epistemological base that must be understood. When not properly understood and applied, the bridge between leaders and followers will certainly collapse generating crises and instability. Oremolola Ipinlaye addresses the problems of Nigeria from the angle of leadership:

*The foundation of Nigeria's political problem is anchored on leadership. Leadership is seen as a case of classical struggle between opposing political interests to control national machinery, exploit resources and further pure economic interest. Thus, the realm of power becomes a realm of complex interplay of forces, financial*

*inducement, Machiavellian manipulation, assassination, etc.* (Ipinlaye, 2015:74).

Ipinlaye really captures a key aspect of the Nigeria's predicament but his thinking will not go down well with those who trace the problem to an external source.

Remarkably, Water Rodney, Bade Onimode, Frantz Fanon, etc., trace the political and economic crises of Africa to the technical barrier imposed by slavery, colonialism and neo colonialism. To them, the contemporary problem Africa is facing can be best explained within the logical consequence of the phenomena of slavery and colonialism. This suggests that a clear analysis of Africa's political problem must embed the problems fostered by external relations. "Colonialism to start with thrust Africa into the world capitalist system dominated by metropolitan forces that operate under harsh individualism and by so doing created a new world economic order in which Africans were and are still ill-equipped to compete" (Sogolo, 1991:57).

Remarkably, it is argued that colonialism serves as the bedrock of modern political crisis in nation like Nigeria. In the word of Peter Ekeh, "Colonialism is to Africa what feudalism is to Europe. They form the historical background from which Africa and Europe advanced to modernity. As such, they have determined the peculiar characteristics of modernity in each of these areas" (1975:93).

A crucial area where the colonial legacy is prominently felt is in the combination of erstwhile autonomous territories of autonomous people. People with diverse cultural and socio-economic heritage were crammed together as nation. This was undertaken to spell out distinct sphere of influence for the colonial masters. As amplified by Oladipo

This was done in order to ensure that colonial control and dispossession could be achieved without undue rivalry among the colonizers and at minimum cost to them... they had brought together or entrenched ethnic divisions in order to be in a better position to ensure their continued

subjugation and dispossession, the colonizer, naturally settled for the second option (Oladipo, 1998:108).

The aforementioned colonial act could be simply identified as the starting point of ethnic rivalry in Nigeria. Though colonialism fast track the emergence of multi-national states in Africa, there was no commensurate process to ensure that these states evolve into a sustainable one. "Because the new states were primarily instrument of control and dispossession, could not generate the feelings of loyalty and support which could promote national cohesion in Africa. This is the origin of the alienation of the people from the states and the emergence of the phenomenon of ethnic self-definition" (Oladipo, 1998:109).

Besides, the colonial economy was structured in such a way that Africa was used as donor of raw materials to boost western economy. The African economy was organized to feed metropolitan industries, the indigenes were not free to determine the trajectory of development. The system was exploitative and oppressive. "The colonial state was oppressive, therefore, it could not establish collective goals, the pursuits which could bring about sense of nationality as a fundamental bold" (Oladipo, 1998:110).

Really, the colonial situation negatively impinges on the development of Africa's politics and socio-economic life. However, the inability to transform a nation like Nigeria in spite of the avalanche of human and material resources should not be traced to colonialism. It is a problem of moral, ethnic rivalry, crass materialism, wrong leadership and unjustifiable tenacity for power.

Undue prioritization and monetization of politics is another problem that hinder political development in Nigeria. "One of the major problem in Nigeria's political process, is the prioritization of politics. Those in power deploy all available resources for the retention of power. The politics of control and retention is extended into the area of political administration and governance" (Onyekpe, 2004:64). How Onyekpe illuminated this

*... this, after the winning or capture of power, the wielders continue the politics involved in the*

*quest for power in the formulation and execution of policies and programmes. The value system is winner-takes-all. The elites of the ruling party, members of caucuses and big supporters are rewarded through patronage (p.64).*

Suffice to note that areas where the winner garner sufficient vote will maximally benefit from the allocation of social amenities and party financial will be abundantly rewarded. Thus, the winner and his or her supporter dictates who gets what, how, when and to what extent. Then, the political race becomes a do or die affair.

Poverty is equally instrumentalized to keep the people in servitude and get their vote. Amazingly, any amount can be expended by those in power to get what they need. A notable instance is the alleged usage of ₦10,000,000 to induce voters by a party in Ondo state during the last gubernatorial election. Indeed people who had been shattered by hunger and gradually dying from diverse ailment owing to financial incapability to patronize medical facilities, fall victim. They collected the money and voted. Where did the money come from, when the government couldn't pay salary for almost seven months?

The morbid tenacity for power has elicited diverse ugly incidence of assassination, corruption and manipulation. Politicians amass wealth with a view to securing status, maintain status and service their structures.

## 6. Confucius Political Philosophy

Confucius (Kong Dui) was born in 551BC in the Lu State of China. His teachings embodied in the analects focused on designing ethical models of family and public interaction and setting high educational standard. Kong Dui died in 478BC. During the sixth Century BC opposing Chinese states were at loggerheads and defied the authority of the Chou empire which had held supreme rule for many years. At this moment, traditional Chinese norms started waning and this reinforced Kong Qui moral stance and sparked him up to reinforce the societal value of compassion and tradition.

It must be noted that Confucius social Philosophy is predicated on the principle of ren or loving others while exercising self discipline. In his analysis 'ren' could be practically reinforced by the golden rule. This imperative posits that "what you do not wish for yourself, do not do to others (Lunyu, 12.2, 6.30). This is a facsimile of Immanuel kants categorical imperative. Kant notes thus: "There is therefore but one categorical imperative, namely this: Act only on that maxim whereby thou can at the same time will that it should become a universal law" (Kant, 1974:117). This means that there is a need to act in such a way that you will that your action be universal. If you are prepared that everyone performs your action, then it is morally worthy" (Fadahunsi, 2001:47).

Confucius political beliefs are rooted in self-discipline. A leader must exercise self-discipline and empathize with his followers. He must treat them with compassion. Leaders should motivate their subject to follow the law by teaching them value.

Politically, Confucius envisioned a society that returned to its root, virtue, point of historical advantage, etc. "People themselves should change. Change must be holistic, not just those that govern them" (Awojobi, 2016:83). The daily rituals which man should be involved in must be those that lead to happiness of themselves and the society. Every man has a responsibility to the society, not just themselves. Government must be tailored towards the well-being and sufficiency of the people. As amplified by James Parker:

*As for government, the three regularities are 'sufficiency of food, sufficiency of military equipment and the confidence of the people in their ruler. If one is to be forgone, the master insists that it is the military equipment of the two remaining, if another is to be forgone, the master states that food should be the next to go. The most important is the people's faith in their ruler. This is the foundation of the state (Jason, 2011:1).*

In a nutshell, the welfare of the people is the first indices of power. While a Machiavellian leader will consider his own interest first and foremost, a humane leader considers the people first.

Basically, Confucius political Philosophy is predicated on his belief that a ruler should learn self-discipline, should govern his subjects by his own examples and should sympathise and empathise with the people. The ruler must put into place a well designed social order that enhances harmonious relationship. Social harmony results in part from every individual knowing his or her place in the natural order and playing his or her part well (Marilyn, 2008:42). Thus, leadership is a form of proper administration to bring about good governance. In the Analects, Confucius notes “there is government, when the prince of prince and the minister is minister; when the father is father and the son is son” (Analects, XII, 11, trans Legge).

Sequel to the above, particular duties arise from one’s particular situation in relation to others. Relationship is bonded as seen in father to son, friend to friend, husband to wife, etc. Specific duties are assigned to each of the components of the ladder of relationship.

### **7. Confucius Political Philosophy as Panacea to Political Crises in Nigeria**

Politics in Nigeria is bedeviled with series of unfavourable crises which tug the nation in different directions. However, a thorough study and application of Confucius notion of political leadership will go a long way to curb some of these problems. The principle of ‘ren’ in Confucius thought draws an interaction or inseparability between morality and politics. Unlike the legal positivist claims that morality is separable from law, politics and morality are inseparable. The idea of ‘ren’ suggests putting others first while exercising self-discipline. The welfare of the governed must be the first item in the scale of preference of the leader.

Leaders must lead with empathy lifestyle. Thus, crass materialism in the midst of a suffering masses is an aberration. A leader must live a life predicated on moral principles and rooted in virtue. He or she must motivate citizens to follow the law by teaching them values. This goes to show that a leader must not be involved in anything that can lead the followers astray.

For instance, if a leader ventures into the Machiavellian system of winning at all cost, he would lack the moral gut to correct the followers when they veer into the track of immorality.

Confucius advocated a system of change. Change must be holistic. It must involve the governor and the governed. It must not be a mere superimposition by a sovereign who like the Hobbes’ leviathan stand outside the circumference of query. In Confucian thought it is an aberration for leaders to be enjoying social amenities while the led live in dilapidated structures. There must be sufficiency of social amenities, food and security so that the people will have confidence in their leaders.

Another important issue is the choice of personnel to manage crucial posts in political administration. Everybody must be trained to know what he/she can do best and obtained maximum result. There must be no manipulative dislocation of human resources based on descriptive capacity as commonly done in Nigeria. One can easily get any juicy job in Nigeria by being connected with a person in power, even when such person lacks the mental power for acting in that capacity. This is one of the core points that underpin underdevelopment in Nigeria. Confucius puts up a moral pedagogy that elicits the best out of human.

This Philosophy also goes a long way to reduce ethnic unrest. Men live bonded life. Every relationship is seen in a bonded form unlike the Plato’s caste and hierarchy in his Republic.

It is sad to note that the political class in Nigeria is not willing to change their luxurious lifestyle in spite of the excruciating economic recession the nation is passing through. There is an urgent need to reduce the number of parliamentarians at the state and federal level. This will in turn reduce the cost of government. The idea of change as exemplified in the APC’s logo is not just the change of mind-set by the followers. The policy planners and political leaders must generate policy that shows empathy and sympathy with the people’s thought. A remarked by Obinto

The pain of the people must be the pain of the leaders. There is a need for radical orientation

and change of mindset by leaders to abandon crass materialism and put the people's plight first (Obinto, 2017:83).

This implies that government must be sensitive and sensitive to the people's plight. There must be practical demonstration of love as seen in father-son biological relationship. Nigeria need this to stem political crises, especially in the Niger Delta where the people complain of marginalization despite the huge deposit of crude oil in the region.

## 8. Conclusion

There is an urgent need for a Philosophy to wipe out crass materialism, morbid tenacity for power, egocentric policy, etc. One scholar whose idea is germane especially on the note of empathy, sympathy and bond is Confucius. His Philosophy must be ingrained into the scheme of strategic studies for leadership.

## References

- Ames, R. and Hall D. (1987). *Thinking Through Confucius*. Albany: State University of New York.
- Appadora, A. (1967). *The Substance of Politics*. New Delhi: Oxford University Press.
- Benn, S.I. (1969). "Nature of Political Philosophy" in Paul Edwards (ed) *The Encyclopaedia of Philosophy* Vol. 6. New York: Macmillan Pub., Co.
- Ekeh, Peter (1973). "Citizenship and Political Conflict: A Sociological Interpretation of the Nigeria Crisis in Joseph okpaku (ed) *Nigeria: Dilemma of Mationhood, An African Analysis of the Biafran Conflict*. Westport: Greenwood Press.
- Fadahunsi, A. (2001). "Kant's Categorical Imperative" in Egun Oduwale and M. Olaolu (eds). *Fundamental Theories and Issues in Ethics*. Ibadan: Ben El Books.
- Jason, Parker ( 1976 ). *Confucius on the Proper Role of Government*. Self deprecate.com/pol
- Kant, Immanuel (1974). "Fundamental Principles of the Metaphysics of Morals in J.T. Granrose and U.N. Frankena (eds). *Introductory Readings in Ethics*. New Jersey.
- Laswell Harold (1936). *Politics Who Gets What, When and How*. New York: McGraw Hall.
- Manly, P. (2008). *Oriental Philosophy*. Ibadan: Oxwam.
- Oladipo, O.T. (1998). "Modernization and the Search for Community" in Oladipo (ed). *Remaking Africa Challenges of the 21<sup>st</sup> Century*. Ibadan: Hope Publications.
- Oyenuga, F.O. (2014). "Dewey's Pragmatism as Foundation For Political Development in Nigeria". Department of Philosophy, Faculty of Arts, Olabisi Onabanjo University, Ago-Iwoye, Ph.D Thesis.
- Onyekpe, J.G. (2004). "The Nigerian State: Economy, Politics and Civil Society" in AAU: *African Studies Review*. Akure: Stebak Books and Publishers.
- Sogolo, Godwin (1991). "The Feature of Democracy and Participation in Advancing Democracy and Participation: Challenges For the Future. Proceedings of the World Future Studies Federation, Darcecons, September 17-21.

## Indigenous Communication Systems and Rural Development Projects' Variables in Selected Rural Communities in Ogun State, Nigeria.

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**Abstract.** This study focused on indigenous communication systems and rural development projects' variables in Ogun state, Nigeria. It adopted descriptive survey design of the ex-post facto type. Multi-stage sampling technique was used to select the 813 participants. Indigenous Communication Systems and Rural Development Projects' Variables Questionnaire with 0.79 Reliability and FGD were used to generate data. Analysis revealed that the four predictor variables jointly predicted positive outcome of the dependent variables. Furthermore, the results show that each of the independent variables has positive significant relationship with development projects' variables; hence the two null hypotheses were rejected. It is concluded that indigenous communications systems are important determinant of project outcome in rural communities.

**Keywords:** Indigenous communication systems; rural development; projects' variables; rural communities.

### 1. Introduction

Huge investment has been committed to rural development in Nigeria over time, however, majority of the projects have failed because of the poor process of implementation which usually exclude the beneficiaries. These projects

failed to achieve their objectives by their inability to meet the socio-economic and quality of life needs of the people thereby resulting to inefficient project delivery. Nwosu (2013, p.122) state that the lapses bedeviling rural development projects in Nigeria are linked to the fact that projects designs are based on top-bottom approach which exclude the beneficiaries' persisting traditional communication systems and their attendant customs and beliefs as well as general socio-political perceptions toward implantation of development programs It is pertinent to note that this inefficiency in rural development projects implementation is also reflected in their lack of improper community mobilisation strategies, neglect of traditional knowledge of project recipients, inappropriate communication channels, poor development information dissemination and poor project outcome.

Several rural development projects in Nigeria regard the people as mere recipients instead of the actual creators of change and progress therefore they usually fail (Nwosu, 2013, p.123). This has been linked to various gaps in development planning in Nigeria like inability to communicate with the people to determine what their needs are, and non-adoption of locally based platform for communication and sharing of indigenous knowledge and poor mobilisation for participation in development projects. The dependence on exogenous media and the

relegation of indigenous communication systems in development programs reduces the communication coverage and participation of the people. These make development programs, especially in rural communities to be seen as mere growth and not development, whereby people do not feel the benefits that should accrue to them (Nwosu, 2013, p.123).

Consequently, projects delivered fail to meet the people's needs thus, causing low income, poverty and poor quality of life which pervade the rural communities. Because of the rate of failure of development projects in rural communities as a result of communication gap with local beneficiaries, several studies have been conducted to find solutions to the problem. In the study conducted by FAO (2010, p.1-5) on indigenous peoples' communication for development, the results show that series of initiatives implemented by indigenous peoples' organizations, development agencies and FAO were to position indigenous communication systems for development as a key element in achieving social change and guaranteeing indigenous people the opportunity to benefit from their rights. Kwame, Tham-Agyekum and Loggoh (2011, p.2682) conducted a review of the use of indigenous communication systems in development work: the case of drama, theatre and puppet shows. This study revealed the importance of indigenous communication systems in achieving stronger grass roots participation in development work, and empowerment of the local people to achieve positive change and involvement in community development. Further, the study conducted by Edet, Akpan and Okeme (2015, p.93) on indigenous communication media and utilization of development information in rural communities revealed that relationship exist between the use of indigenous communication media and successful implementation of development projects.

However, not much has been done on the relationship between indigenous communication systems and rural development projects variables; therefore, this study focuses on indigenous communication systems and rural development projects' variables like productive

asset, rural income and rural infrastructure in Ogun state. This study has three objectives. First, to determine the indigenous communication systems adopted for the provision of rural development projects in the communities. Second, to determine the effectiveness of indigenous communication systems in rural development project provision. Finally, to examine whether there is any significant relationship between indigenous communication systems and the provision of productive asset, rural income and rural infrastructure in the rural communities. The study has two null hypotheses. There is no significant relationship between indigenous communication systems and rural development projects' variables. There is no significant relationship between each of the indigenous communication systems and rural development projects' variables.

## 2. Literature Review

Indigenous communication systems are made up of combination of different media peculiar to the culture of different society. It has also been defined by several authors using different parameters. Mundy and Laney (1992, p.104) identifies it as an aspect of culture and the means by which cultures and the indigenous knowledge are embedded, preserved, handed down, and shared. N'gombe (2000) identifies that ICS has media and functions as "the vehicle the common people or rural farmers employ for the delivery of their messages." It is a means by which local people communicated with one another in the primitive era which functions were effectively performed through several media or channels that convey information and knowledge across all the population. These systems of communication are passed from one generation to another. Such communication systems are derived from society's experience and thoughts over a long period of years (Adesoji and Ogunjimi, 2015, p.406).

Indigenous communication systems are composed of several media/channels through which it functions in different culture. Although, these media are indigenous to each culture, they have been identified as channels of information

dissemination from generation to generation. These media/channels are but not limited to folk, observation, interaction, oramedia, informal media, story-telling, visual arts, concerts, gong beating, dirges, drumming and dancing, interpersonal channels and plays, use of proverbs, songs and dances, use of indigenous language and cultural resources (Mundy and Laney, 1992, p.105; Edet, Akpan and Okeme, 2015, p.93). The importance of indigenous communication systems lie in the fact that it is an aspect of culture which has been part of the people's lives and their ways of making a living over several generations. As part of the people's ways of making a living, it covers all aspects of rural life facilitating progress and positive change among the people at the local level (Mundy and Laney, 1992, p.103; Adesoji and Ogunjimi, 2015, p.406).

Several authors have described rural development as a process that seeks social change and sustainable economic development for the rural community's ongoing progress. Moseley (2003) states that it is the process of improving the quality of life and economic well-being of people living in rural areas, often relatively isolated and sparsely populated areas. The ultimate goal of rural development is to improve the quality of life and well being of the inhabitants and preserve the environment. Moseley (2003) identifies that the characteristics of rural development is based on its emphasis on local and indigenous strategies that promote quality of life and well being of inhabitants. Unlike the urban communities, which have many similarities, rural communities are highly distinctive from one another. Therefore, there is a large variety of rural development approaches used globally to make life better for the people (Van Assche and Hornidge, 2015). In this regard, indigenous communication systems emerged as endogenous traditional ways of communicating development information in the language and cultural view understood by the people in the total cycle of rural development.

Rural development projects are supposed to improve people's quality of life especially in underdeveloped and developing countries. To

this end, the determination of the success or failure of rural development projects is done through assessment of identified variables that signify the attainment of the desired outcome of the projects. An important tool to calculate development indicators, rural development project variables are assessed in the context of necessary spatial, territorial and socio-cultural components of rural development policies. Therefore, socio-cultural concept like indigenous communication systems have been identified as the important independent variables that affect rural development projects' variables in rural and indigenous communities (Terres, Allen, Britz, Bulgheroni, Dwyer and Paracchini, 2012, p.6). The importance of indigenous communication systems in dissemination of development information and messages cannot be over-emphasized. Harande (2009) states that access to knowledge and information required for rural development can only be guaranteed through a system of information dissemination that is indigenous to the people. These types of communication systems have been able to sustain the rural dwellers before the introduction of modern means of communication. It provides identity among communities that uses them and also guides unruly behaviors in the society. It must be noted that the expression indigenous communication in this context is not a substitute for archaic, barbaric or rudimentary communication systems; rather it represents traditional and ancient communication systems.

Kwame, Tham-Agyekum and Loggoh (2011, p.2680) state that Africans, together with their development partners, have often tended to extrapolate communication models from the developed world and apply them wholesale in local environments. But most of these foreign communication strategies often do not impact on the rural masses for which they are meant because they are not "contextualized" to the local settings, their cultural dialects and their world view. In the view of Warren (1990, p.1), indigenous communication of knowledge can be used to facilitate communication in rural development programs. Communication between project personnel and farmers is often very poor, particularly in projects with a structure that favours literacy, top-down

message flows and innovations developed elsewhere. This often results in a serious comprehension gap. Frequently, incompatible of an innovation with local cultural values results in no adoption. In one agro-forestry project in western Nigeria, farmers perceived planting trees on their farm fields as incompatible with their socio-cultural values and beliefs. Nigerian farmers, like industrialised country farmers, also strongly favour increasing production, but soil conservation innovations are perceived as conflicting with this desire. In consequence, these technologies were adopted very slowly.

According to Van den Ban and Hawkins (1996), interest in the use of indigenous media is now increasing in less developed countries as a credible and acceptable source of information because mass media have been less successful in promoting rural development. They note that communication planners should not overlook the significant role of indigenous forms such as theatre, drama, puppet shows, drumming, village criers, storytellers, orators and songs. Using bell, folk tales, proverbs and announcements have played and will continue to play a pivotal role in communication among rural and poor communities. These indigenous communication systems are peculiar to specific societies, borne out of the peoples' culture, religion and experiences; and so its interpretation may vary from one society to another. From the opinions of Van den Ban and Hawkins (1996), Kwame, Tham-Agyekum and Loggoh (2011, p.2680), it is inferred that indigenous media is any form of endogenous communication systems which by virtue of its origin from/and integration into a specific culture, serves as a channel for messages in a way and manner that requires the utilization of the values, symbols, institutions and ethos of the host culture through its unique qualities and attributes. In the opinion of FAO (1994, p.2) indigenous communication systems that have enhanced the process of rural development include media types like traditional and popular folk theatre, dances, puppet shows and popular poetry, as well as rural press linked to literacy programs, and audiovisual materials. These media can be highly effective channels for disseminating development information and for stimulating community action. Ansu-Kyeremeh

(1998, p.68) also argues that these media types are useful in community organization for development providing communication and information which form the basis upon which the communities, the rural communities progress.

Indigenous communication systems have been identified as key to the attainment of people oriented development objectives. FAO (2006, p.3) notes that the process of development activities nowadays focuses on improving quality of life and people's well being and this requires the integration of the indigenous communication systems as the conduit of increasing knowledge and information sharing to disseminate the innovations desired by the people. Therefore, in the application of projects to satisfy people's needs, rural people are at the centre of any given development initiative and view planners, development workers, local authorities, farmers and rural people as "communication equals" with the understanding of the importance of the indigenous communication systems as equally crucial to facilitating mutual understanding, concerted action and achieving the desired outcomes. Communication for development is used for people's participation and community mobilisation, decision-making and action, confidence building, for raising awareness, sharing knowledge and changing attitudes, behaviour and lifestyles, for improving learning and training and rapidly spreading information, assisting with programme planning and formulation cum fostering the support of decision-makers essential to development activities in the rural communities. All rural communities and their institutions have well-developed indigenous communication systems and information networks. With this, many people still trust what they can hear and see above other information when the indigenous communication network is utilised by governments and development agencies to eliminate poverty and increase food security in developing countries (Moseley, 2003; FAO, 2006, p.5; Mefalopulos, 2008, p.10).

Information and communication systems are critical determinants of projects' variables

because they supply the information required by the rural inhabitants in order to make decisions on how projects affect their productive activities, and to supply information required by institutions responsible for making decisions about the policies and processes to support those activities. Improved communication and information alone, however, are not sufficient for improved rural communities. Stakeholder participation in decision-making processes, and building multi-sectoral collaboration and partnerships between them are also crucial. This wide range of stakeholders, from farmer to international support agency, all have their own specific information needs and delivery preferences. Sustainable development and the elimination of poverty also demand attention to national political economic and social processes. Chapman, Slaymaker and Young (2004, p.4) argue that information and communication systems are most likely to improve projects' variables that influence productive activities and income in rural areas if they:

*share costs appropriately, between government for public goods information services and social protection, and users for private goods, and work in partnership with the private sector to ensure effective coverage in remote rural areas, ensure equitable access to all, especially women, the poor, the disabled, people living in remote areas and otherwise disadvantaged communities, contain a high proportion of local or appropriately localised content, both to maximise local usefulness and uptake, and to enrich local, national and international knowledge, build on existing systems, including information content (indigenous knowledge, local sources)... (p.21).*

Also, extant literature confirmed the importance of indigenous communication systems in the attainment of rural development objectives. Findings show that it led to sharing of costs between government for public goods and services, social protection, and users for private goods, worked in partnership with the private sector to ensure effective coverage in remote rural areas.

### 3. Method and Data Analysis

This study adopted the descriptive survey design of the ex-post facto type because the independent variable had already taken place. Multi-stage sampling technique was used to select the sample. First, Ogun state was divided along three senatorial districts. Second, rural communities with recent or ongoing rural community projects were purposively identified which amounted to ten constituting the population. Afterwards, simple random sampling technique was used to select eight hundred and thirteen (813) sample elements for the study from the population in the ten purposively selected rural communities. A modified self-designed instrument that is "Indigenous Communication Systems and Rural Development Projects' Variables Questionnaire" was subjected to reliability test using test-retest method with Cronbach Alpha test of internal consistency, which yielded 0.79. Furthermore, Focus group discussion (FGD Guide Schedule) generated additional data from participants that were carefully selected in conjunction with the contact persons in the study areas. The data generated were analyzed using descriptive statistics like frequency counts, percentage, mean score and content analysis while further analyses was done using inferential statistics of Regression analysis and Pearson product moment correlation multiple correlation matrix at 0.05 level of significance.

### 4. Results and Discussions

#### 4.1 Demographic data

Table 1 below indicates that among the respondents 513(63.1%) were male and 300(36.9%) were female. It also states that 231(28.4%) respondents were between 20-30 years, 211(26%) were between 31-40 years, 197(24.2) were between 41-50 years and 174(21.4%) were 50 years and above. The result indicates majority of the respondents were between 41-50 years. The result also shows that the age groups recorded significant number of respondents that took part in the study. This means that the entire respondents that were involved in the rural development projects in the

communities were adults. This Table shows that 565(69.5%) of the respondents were farmers, 107(13.2%) were fishermen, 51(6.3%) were engaged in animal husbandry, 53(6.5%) were public servants, 31(3.8%) were traders and 6 (0.7%) were others. This means that the participants were from diverse occupational backgrounds. Also, it shows that rural communities are not only inhabited by crop farmers, fishermen and those involved in animal husbandry, this environment is also inhabited by people with diverse occupations. Consequently, the findings actually depict that all of them were interested in the provision of rural infrastructure

and they are provided. This Table also shows that majority of the respondents that is 456(56%) cannot read, 130(16%) can only read but could not write while 227(28%) can both read and write. This is an indication that rural inhabitants involved in rural development were not restricted to non-literates. Furthermore, this indicates that the different forms of literacy ability would have influenced the use of indigenous communication systems and indeed utilisation of different information, knowledge and strategies disseminated for the various activities of rural development.

**Table 1: Demographic Data**

S/N	Demographic Variables	Frequency	Percentage
1 2	Gender		
	Male	513	63.1
	Female	300	36.9
	Total	813	100
1 2 3 4	Age		
	20-30	231	28.4
	31-40	211	26
	41-50	197	24.2
	50 above	174	21.4
	Total	813	100
1 2 3 4 5 6	Occupation		
	Farmers	565	69.5
	Fishermen	107	13.2
	Animal husbandry	51	6.3
	Public servants	53	6.5
	Traders	31	3.8
	others	6	0.7
	Total	813	100
1 2 3	Literacy level		
	Cannot read	456	56
	Can only read	130	16
	Can read and write	227	28
	Total	813	100

Source: Field Survey 2019

#### 4.2 Effectiveness of Indigenous Communication Systems

Table 2 below reveals that the participants were aware of the use of indigenous communications systems in the provision of rural development projects and their effectiveness. Out of a total of 813 participants, 637(78%) reported interpersonal channel as effective and 176(22%) not effective. Story telling/play/drama/songs/dance was reported as effective by 521(64%) participants and 292(36%) considered it not effective. Indigenous language/proverb was reported by 457(56%) as effective and 356(44%) stated it was not effective. 419(52%) of the participants reported gong beating/drumming as effective and 394(48%) considered it not effective in the provision of rural development projects. Furthermore, interpersonal channel was reported as the most effective indigenous communication systems. Storytelling/play/drama/songs/dance was reported as the second most effective. Indigenous language/proverb was rated as the third most effective while gong beating/drumming was reported as the fourth and least effective indigenous communication systems.

**Table 2:** Effectiveness of Indigenous Communication Systems

Community Education Variables	Effectiveness			
	Effective	Not Effective	Total	Rating
Interpersonal Channel	637(78%)	176(22%)	813	1st
Story telling/Play/Drama/Songs/Dance	521(64%)	292(36%)	813	2nd
Indigenous language/Proverb	457(56%)	356(44%)	813	3rd
Gong beating/Drumming	419(52%)	394(48%)	813	4th

Source: Field Survey 2019

**4.3 Joint effect of independent variables on dependent variables**

Table 3a shows the joint contribution of the four independent variables to the prediction of the dependent variable, which are rural development variables. The table also shows a coefficient of multiple correlation ( $R = .484$  and a multiple  $R^2$  of  $.234$ ). This means that 23.4% of the variance was accounted for by four predictor variables when taken together; while the remaining might have been accounted for by other variables not captured by this study. The significance of the composite contribution was tested at  $P < .05$ . The table also shows that the analysis of variance for the regression yielded a F-ratio of 48.245 (significant at 0.05 level). This confirms that the joint contributions of the independent variables to the dependent variable were significant and that other variables not included in this model might have accounted for the remaining variance. Hence null hypothesis two was rejected.

Table 3b reveals the relative contribution of the four independent variables to the dependent variables, expressed as beta weights, viz: story-telling/play/drama/songs/dance ( $\beta = .077$ ), interpersonal channel ( $\beta=.216$ ), indigenous language/proverb ( $\beta=.416$ ) and gong beating/drumming ( $\beta=.207$ ) respectively. Hence, interpersonal channel, story-telling/play/drama/songs/dance, indigenous language/proverb, gong beating/drumming all had significant effects on the dependent variables. Also, considering the relative contribution of each of the four independent variables to the dependent variable, indigenous language/proverb reported the highest Beta weight of ( $\beta=.416$ ) followed interpersonal channel by Beta weight of ( $\beta=.216$ ), gong beating/drumming had Beta weight of ( $\beta=.207$ ), story-telling/play/drama/songs/dance had a Beta weight of ( $\beta=.077$ ) and in that order. With this, it is observed that among the independent variables that were significantly related to the dependent variable, indigenous language/proverb had the highest t-ratio ( $T=5.770$ ) constituting the highest individual relevance and the most important with the strongest influence on the attainment of the dependent variable. This result is further confirmed by a participant during a FGD session that:

*indigenous communication systems have proven to be the saving grace in decision making and resource utilisation because it improved the level of participation in decision making activities of members thereby making everybody to have his say in the project activities...*

The importance of indigenous communication systems to attainment of infrastructure has been observed by Mefalopulos (2008, p.14); that it promoted sharing of local knowledge that especially facilitated significant impacts on the successful implementation and needs’ satisfaction of beneficiaries of a community project. Also, Shukla (2009) finds that indigenous communication systems utilisation improved productive activities/income quality and performance in the study area. Also, the assertion of a participant at a FGD session further corroborated this result:

*sharing of information, knowledge and other resources using indigenous communication systems complemented the information offered by the development agencies and led to improved productivity levels and income of our members.*

Table 3a: Joint effect of the independent variables on rural development variables in rural Communities in Ogun State

<b>R</b>	<b>R Square</b>		<b>Adjusted R Square</b>	<b>R</b>	<b>Std. Error of the Estimate</b>	
.484	.234		.229		2.4266	
<b>A N O V A</b>						
<b>Model</b>	<b>Sum of Squares</b>	<b>DF</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>	<b>Remark</b>
<b>Regression</b>	1420.381	4	284.076	48.245	.000	Sig.
<b>Residual</b>	4645.832	789	5.888			
<b>Total</b>	6066.214	794				

Level of Significance .05

Table 3b: Relative contribution of the independent variables to Rural Development Variables in rural communities in Ogun State

Model	Unstandardized Coefficient		Stand. Coefficient	T	Sig.	Remark
	B	Std. Error	Beta Contribution			
(Constant)	4.146	2.159		1.921	.055	sig.
Storytelling/Play/Drama/Songs/Dance	.313	.155	.077	2.021		sig.
Interpersonal Channel	.193	.038	.216	5.140	.000	sig.
Indigenous language/Proverb	.558	.097	.416	5.770	.000	sig.
Gong beating/Drumming	.269	.094	.207	2.867	.004	sig.

Level of Significance .05

Table 4 shows that there was a positive significant relationship between indigenous communication systems and improvement in productive asset ( $r=.056$ ), productive activities/income ( $r=.069$ ), rural infrastructure ( $r=.123$ ), participation/decision making ( $r=.165$ ) respectively. Based on this, it could be inferred that indigenous communication systems has positively predicted rural development projects' variables in this study; hence the null hypothesis two was rejected. This emanated from responses of the participants indicating that 750(92.2%) strongly agreed, 47(5.8%) agreed, 9(1.1%) disagreed and 7(0.9%) strongly disagreed with the item that the use of indigenous communication systems conveyed local knowledge which influenced rural development projects' variables. On the extent to which indigenous communication influenced interpersonal relations for the attainment of rural development projects' variables, the responses indicated that 735(90.4%) strongly agreed, 63(7.75%) agreed, 6(0.74%) disagreed and 9(1.11%) strongly disagreed. The responses of participants on the extent to which indigenous information sharing influenced rural development projects' variables show that 727(89.4%) strongly agreed, 77(9.5%) agreed, 7(0.9%) disagreed and 2(0.2%) strongly disagreed. The opinions of the respondents on the extent to which indigenous communication systems of productive activities influenced rural development projects' variables show that 733(90.1%) strongly agreed, 59 (7.3%) agreed, 12 (1.5%) disagreed and 9 (1.1%) strongly disagreed. The responses on the extent to which indigenous communication systems influenced the adoption of participatory decision making approach for better rural development projects' variables showed that 747(91.9%) strongly agreed, 57 (7%) agreed, 6 (0.73%) disagreed and 3(0.37%) strongly disagreed.

Mefalopulos (2008, p.8) stresses the importance of indigenous communication systems because it is known to facilitate acquisition of local knowledge which contributes to enhanced productive activities, income and better quality of life in rural areas. The assertion of Shukla (2009) is also in agreement with the findings of this study, that indigenous communication systems facilitate information sharing, allowing community participation in project decisions, ensuring a fair and equal distribution of project benefits; and, therefore, leading to improved rural development variables. This result was supported by the assertion of one of the participants at an FGD session:

the community members do pass information and share knowledge on rural development which is different from the previous projects and how the approach would work considering the local situation and

resources available in order to achieve expected results. In doing this, we mention these at all gatherings, during house visitation and during meetings of community members. We are happy to see the results in the infrastructure like borehole, roads, milling machine, pumping machine, increased farm production and income of all our members.

**Table 4:** Correlation Matrix of the Relationship between Indigenous Communication Systems and Rural Development Variables

	Indigenous Communication Systems	Improvement in Productive Assets	Productive Activities / Income	Rural infrastructure	Decision-Participation/ making	Mean	S.D
<b>1.Indigenous Communication Systems</b>	1					30.3119	4.8132
<b>2. Improvement in Productive Assets</b>	.056**	1				29.4164	3.0929
<b>3.Productive Activities/Income</b>	.069**	.558**	1			25.4465	2.8976
<b>4. Rural infrastructure</b>	.123**	.661**	.759**	1		22.1057	2.3275
<b>5.Participation/ Decision Making</b>	.165**	.624**	.793**	.853**	1	18.4566	2.0618

\*\* Significant at .05 level

This study further revealed that inhabitants of rural communities are familiar with indigenous communication systems as part of their culture and as strategies of information and knowledge sharing in development projects. This confirms the assertion by authors like FAO (2010, p.12) and Edet, Akpan and Okeme (2015, p.91) that use of indigenous language of a group lead to greater understanding and better mobilizes the people for greater participation and project outcomes.

This is corroborated by the findings of Solomon, Maud, Samuel and Nana (2001, p.1562) that use of indigenous communication systems provide adequate knowledge and information which mobilize the people to get participate in projects that have a positive change in their living conditions.

**5. Conclusion and Recommendations**

This study concludes that the past failures of rural development projects was because development communication systems adopted do not use indigenous systems thereby are ineffective and lead to poor delivery of projects’ variables. It has shown that rural inhabitants are aware of the importance of indigenous communication systems in project delivery and differences in their effectiveness. It also notes

that when all the indigenous communication systems are used they positively influence the provision of rural development projects’ variables and project outcomes will be more effective. Therefore, indigenous communication systems are important determinant of project outcome in rural communities.

Based on the findings of the study, it is recommended that:

- Indigenous communication systems should be properly documented and preserved by relevant agencies to prevent interferences by modern communication media.
- Government and international development agencies should intensify efforts in properly integrating indigenous communication systems as critical elements of development policy formulation and implementation.

**References**

Adesoji, S. A & Ogunjimi, S. I. (2015). Assessing the Use of Indigenous Communication Media among Rural Dwellers of Osun State, Nigeria. *American Journal of Experimental Agriculture* 7, (6): 405-413, DOI: 10.9734/AJEA/2015/9743.

- Ansu-Kyeremeh K. (1998). Perspectives in Indigenous Communication in Africa. In Theory and Application. (Ed) Accra, Ghana: School of Communication Studies, University of Ghana, Legon, 1.
- Chapman, R, Slaymaker, T & Young, J. (2004). *Approaches to Information and Communication in Support of Rural Poverty Elimination and Food Security*. Overseas Development Institute. UK
- Edet, P.I., Akpan, B. C., & Okeme, I. (2015). Indigenous communication media and utilization of development information in rural communities of South-South, Nigeria. *International Journal of English and Literature (IJEL)*, 5, (1), pp: 85-96.
- Food and Agriculture Organization. (1994). *Communication a Key to Human Development*. Food and Agriculture Organization. Rome
- Food and Agriculture Organization. (2006). *Framework on Effective Rural Communication for Development*. Edited by Riccardo Del Castello and Paul Mathias Braun. Published by the Food and Agriculture Organization of the United Nations, Rome
- Food and Agriculture Organization. (2010). *Indigenous Peoples' Communication for Development. Communication for Sustainable Development Initiative*. Report. Food and Agriculture Organization. Rome
- Harande, Y. I. (2009). Information services for rural community development in Nigeria. *Global Journal of Human Social Science*, 12.
- Kwame. E., Tham-Agyekum & Loggoh, B. (2011). A Review of the Use of Indigenous Communication Systems in Development Work: The Case of Drama, Theatre and Puppet Shows. *Elixir Soc. Sci.* 35, pp: 2680-2683.
- Mefalopulos, P. (2008). *Development Communication Sourcebook: Broadening the Boundaries of Communication*. Washington DC: International Bank for Reconstruction and Development/The World Bank. pp: 224. ISBN 978-0-8213-7522-8.
- Moseley, M. J. (2003). *Rural Development: Principles and Practice* (1. publ. ed.). London [u.a.]: SAGE. pp: 5.
- Mundy, P., & Lloyd-Laney, M. (1992). Indigenous Communication: Appropriate Technology. 19, (2), IT Publications Ltd, 103-105 Southampton Row London, UK.
- N'gombe, J.L. (2000). *The Communication Model and Folk Media in Development, Workshop Report of the Sustainable Development Department (SD) of the FAO*. File//4:\SD knowledge folk and Traditional Media for rural development.
- Nwosu, I. A. (2013). Indigenous communication as an enabling factor for rural development in Nigeria. *International Journal of Development and Management Review (INJODEMAR)*, 8, (1).
- Solomon, P., Maud, O. N., Samuel, O. A. & Nana, G. A. (2001). Using Folk Media in HIV/AIDS Prevention in Rural Ghana. ARCH Project, Obuasi, Ghana.
- Shukla, S. R. (2009). Communicating Education for Sustainable Development with Less Articulate and Under-privileged Communities: Innovative Approaches to Socially Critical Environmental Education. Biogeography and Biodiversity: IGU Commission Contribution to International Year of Planet Earth. Rawat Publications. pp: 48–60.
- Terres, J.M; Allen, B; Britz, W; Bulgheroni, C; Dwyer, J & Paracchini, M. L.(2012). *Common Agricultural Policy Regionalized Impact – The Rural Development Dimension*. Collaborative Project - Small to Medium-Scale focused Research Project under the Seventh Framework Programme. ILR, Universitat, Bonn. Retrieved from <http://www.ilr.uni-bonn.de/agpo/rsrch/capri-rd/docs/d5.2.pdf>
- Warren, D. M. (1990). *Indigenous Knowledge Systems and Development: Background Paper for Seminar Series on Sociology and Natural Resource Management*. The World Bank. Washington, D.C.
- Van Assche, K & Hornidge, Anna-Katharina. (2015) Rural development. Knowledge and Expertise in Governance. Wageningen Academic Publishers, Wageningen.
- Van den Ban & Hawkins, W. (1996). *Agricultural Extension*, 2nd Edition Longman Scientific and Technical Essex.cm 202 IE England. Accessed February 21, 2019 from <http://www.worldbank.org>.

## The Dynamics of Foreign Aid and The Dependency Theory: The Nigeria's Experience

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**Abstract.** This paper is a theoretical enquiry of the relationship between foreign aid and the dependency theory in Africa, and in particular, Nigeria. Dependency theory comprises of two sets of states described as dominant/dependent, centre/periphery, metropolitan/satellite. The dominant or core states are the developed states in the Organization of Economic Cooperation and Development (OECD) while the dependent states are those of Latin America, Asia and Africa. Dependency Theory is often associated with underdevelopment. The theory is predicated on the concept that reserves flow from a 'periphery' of poor and underdeveloped country to a 'core' of wealthy country. Most African scholars uphold the view that underdevelopment of Africa emanates from the forceful integration of Africa into the world capitalist system through the Trans-Atlantic Slave Trade, Produce trade, colonialism, imperialism and neo-colonialism. These theorists are of the notion that foreign aid, among several factors, is a key instigator of the underdevelopment of Africa. Analysts are of the view that foreign aid isn't working in Africa compared to the negligible percent of countries that are making progress. Statistics show that countries like Uganda, Ghana, Mozambique, Tanzania, Mali, Rwanda are making steady progress whereas the story is appalling in many others. No doubt, foreign aid has helped critical areas in infrastructure, education and healthcare

in Nigeria but a whole lot of it never gets utilized for the purpose for which it was intended. Some argue that aid is not working in Nigeria and should be discontinued while others opined that the argument should be targeted on how to make it work in Nigeria. This work concludes that foreign aid is not solely capable of inducing the needed transformation in Nigeria because real change would only take place when the bulk of contribution comes within Nigerian and not externals. Internal factors, especially bad governance, corruption, conflicts and inter-ethnic rivalry in Nigeria, still play a big role in the underdevelopment of Nigeria and not all about foreign aid and dependency.

**Keywords:** Dependency Theory, Foreign Aid, underdevelopment, periphery, core.

### 1. Introduction

Dependency Theory originates in the 1949 by Raul Prebisch and Hans Singer with the notion that resources flow from a 'periphery' of poor and underdeveloped states to a 'core' of wealthy states at the expense of the former. The dependency theorists are of the view that poor countries are impoverished and rich ones enriched by the way poor countries are integrated into the world capitalist system. In other words, the theory was a direct response to the inadequacies of the modernization theory

which held that all states progress through similar stages of development. The theory became popular in the 1960s and 1970s as a criticism of the modernization theory, which was falling increasingly because of continued widespread poverty in much of the world. Other theorists are Andre Gunder Frank, Karl Marx, Friedrich Engels, Vladimir Lenin, Celso Furtado, Armando Cordova, Osvaldo Sunkel, Samir Amin, Immanuel Wallerstein, Walter Rodney, among several others. These scholars are of the view that modernism is synonymous with capitalism, and that the latter is synonymous with exploitation and underdevelopment. In Africa, these theorists answer the puzzle as to why Africa has been unable to perform in terms of economic growth and development. Unlike their counterparts, the proponents of the modernization theory, they quickly offer an exogenous cause for the underdevelopment of Africa, as they argue that the forceful integration and incorporation of Africa into the world capitalist system accounts largely for the underdevelopment of Africa. Gunder Frank explains that the only thing developing in Africa is underdevelopment which he capsulated as, 'The Development of Underdevelopment.'

According to the proponents of the dependency theory the Trans-Atlantic Slave Trade, the Produce Trade, Imperialism, Colonialism, and Neo-colonialism were and are all responsible for the underdevelopment of Africa. They argued these factors were responsible for the forceful and pre-mature incorporation of African territories into the world capitalist system. The incorporation of Africa into the world capitalist system created a dichotomy in economic relations in the international system. First, there was the Developed Countries (DC) also called 'Core' or 'Centre', which exploited or plundered African resources, including erstwhile colonial masters and newly emerged neo-colonialists. The core buys cheap raw materials from developing countries, refine them and export back to Africa as finished products whose prices Africa more or less does not determine. Second, the incorporation created the Less Developed Countries (LDC) also called, 'Periphery' or 'Satellite', which supplies the bulk of natural resources and labor needed to fuel the industrial

engines of Core countries. The consequence was that there was an endless cycle of parasitic inter-dependence between the two blocs while the core gained immensely from the cycle, the periphery languished in abject poverty.

Walter Rodney (1973) posits that colonialism had only one hand- it was a one-armed bandit and hardly anything was done which could be termed a service to the African people. The foregoing is corroborated by other dependency scholars who states that anything good that came out of colonialism was only a fringe benefit and had nothing much to contribute to the well-being of the African population. For instance, the construction of railway running from Enugu to Port Harcourt was not primarily targeted to ease transportation in the defunct Eastern region of Nigeria but was principally intended to facilitate the transportation of coal from Enugu to the port in Port Harcourt.

So, what effects did colonialism produce in Africa? Colonialism disrupted the pre-existing social system that guaranteed relative peace and steady growth in Africa. Colonialism, in the mind of the Berlin West African Conference of 1884/85 balkanized African territories into pockets of territories for the administrative and economic convenience of the West. It led to the creation of miniscule states and territories in Africa, through the principle of divide and rule. Psychologically, colonialism instilled and installed the illusory notion of white man's superiority and the 'white man's burden' in the psyches of most Africans. The incorporation led and still leads to brain drain from Africa to Europe and North America. Economically, the incorporation more or less perpetuated the position of Africa as producers of primary products or raw materials in the international system. According to the proponents of the dependency theory, the infeasibility of creating an effective customs union and the difficulty associated with the practice of the comparative advantage in Africa are all situated on the foundations of the rivalry created by colonialism between Francophone and Anglophone countries.

## **2. Underdevelopment and the Dependency Theory in Nigeria**

Nigeria which is a part of the Third World is not left out in the prevalent condition of poverty and underdevelopment in the Third World countries. Dependency scholars keep blaming the developed countries as the culprit of Nigeria's plight since they forcefully integrated rudimentary African economies (of which Nigeria is a part of) into the world capitalist market in which Africans were cheated and exploited as a result of the unequal exchange which saw to the siphoning of resources from Nigeria to the core countries. This ipso facto brought about the 'development of under development' in the region.

Clearly, the prevailing Nigerian scenario shares strongly and striking similarities with the postulations of dependency theory. This is apparent in the unparalleled addiction to foreign made goods which has created a circle of dependence. This is very obvious in Nigeria as the country import virtually everything, ranging from toothpick to matches, and it goes on. The dependence on foreign made goods was begun by the incorporation of Africa in the world capitalist market. The incorporation which was perpetuated by colonialism left devastating effects in Nigeria and Africa. Walter Rodney described colonialism as 'a one armed bandit that steals and never returns.'

The colonial masters left their countries in search of raw materials, markets and cheap labor supply. To sell their goods, they had to discourage local craft and craftsmanship. This they accomplished by selling their goods at relatively cheap prices and packaging them well. This, according to Ake (1981) brought about the dearth of local craft and craftsmanship in Nigeria. This is what the dependency theory is all about, structural inter-dependence brought about the development of underdevelopment in Nigeria.

Furthermore, the dominant instruments employed by neo-colonialist are foreign aid and multinational corporations. The saying, that 'he who goes borrowing, goes sorrowing' becomes glaring in Nigeria as she depends on foreign aid to finance certain projects. Foreign aid makes Nigeria and other African countries poor and dependent on developed countries. Foreign aid

as noted is a death trap set up by countries of the west to keep Africa dependent on the west. Nigeria and other African countries 'entered' this trap as a result of the dynamics colonialism which consolidated the forceful incorporation of African rudimentary economies to the global capitalist economy. Again, some scholars also argued that Multinational Corporations (MNCs) are also mechanisms used by imperialist nations to keep African countries like Nigeria in perpetual poverty and underdeveloped. The activities of multinational companies, especially the IOCs have been noted as vicious to the development of the country, taking into account the crises in the areas they are operate, the environmental degradation especially in the Niger Delta area through the introduction of toxic and chemical substances into both the air and into water bodies. Consequently, the life expectancy and the livelihood of the people are greatly distorted. For instance, in Bodo, Ogoni land, Rivers State, the pre-existing fish industry is in colossal collapse as the result of the oil spillage, and diseases as a result of unchecked gas flaring.

Onimode (1983:137) corroborates the fact that 'since independence in 1960 multinational corporations have emerged as the powerful catalysts of multilateral imperialism in Nigeria. They are the Trojan horses whose monopoly capital and advanced technology backed by enormous political pressures from their home governments constitute the dominant mechanism of integration into the international system of capitalist domination which dependency theorists have held accountable for conditions of poverty and underdevelopment in Nigeria.

From the above, the dependency perspective painted a graphic picture of the conditions of poverty and underdevelopment in Nigeria and third world countries. Be that as it may, Nigeria's under development can also be looked from the prism of internal factors as it is only a cursory glance that will reveal only external factors of underdevelopment. A careful look will reveal internal constraints like bribery and corruption, looting and embezzlement of public funds, enthronement of mediocrity, emergence of leaders from rigged elections.

With all these critiques facing the dependency theory, there is however no denying the fact that this perspective has clearly presented the plight of the third world which 'is held in the iron embrace of monopoly capitalism'. Nwaorgu (2006:29) explained 'the social relations between the industrialized west and the third world in terms of control, domination and exploitation'. Through 'capital flights from the third world, capital accumulates and is easily made available or put to use in the industrialized exploiter nations. From the excessive profit, they simply dole out to these dependent economies some financial aid to marginally sustain their poor industrial base and agricultural sector. Of course, the agricultural sector produces the primary produce which sustains the 'gigantic industrial concerns of the capitalist west.'

The low level technology and lack of capital have impeded efforts at delinking from the capitalist system. No reasonable development or transformation of the Afro-Asian and Latin America nations' economies will take place in the face of a weak or non-existent technological back-drop. The very shallow capital base which by extension explains among other things the huge debt burden these countries have come under cannot support meaningful 'home groomed developments'. This therefore has conditioned Nigeria's and third world's developments thereby presenting dependency as a reasonable way of coping with the problem. In this respect, dependency according to Nwaorgu (2006) can be seen as an apology or explanation for the various reasons for the level of underdevelopment and condition of poverty in Nigeria and third world at large. It is therefore a 'reflection of these countries' perspective and perception of their unequal relationship with the metropole. Even though their experiences and growth trends may differ, the theory has carefully shown a uniform trend both in depth of extraction and spread of exploitation and should not be thrown into the waste bin of history as hinted by critics.

But the question we should ask ourselves is how long are we going to keep blaming the DCs for our woes? It is high time we stop looking elsewhere for the causes of and the solution to

underdevelopment in Nigeria, and started looking within Nigeria for the solutions to the problems affecting the country. Like some of the critics have pointed out, the dependency theory is an excuse for the slow pace of development in Africa. Objectively, Nigerians are the architects of their present predicament. Tails of bribery and corruption, embezzlement of public funds, mediocrity and looting of public funds is prevalent in Nigeria. Corruption has become institutionalized in the country, as can be seen, the only thing that has been developing is corruption, assuming new dimensions every day. In the light of the above argument, we can conclude that inasmuch as external factors are responsible for the current underdevelopment in Nigeria, internal factors have sustained and revamped the foundations created for underdevelopment in Nigeria. What is happening in Malaysia, Indonesia, Thailand, India and elsewhere where colonialism took place should be a clear lesson for us. Today, it is evident that the west cannot exploit Nigeria without collaborators and assistance from Nigeria.

### 3. Foreign Aid

Foreign aid may be defined as the military, technical, educational, scientific and monetary assistance given to a country by another. Foreign aid is not a new thing in the international system. Aptly, whenever foreign aid is mentioned, Truman's Doctrine, Marshall Plan, and the Council for Mutual Economic Assistance come handy.

At the dawn of Harry Truman's administration in the US, he was confronted by the fast growing tension between the Eastern bloc spearheaded by the Soviet Union, and the Western bloc spearheaded by the USA. The tension culminated into what was known as Cold War. The war was basically an ideological struggle employed the following instruments as instruments of warfare: propaganda, economic and scientific competition, military subversion, espionage, among others.

Consequently, considering the swift incursion of pro-communist sentiments overseas, and in other

for the USA to compete favorably in the on-going struggle, Truman declared, that:

*It must be the policy of the United States to support free people who are resisting the attempted subjugation by armed minorities or pressures.*

Having declared his speech at a session of Congress, Truman sought and received \$400 million in military and economic aid for countries which were in dire need of it, and which wanted the USA to act as a bulwark against communist expansion. Significantly, it went long in quelling the expansion of the Soviet Union to some countries.

Soon after of the Truman's Doctrine was tinkered with in March 1947, the USA, considering the great extent to which World War II wrecked Europe, the USA launched the Marshall Plan alternatively called the European Economic Recovery Programme in June, 1947, which provided \$13 billion in aid to European countries, including the ones under the auspices of the Soviet Union. The plan was successful at restoring infrastructure, bringing political stability, rejuvenating economies, and reinstating hope to a destroyed Europe, all while thrusting USA into the forefronts of the world stage. (Cheng, 2014:4).

However, the action of the USA is calculated in bad faith by the Soviet Union. So, as an alternative to the Truman's Doctrine and the Marshall Plan, between January 5 and 8, 1949, the latter incorporated foreign aid as a part and parcel of its foreign policy when she launched the Council for Mutual Economic Assistance (COMECON). The council was joined by Romania, Bulgaria, Poland, Hungary, and Czechoslovakia.

#### **4. Nigeria and Foreign Aid**

Having considered the meaning and historical trajectory of foreign Aid in the international system, it becomes imperative to question the relevance of foreign aid to Nigeria. The foreign aid that helped in no small way in provoking the remission of infrastructural decay in Europe, is it potent enough in inducing economic

development in Nigeria? Are there some centrifugal forces inherent in the foreign aid that makes it (foreign aid) incapable of provoking the changes they are intended to? Is foreign aid basically a bullet loaded in the gun of the Washington Consensus and shot by the western countries into developing countries so as to either perpetuate their underdevelopment or get them linked up with the neo-liberal ideology?

The analysis and critique must begin on the note that there is no free meal or nothing goes for free in international relations. Every country gives foreign aid more often than not do so to achieve an interest. Such interests cut across military, economic, educational, religious, socio-cultural and ideological. For instance, the decision of the European Union to extend a level of partnership and foreign aid to African Caribbean and Pacific (ACP) countries is viewed as a calculated attempt by the Union to entrench the neo-liberal ideology in those countries.

The truth is, that the Marshall plan achieved its purpose of revivifying war-torn Europe. But from the Nigerian context, foreign aid is not potent enough to cause economic transformation as it did in Europe. The foregoing is premised on the fact, that the foreign aid that was issued by the USA did not build Europe from the scratch, it only revived pre-existing social and economic systems that were before their collapse or partial death prosperous and buoyant. The case is largely different from the Nigerian context, which has never experienced growth and development relative to pre-World War II Europe.

But on another note, no country is an island, and even if there are countries that choose to isolate themselves from other countries in the international system, such countries cannot boast of meaningful development. North Korea is one country that buttresses the foregoing point. This, thus, brings us to the point, that no country exists in autarky, every country would have to make up to its deficit in either natural or human resources from other countries, or else be put in the jeopardy of becoming extinct. This is true for developing countries as it is for developed ones. It would startle many for one to state the fact

that the USA, Japan, China receive aid from other countries, including Africa in general and Nigeria in Particular. How? China is partially if not totally resource-poor. The country (China) is able to develop to the extent it has on the premise of the assistance she gets from African Countries, in terms of the supply of natural resources like crude oil, gold, tin, iron ore, etc. This brings us to the point where we re-emphasize that foreign aid in the real sense of the word is not necessarily and solely a monetary thing, its application is quite profound. So, the question comes, considering the fact that all countries receive aid from other countries, and some out of the many countries that receive them are able to use them for the transformation and development of their societies, why is foreign aid not potent enough in Nigeria? The closet and most cogent answer to the foregoing is the corruption inherent in the Nigerian system.

Nigeria receives millions of dollars on aid yearly, but such does not trickle down to the social masses. Whether one is talking about aid on education, in form of educational grants, scholarship, etc., a good number of them never gets to the common man on the street. Foreign aid can also be in the form of loans (both soft and hard). Nigeria keeps on receiving loans and grants overseas, and they are unfortunately laundered out of the country into foreign banks, like the Swiss bank at Switzerland. The foregoing has been termed, the recycling of petrol dollar. As big as the USA, she borrows money from other countries: for example, the USA owes China over \$1trillion dollars, out of over \$19 trillion national debt, but the country is faring well. This is because loans gotten from other countries are highly utilized to people-oriented projects. This is not obtainable in Nigeria. The country uses a bulk of her wealth on social rendezvous, deepen inter-ethnic rivalry, sponsor pilgrimage for both the Cross and the Crescent, and a good portion find its way into the bottomless pockets of kleptocratic politicians. For instance, under President Goodluck Jonathan's regime, Stella Oduah, the then minister of aviation, squandered 225 million naira in procuring two personal armored vehicles; the despot, Sani Abacha, who looted Nigeria's money to the extent the wife was

quoted as saying, that even if government confiscates all of Abacha's loots, the family would never be poorer than Dangote, who is considered as the richest man in Africa; what of the money plundered by James Ibori, the ex-governor of Delta state who embezzled \$250 million when he was a governor; Sambo Dasuki (former National Security Adviser to President Goodluck Jonathan) alleged to have collected \$2.1b; Alison Madueke (minister of Petroleum Resources under Goodluck Jonathan) alleged to have looted over \$20b and the Ikoyigate cash of about \$43.4m linked to ex-NIA boss, Amb. Ayodele Oke and his wife, Mrs. Folasade Oke.

From the dependency standpoint, foreign aid (especially when it has to do with loans) is nothing but a hammer used to break in shads everything that does not conform to neo-liberal ideology in gullible recipient countries. Before Nigeria receives loans from international donor agencies (for instance, the World Bank and the International Monetary Fund) and countries or consortia of them (for instance, Paris Club), she must, first and foremost, drink the capsules prescribed by those donor-countries or agencies. The IMF has what it calls, the IMF Conditionality. The conditionality is a set of criteria that are attached to the loan demanded by a country, and of which that country must satisfactorily fulfil. Those conditions include: the liberalization of foreign trade through the reduction of tariff and non-tariff barriers, price liberalization and deregulation, privatization, and devaluation of national currency, among others. The conditionality is viewed to as the 'modern procedure of colonization.' By contracting a government's capacity to organize and censor its internal economy, pathways are created for transnational companies to enter the country (Nigeria) and plunder her natural resources. Trade liberalization also exposes the infant industries in the country to the unhealthy competition emanating from transnational companies.

In recent times, Dambisa Moyo, the author of the book, *Dead Aid*, considered as one of the most important critiques of Foreign Aid, has argued, that aid has and is not working in Africa (Nigeria) and, that over the last few decades,

donors have pumped billions of dollars in aid into Africa. Meanwhile, the number of poor people in the region has continued to rise exponentially. Dambisa asked, 'Why has so much aid done so little good?' He presents the answer, that aid chokes-off economic growth, sponsors corruption, and fosters financial dependence on foreign donors. Why bother taxing your citizens when you have access to easy money in the form of aid? She goes further to say, that:

*Aid is the disease of which it pretends to cure. Since the 1940's, approximating \$1 trillion USD of aid has been transferred from rich countries to Africa. This is neatly \$1000 USD for every man, women, and child on the planet today.*

Furthermore, the challenge with the aid-dependence model, as Dambisa Moyo calls it, is that instead of insisting on the development of Nigeria sponsored by the Nigerian peoples, the model puts the development of Nigeria in the hands of outsiders- international financial institutions and western countries. At this point, it becomes important to state that no country has ever achieved and can ever achieve development, when the social masses are alienated from the processes of development. Development has been highly problematic in Nigeria because most development plans in the country only adopt a top-bottom instead of a bottom-top approach to development, and thus the isolation of the people who are expected to be at the vanguard of development in the country becomes inevitable. What foreign aid does to a country, such as Nigeria, is that it creates room for the unaccountability of political leaders to the led, and also makes the people more or less indifferent of how revenue in the country is utilized. Consequently, because the government's financial dependence on its citizens has been reduced, it owes its people nothing, Dambisa (2009:58). In that case, the only obligation the government has is to measure up to the standards prescribed by the donors of aid.

Nigeria has been blindfolded by the little incentives that arise from the sales of crude oil in the international market, and foreign aid, and so, is indifferent about generating revenues from

taxes, and diversifying the economy for a greater productivity and income.

From the donor's angle, the 'tying of aid, which involves giving out loan or grant to the recipient country, and dictating what the grant should be spent on, is a major factor inhibiting the effectiveness of foreign aid in Nigeria. More often than not, aid recipients do not have the arbitrary power to decide what to do with the grant they received overseas. The interest of the donor country is a factor preventing the effectiveness of foreign aid.

The interests of the donor country more often than not tell on the volume of aid issued out. This is based on the fact that in international relations there is no permanent friend nor enemy but permanent interest. The removal of the aid donor's interests from any assistance it is giving makes aid totally infeasible. This is true for China as it is for the USA and Britain. Currently, China has adopted a new approach of soliciting for the repay of its aid: it can be termed the Resource-for-Aid Approach. In tinkering with that approach, she helps in constructing bridges, roads, among other things in return for the recipients' natural resources.

On the other hand, from the Nigerian (recipient) angle, corruption, weak institutions, conflict, and bureaucratic failures militate against the effectiveness of foreign aid in Nigeria. Again, associated with foreign aid is the issue of aid dependency, which reasonably prevents growth and development. Aid encourages the dumping of obsolete machines and technologies in Nigeria, and contributes its quota to capital flight in Nigeria.

## 5. Recommendations

Recently, there has been a paradigm shift from the advocates of dependency theorists as manifested in the works of Walter Rodney's 'How Europe Underdeveloped Africa' to Igwe's and Ghanaian Chronicles' 'How Africa underdeveloped Africa' and Ogbu-Agbe's 'How Nigeria undeveloped Nigeria' which all articulates Africa's problems as self-inflicted. Though not totally discarding the effect of

colonialism, Neo-colonialism and imperialism, the reality of the matter they argued is that the major culprits of the destruction of Africa today, are Africans themselves. This they alluded to as poverty, hunger, war, environmental/ecological degradation, religious and ethnic conflicts, political instability, leadership inertia and bad governance, among others (Nnadozie, 2010).

In the light of the above, this paper adopts the recommendations of Emeh (2013):

- African leaders and scholars should accept responsibility and try to fix her problems than shifting blame.
- African leaders should invest in their home countries because without which unemployment, poverty and infrastructural dearth will continue.
- A total revamp of Africa's political landscape where democratic institutions and culture will be entrenched.
- Education, enlightenment and peaceful co-existence should thrive.

## 6. Conclusion

There is no iota of doubt to the fact that external factors contributed and still contribute their quota to the development of underdevelopment in Nigeria, but just like Stanley Igwe (2012) suggests: internal factors such as corruption, inter-ethnic rivalry contribute their quota to the continued geometrical underdevelopment in Nigeria.

The major contention or argument against foreign aid, especially from the Nigerian context, is that it encourages corruption and prevents recipient countries from using their initiatives as well as the potentials of their people to achieve a better standard of living in their countries. Another major argument against foreign aid is that it makes the people lack the moral obligation to question their politicians on how national treasury was mismanaged. This explains that they were not the people that generated the revenue.

This means both side of the divide have their fair share of the blame. The West and Africans, and off course, Nigerians are all culpable.

## References

- Abigail, W. (2015). A Critique of Development Theory: Dependency Theory. [www.academia.edu](http://www.academia.edu). ID#620054157.
- Ake, C. (1981). A Political Economy of Africa, London. Longman Press.
- Alapiki, H (2005). (ed.) The Political Economy of Globalization. Port-Harcourt, University of Port Harcourt Press.
- Calderisi, Robert (2006). The Trouble with Africa: Why Foreign Aid Isn't Working. Palgrave Macmillan. New York.
- Easterly, P. (2006). The Realities of Foreign Aid to Third World Countries. London. Kegan Paul.
- Emeh, I.E.J (2013). "Dependency Theory and Africa's Underdevelopment: a Paradigm Shift from Pseudo-Intellectualism: The Nigerian Perspective" International Journal of African and Asian Studies – An Open Access International Journal Vol. 1. 2013.
- Kabonga, I (2017). "Dependency Theory and Donor Aid: A critical Analysis" Journal of Development Studies. August 2017. <https://www.researchgate.net/publication/3202241241>
- Igwe, S. (2012) How Africa Underdeveloped Africa. Port-Harcourt, Prime Print Technologies.
- Moyo, D. (2009). Dead Aid: Why Aid Is Not Working and There Is a Way for Africa. New York: Straus and Giroux.
- Nnadozie, O.U. (2010). Why Poverty In Africa. Nsukka, Bel's Book.
- Nnekabari, N. (2002). Contemporary Political Analysis. Springfield Publishers, Owerri.
- Nwaorgu, C. Monopoly Capitalism and Development Tragedy, A Study in Imperialism, Globalization and Underdevelopment, Port-Harcourt. 2006.
- Ope-Agbe, Fazil, O (2007). "How Nigerians Underdeveloped Nigeria". [www.dawodu.com/agbe3.htm](http://www.dawodu.com/agbe3.htm)
- Rodney, W. (1972). How Europe Underdeveloped Africa. Washington: Howard University Press.
- Thomas, A.N. (2010). The Praxis of Development and Underdevelopment. Ethiope Publishing Corporation. Benin City, Nigeria
- White, John (1974). The Politics of Foreign Aid. The Bodley Head Ltd. London

**Part Two**  
**Educational Psychology**



## Does Resilience Moderate Academic Motivation and Academic Performance of Secondary School Students in Ogun East Senatorial District, Nigeria?

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**Abstract.** This study investigated the moderating effect of resilience in the relationship between academic motivation and academic performance among secondary school students in Ogun east Senatorial district. The study adopted a survey research design. Four hundred and ninety-eight (498) students selected from nine secondary schools were involved. Data were collected using four instruments. Two standardized instruments: Academic Motivation Scale (AMS) and Adolescent Resiliency Attitudes Scale (ARAS) while achievement Test results in Mathematics and English Language were used as instruments for Academic performance. The findings showed that resilience have no moderating effect between the independent and the criterion variables. It however found relationship between resilience and academic motivation; between resilience and academic performance; and relationship between academic motivation and academic performance. Based on the findings of the study, some recommendations were made to stakeholders in the school system.

**Keywords:** Resilience; academic performance, academic motivation

### 1. Background to the Problem

Academic performance is one of the indices of measuring educational attainment of learners/students globally. It is one of the

important issues in the education system. Academic performance has been largely associated with many factors such as school factors, students' factors, peer factors and family factors. There are also lots of psychological variables affecting academic performance. Such include, but not limited, to self-esteem, self-concept, personality traits and motivation. It has been observed that stakeholders in the education industry, including parents, teachers, governmental agencies and other non-state actors, have raised concerns and worries about academic performance of the young ones and come to agree to the fact that the huge investment in education has not yielded the desired dividend. Based on the downward trend in students' academic performance, Nwadiae (2011) reported that there has been a consensus by stakeholders about the fallen standard of education. Uduh (2009) also submitted that there is abysmal failure of students in public examinations in Nigeria, particularly at the secondary level of education.

The dwindling fortune is presently being recorded in both internal and external examinations taken by the students. For instance, Nigerian examination bodies revealed that of all the secondary school candidates that registered for the West African School Certificate Examination (WASCE) in 2007 only 32.36% passed at the five-credit level and in the subsequent years the percentage passes at five

credit level dropped to 27.63% in 2008. A worse scenario was reported in 2009 when ninety-nine percent (98%) of students who sat for the November/December 2009 examination of the National Examination Council (NECO) failed. The report noted that only 4,223 out of the 236,613 candidates (representing 1.9%) who sat for the examination, had credits in five subjects, including English and Mathematics.

Nwadiae (2011) revealed that the last three results released by the Council (NECO) had been bad news for most candidates; with less than 22% of them obtaining credits in five subjects, including core subjects (English Language and Mathematics). In 2008, 23% of the candidates passed; in 2009, 21% passed and in 2010, 20% passed, while many had their results seized due to their involvement in examination malpractices. Although there was an improvement in 2011 result, when 677,007 which represents (42%) candidates out of 1,351,557 candidates that sat for the May/June examination passed, 60% students passed the GCE, while 40% passed in Unified Tertiary Matriculation Examination (UTME) organized Joint Admissions Matriculation Board (JAMB) but this is yet to meet the expectations of all the stakeholders

The issue of academic performance at the secondary level of education in Nigeria has been widely documented. Ademola (2010) reported that there could not have been a worse period for the Nigerian educational system than the disclosure. The consistently poor performance recorded in WASCE and NECO examinations, over the years, calls for serious interventions. Arising from the noticed gap, several researches have been conducted to investigate ways of improving academic achievement and have found out that inadequate motivation for students, among other factors, is a disincentive to learning and academic achievement (Sikhwari, 2014). Secondary school students are daily confronted with challenges of coping with academics under serious emotional strains occasioned by poor school environment (Aworanti, 2008) and learn in perceived unmotivated in relations to motivation and achievement (Gilbert *et al.*, 2014). Teachers

equally complain of students' low performance at internal and public examinations. In the last six years, WASCE and NECO results were nothing to write home about. One of the greatest frustrations mentioned by many teachers is that students are often not motivated to learn.

Motivation is essential to learning, perhaps, that is why it has been described as a process through which individuals instigate and sustain goal-directed activity. It can also generally be viewed as a process through which an individual's needs and desires are set in motion (Kian, Yussof & Rajah, 2014; Turan 2015). Knight and Willmott (2007) stated that motivation is what gets you going, keeps you going and determines where you are trying to go. It is the biological, emotional, cognitive, or social forces that activate and direct behaviour. Deci and Ryan (2016) see motivation as the tendency of an intelligent system to behave either appetitive or aversively to certain stimuli. One of the most important concepts in education is that of motivation. Indeed, many researchers (Lin, 2012; Orhan-Özen, 2017; Sharma & Sharma, 2018) have shown that motivation is related to various outcomes; such as curiosity, persistency, learning, achievement and performance.

Academic motivation reflects students' level of persistence, interest in the subject matter and academic effort. It is also viewed as a contributor to academic success, (Alexander, 2006; Diperna & Elliot, 1999). Academic motivation is discussed in terms of an individual's judgment of his or her capabilities to perform given actions. Academic motivation, according to Awan, Noureen and Naz, (2011) is an internal condition that stimulates, direct and maintains student behaviour, and they believe that there is a strong relationship between learning and motivation. Students who are motivated to learn about a topic are keen to engage in activities they believe will help them learn, such as attending carefully to the instruction, taking notes to facilitate subsequent studying, checking their level of understanding and asking for help when they do not understand the material (Pintrich & Schunk, 2002).

Learning environments may present challenges, but the secondary school environment presents unique challenges because students in this stage of education have so many important decisions to make about their future and they bear more responsibilities for their own learning outcome. The development of early academic motivation at secondary school level stage especially, has significant implication for later academic careers. Findings have established a nexus between students' level of academic motivation and level of academic achievement and school drop-out rates (Reiss, 2000). However, students that are "at risks" for, or experiencing frustration with learning are at greater risk for decreased academic motivation. The consequences of decreased academic motivation can result in a variety of non-productive behaviour such as non-compliance on new task, self-doubt, dependency on others and loss of interest and energy dissipation (Elias & Arnold, 2006), barrier to learning and deterioration of education standards (Awan et al., 2011). School learning, therefore, is unlikely to take place in the absence of sufficient motivation to learn.

While motivation is imperative to learning and possibly academic performance, it is possible that its relationship may be influenced by other variables. Thus, this study is interested in seeing if resilience would moderate the relationship between academic motivation and academic performance. Resilience refers to the successful adaptation to challenging and threatening situation (Stewart, Reid, & Mangham, 1997). Resilience is one of the most essential personal factors influencing academic achievement and it is the ability to pass the hardest problems and overcome the most complex situations. (Cicchette, 2013). Bonanno, Galea, Bucciarelli, and Vlahov (2007) submitted that people who have high levels of resilience display only mild, transient disruptions in daily functioning following trauma and continue to function in a near normal and healthy fashion.

Resilience is a construct that is closely related to stress, it is the collective mechanisms by which a person copes with and recovers from the negative emotions that often accompany stress (Compas & Reeslund, 2009; Lyubomirsky, &

Porta, 2010; Masten, 2011). The focus of resilience is upon positive outcomes and successful adaptations (Hjemdal, Friborg, & Stiles 2012; Masten, 2011; Masten, Herbers, Cutuli, & Lafavor, 2008), as well as how well students sustain in academic exercise and psychological well-being during challenging situations posing stress experiences and potential risks of negative outcomes (Zautra, Hall, & Murray, 2010).

Altogether, students' academic achievement and academic motivation' conditions are perceived to be associated with levels of resilience. Results from studies of resilience have indicated that resilience may moderate the negative effects of stressors and contribute to promoting mental health and prevent the development of psychopathology, despite the individual's exposure to significant risks (Luthar, Cicchetti, & Becker 2000; Masten, Herbers & Reed 2009; Rutter, 2000), moderates pain and stress (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003), as well as moderates the relationship between stress and psychological symptoms (Pinquart, 2009) and between maltreatment and psychological symptoms (Campbell-Skills, Cohana, & Stein 2006). However, there is paucity of research, to the best knowledge of the researchers that have investigated whether resilience moderates the relationship between academic motivation and academic performance.

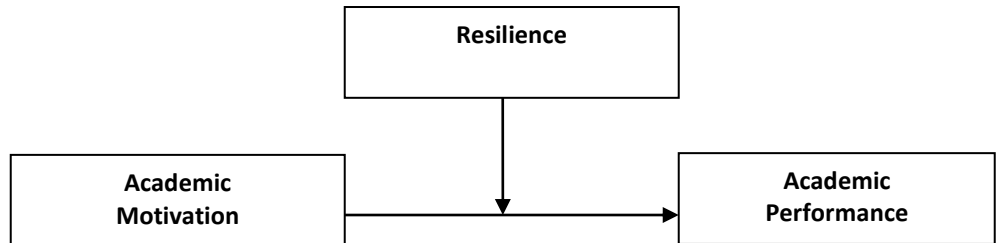
Several studies have been conducted on the relationship between academic motivation and academic performance with most findings indicating that the higher the academic motivation levels of students, the higher their academic performance. This however seems to be generalistic in nature because this may not apply to all. There is expected to be exceptional cases herein high academic motivation may not translate to high academic performance. Resilience of students may play a moderating role in the relationship between academic motivation and academic performance, with high academic motivation predicting high academic performance only for students with high level of resilience. This is however a conjecture.

Few or no previous research had been carried out to investigate together resilience, academic motivation and academic performance in a single study, at least to the knowledge of the researchers. Thus, this study is to examine the potency of resilience in the relationship of students' academic motivation and academic performance among secondary school students in Ogun East Senatorial District, Nigeria.

*Two hypotheses were formulated and tested:*

- There is no significant moderating effect of resilience on the relationship between academic motivation and academic performance among secondary school students in Ogun East Senatorial District, Nigeria.
- There is no significant relationship between academic motivation and academic performance among secondary school students in Ogun East Senatorial District Nigeria.

A model was therefore built for the study as shown in Figure 1



**Fig. 1: Conceptual Model for the Study**

**2. Method**

The study adopted the descriptive survey research design because the variables to be studied already existed, and there was no need for manipulation of any sort.

Five hundred students selected from the nine (9) Local Government Areas in Ogun East Senatorial District, Ogun State, Nigeria participated in the study. A multi-stage process was used to select the sample. The first stage of sampling involved the selection of Local Government Areas. 50% of the Local Government Areas in Ogun East Senatorial District were selected through simple random sampling. Since there are nine (9) Local Government Areas in the District, five Local Government Areas were drawn. The second stage involved the selection of schools. From the sampled Local Government areas, ten (10) senior secondary schools were randomly sampled. This makes up a total of 50 schools used for the study. The third and final stage of sampling involved the selection of students.

From each of the schools, ten (10) Senior Secondary School III (SSS3) students were randomly sampled from those who showed intention to participate in the study. Four hundred and ninety-eight (498) properly filled instruments were used for data analysis. It must be noted that out of five hundred participants for the study, a total of four hundred and ninety-eight completed all the stages of data collection to serve as the active sample for the study because two instruments were missed.

**2.1 Research Instruments**

Four instruments were used for data collection. Two standardized instruments: Academic Motivation Scale (AMS) high school version developed by Vallerand, Blais, Briere, and Pelletier (1992). and Adolescent Resiliency Attitudes Scale (ARAS) developed by Biscoe and Harris (1994) were used to elicit information on Academic motivation and Resilience while Achievement Test Results in Mathematics and English Language were used as instruments for Academic performance – the results of two

courses were used because they are general courses taken by all participants. The instruments were administered personally and with support of two research assistants and all the filled instruments were collected immediately. Data

resulting from the instruments were analyzed using regression analysis, with significant level fixed at 0.05.

### 3. Results

Table 1: *Descriptive statistics of participants' Academic Motivation, Resilience, and Academic Performance*

	Minimum	Maximum	Mean	Std. Deviation	Skewness (SE = .110 )	Kurtosis (SE = .220)
Motivation	50.00	172.00	102.1258	16.18718	-.582	1.174
Resilience	22.00	72.00	40.5335	6.02749	-.115	1.010
English	.00	10.00	5.8012	2.22902	-.379	-.707
Mathematics	.00	15.00	4.8073	1.67641	.338	2.099
Overall Performance	3.00	19.00	10.6085	3.15695	-.180	-.673

Table 1 revealed scores for students' academic motivation with mean (102.1258), median (106.0000), variance (262.025) and standard deviation (16.18718). The distribution scores indicated that students' motivation is high. Also the scores of participants' resilience showed Mean (40.5335), median (41.0000), variance (36.331), and standard deviation (6.02749) which indicates that participants' resilience is high. With respect to achievement, in English, participants had Mean (5.8012), median (6.000), variance (4.969), and standard deviation (2.22902). The distribution showed that students' achievement in English is high. While in mathematics, it revealed mean score of 4.8073, median (5.000), variance (2.810), and standard deviation (1.67641). The distribution of scores showed that participants' achievement in mathematics is positively skewed (.338).

Results also indicated scores of participants' academic performance with mean (10.6085), median (10.6476), variance (9.966) and standard deviation (3.15695). The distribution of scores showed that participants' academic performance is about average. Since the mean is lower than the median, the distribution is negatively skewed (-.180).

#### *Correlation Analysis*

Pearson product moment correlation was carried out to determine the bivariate relationships among the variables of the study. The results are presented in Table 3

Table 2: *Correlation matrix for the relationship among study variables*

	Motivation	Resilience	English	Maths	Achievement
Motivation	1	.501**	.076	.093*	.103*
Resilience	.501**	1	.018	.036	.032
English	.076	.018	1	.293**	.861**
Maths	.093*	.036	.293**	1	.738**
Achievement	.103*	.032	.861**	.738**	1

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

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

Table 2 revealed significant relationships among study variables. Academic motivation and resilience are positively and significantly correlated ( $r = .501, p < .01$ ). Also, academic motivation correlated positively and significantly with academic performance ( $r = .103, p < .05$ ). However, no significant relationship existed between resilience and academic performance ( $r = .032, p > .05$ ).

There is no significant moderating effect of resilience on the relationship between academic motivation and academic performance.

Table 3 presents multiple regression analysis with conditional process macro (Model 1) by Hayes (2016).

Table 3: *Analysis of the effect of Resilience between Academic motivation and Academic performance.*

	Coeff	Se	T	P	LLCI	ULCI
Constant	10.726	.154	69.598	.000	10.424	11.029
Resilience	-.016	.027	-.579	.563	-.069	.038
Motivation	.017	.010	1.621	.106	-.004	.037
Interaction	-.002	.001	-1.915	.056	-.005	.000
<b>Model Summary</b>						
R	R-sq	MSE	F	df1	df2	P
.135	.018	9.845	3.027	3.000	489.000	.029
<b>R-square increase due to interaction(s): int_1 Motivation X Resilience</b>						
	R <sup>2</sup> -chng	F	df1	df2	P	
Interaction	.007	3.668	1.000	489.000	.056	

Result in Table 3 revealed no significant moderating effect of resilience between academic motivation and academic performance (coeff = - .022,  $p > .05$ ). However, the model predicted 1.8% of the variance in participants’ academic performance ( $R^2 = .018$ ,  $F(3,489) = 3.027$ ,  $P < .05$ ). The increase in  $R^2$  one to the interaction of motivation and resilience on academic was also not significant ( $R^2$  change = .007,  $F(1,489) = 3.668$ ,  $P > .05$ ).

This predicted 0.7% of the variance in participants’ academic performance. In effect, resilience would not interact with academic motivation to influence participants’ academic performance.

Table 4: *Conditional effect of Resilience on motivation and Academic performance at various values of Resilience*

Resilience	Effect	Se	t	P	LLCI	ULCI
-6.027	.031	.011	2.799	.005	.009	.054
.000	.017	.010	1.621	.106	-.004	.037
6.027	.002	.014	.165	.869	-.026	.031

Values for quantitative moderators are the mean and plus/minus one SD from mean.

Values for dichotomous moderators are the two values of the moderator.

The results in Table 4 showed the conditional effect of resilience between academic motivation and academic performance. The results revealed significant effect of resilience between motivation and academic performance, only when resilience is low (coeff = .031,  $t = 2.799$ ,  $p < .01$ ). In effect, academic performance for students with low level of resilience rather than those with average or high levels of resilience.

Table 4 showed the various values of motivation, resilience and academic performance for the plotting of interaction graph. The graph is presented in Figure 2

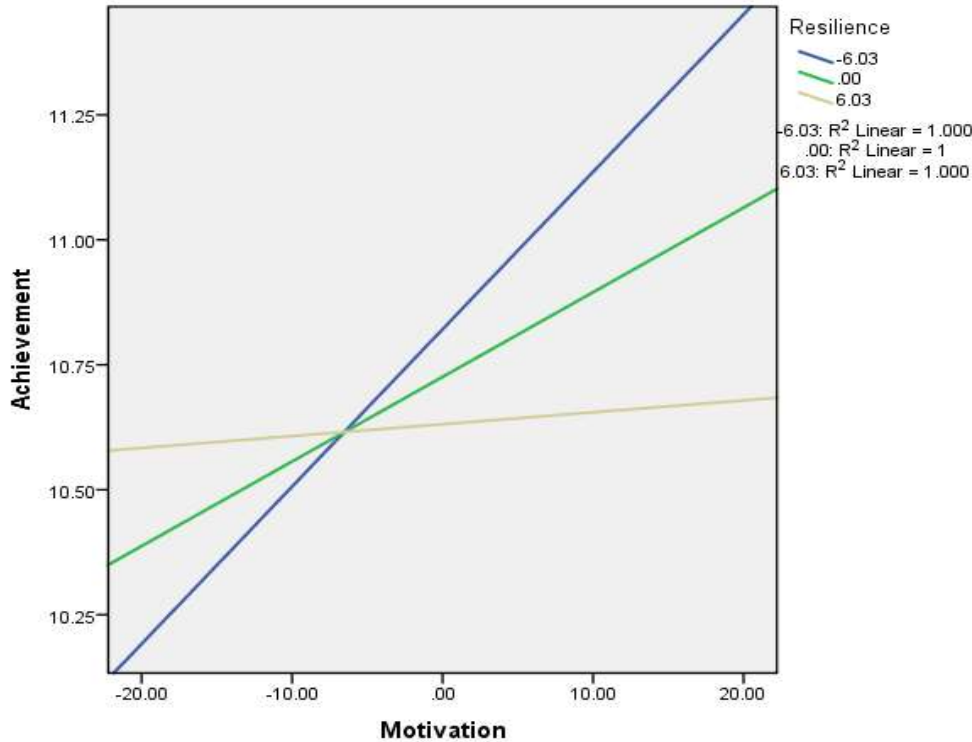


Figure 2: Interaction effect of resilience between academic motivation and academic performance.

#### 4. Discussion

Hypothesis one stated that there is no significant moderating effect of resilience on the relationship between academic motivation and academic performance among senior secondary school students in Ogun East Senatorial District, Nigeria. Results of the findings showed that there was no significant moderating effect of resilience in the relationship between academic motivation and academic performance among participants. In fact, the results revealed significant effect of resilience between motivation and academic performance, only when resilience is low. This was an unexpected finding because it contradicted earlier findings that resilience showed enhanced academic achievement of students (Khalaf, 2014; Kyuper, 2014; Mwangi & Ileri, 2017; Rationan & Phlainoi, 2014). By these results, resilience has no significant moderating effect on academic performance of the students.

The second null hypothesis stated that, there is no significant relationship between academic motivation and academic performance among secondary school students in Ogun East

Senatorial District, Nigeria. The finding established a significant relationship between academic motivation and academic performance. The result agreed with empirical literature that had established relationship between academic motivation and academic performance (Çetin, (2015). The result also showed that resilience has linear relationship with academic motivation; and also with academic performance. These results supported previous findings of Martin and Marsh (2009) who discovered a significant relationship between academic motivation and resilience and Werner (2000) who also found a significant relationship between resilience and academic performance. These results were also corroborated earlier results that resilience was significantly correlated with academic performance (Luthar et al., 2000); resilience correlated with academic confidence (Oke, Ayodele, Aladenusi & Oyinloye, 2016).

#### 5. Conclusion and Recommendations

Thus far, this study has investigated the moderating role of resilience on academic

motivation and academic performance among senior secondary school students in Ogun East Senatorial District, Nigeria. It concludes that although resilience did not moderate the relationship between academic motivation and academic performance, it has significant relationship with both academic motivation and academic performance individually. Academic motivation and academic performance are also related. The following recommendations are made as a result of the findings of this study:

- The School system should pay attention to factors that affect students' achievement such as, use of study materials, variety of teaching methods, improved teacher-student relationship in the teacher learning process.
- Efforts should be made to shore up the validity of the Senior Secondary School Certificate Examination to enable it to discriminate between high and low achievers.
- Secondary school students should be motivated at home and in school to have better academic performance. This motivation can be in form of provision of scholarship for brilliant students, award of prizes, praises, and so on.
- The government and other education stakeholders should strengthen the counseling units in schools for monitoring learners through guidance and counseling services provided. Researchers in the field of education should conduct further studies on the variables of this study to further confirm the findings.

## References

- Alexander, P. A. (2006). *Psychology in Learning and instruction*. Upper Saddle River, JP: Pearson. Washington DC, American Psychological Association. Pp 66-70.
- Awan, Noureen & Naz (2011). A study of relationship between achievement motivation, self-concept and achievement in English and Mathematics at secondary level. *International Education Studies*, 4(3), 72-79.
- Aworanti, A.O. (2008). Why Candidate fails in Public Examination. Being a paper presented at the Federal Ministry of Education, National Stakeholders Consultative Meeting on Improving Performance in Public Examination at the National Universities Commission (NUC), Abuja.
- Biscoe, B., & Harris, B. (1994). *Adolescent Resiliency Attitudes Scale*. Oklahoma, City, OK: Eagle Ridge Institute.
- Bonanno, G. A., Galea, S., Bucciarelli, A. Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics resources and life stress. *J. Consult Clinical Psychology*, 75, 671-682
- Campbell-Skills, L., Cohana, S. L. and Stein, M.B. (2006). Relationship of resilience to personality, coping and psychiatric symptoms in young adults. *Behaviour Res. & Therapy*, 44 (4): 585–599.
- Çetin, B. (2015). Academic Motivation and Self-Regulated Learning in Predicting Academic Achievement in College. *Journal of International Education Research*, 11(2), 95–106.
- Cicchetti D. (2013). Annual Research Review: Resilient functioning in maltreated children—past, present, and future perspectives. *Journal of Child Psychology and Psychiatry*, 54,402–422.
- Compas, B. E. & Reeslund, K. L. (2009) Processes of risk and resilience during adolescence. *Handbook of Adolescent Psychology*
- De Castella, K., & Byrne, D. (2015). My intelligence may be more malleable than yours: The revised implicit theories of intelligence (self-theory) scale is a better predictor of achievement, motivation, and student disengagement. *European Journal of Psychology of Education*, 30(3), 245–267.
- Deci, E. L., & Ryan, R. M. (2016). Optimizing Students' Motivation in the Era of Testing and Pressure: A Self-Determination Theory Perspective. In

- Building Autonomous Learners. Singapore: Springer.
- Diperna, J. & Elliot, S. (1999). Development and Validation of the Academic Competence Evaluation Scales. *Journal of Psycho-educational Assessment*, 17.
- Elias, M.J., & Arnold, J. (Eds.). (2006). *The educator's guide to emotional intelligence and academic achievement*. Thousand Oaks, CA: Corwin Press.
- Friborg, O., Hjemdal, O., Rosenvinge, J.H., and Martinussen, M. (2003) A New rating Scale for Adult resilience: what are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research*, 12(2), 65-76.
- Gilbert, M. C., Musu-Gillette, L. E., Woolley, M. E., Karabenick, S. A., Strutchens, M. E., & Martin, W. G. (2014). Student perceptions of the classroom environment: Relations to Motivation and Achievement in Mathematics. *Learning Environments Research*, 17(2), 287-304
- Hjemdal, O., Friborg, O., & Stiles, T. C. (2012). Resilience is a good predictor of hopelessness even after accounting for stressful life events, mood and personality (NEO-PI-R) *Scandinavian Journal of Psychology*, 53(2), 174-180.
- Khalaf M. A. (2014) Validity and reliability of the academic resilience scale in the Egyptian context. *US-China Education Review* 4(3), 202-210.
- Kian, T., Yusoff, W., & Rajah, S. (2014). Motivation for generations' cohorts: An Organizational Justice Perspective. *International Journal of Management Sciences*, 11(2), 536-542
- Knight, D. & Willmott, H. (2007). *Organizational Behaviour and Management*. New York: Plenum.
- Kyuper, N. (2014). *The Influence of Schooling on the Resilient Behaviour and Academic Performance of Poverty-Stricken Adolescents in Gueteng Schools* (Unpublished Master's Thesis), University of South Africa
- Lin, L. C. (2012). *Measuring Adult Learners' Foreign Language Anxiety, Motivational Factors, and Achievement Expectations: A Comparative Study between Chinese as a Second-Language Students and English as a Second-Language Students* (Unpublished Doctoral Dissertation). Cleveland State University.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71 (3), 543-562.
- Lyubomirsky, S. & Della Porta, M. (2010). Boosting happiness, buttressing resilience: Results from cognitive and behavioural interventions. In J. W. Reich, A. J. Zautra, & J. Hall (Eds) *Handbook of adult resilience: Concepts, methods and applications* (pp. 450-464). New York: Guilford Press.
- Martin, A. J. & Marsh, H. W. (2009). Academic resilience and academic buoyancy: Multidimensional and hierarchical conceptual framing of causes, correlates, and cognate construct. *Oxford Review of Education*, 35, 353-370.
- Masten, A. S., Herbers, J. E., Cutuli, J. J., & Lafavor, T. L. (2008). Promoting competence and resilience in the school context. *Professional School Counseling*, 12, 76-84
- Masten A. S. (2011). Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology*, 23(2), 141-154.
- Mwangi, C. N., & Ireri, A. M. (2017). Gender differences in academic resilience and academic achievement among secondary school students in Kiambu County, Kenya. *Psychology and Behavioural Science* 5(5), 1-7.
- Nwadiae, M.A. (2011). *Improving Student Retention and Achievement: What do we know and what do we need to find out? Learning and Skill Development Agency (LSDA) reports 2011*.
- Oke, K., Ayodele, K. O., Aladenusi, O. & Oyinloye, C. A. (2016). Academic motivation, satisfaction, and resilience as predictors of secondary school

- students' academic confidence in Ogun State, Nigeria. *IOSR Journal of Research & Method in Education* 6(6), 59-64
- Orhan-Özen, S. (2017). The Effect of Motivation on Student Achievement in E. Karadağ (ed.), E. Karadağ (ed.), The Effect of Anxiety on Student Achievement (pp.35-56) Springer International Publishing
- Pinquart, M. (2009) Moderating effects of dispositional resilience on associations between hassles and psychological distress *Journal of Applied Developmental Psychology* 30(1):53-60
- Pintrich, P. R., Marx, R. W. & Boyle, R. A. (1993). Beyond cold conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of Educational Research*, 3, 56 -67
- Ratioran, S., Phlainoi, S. (2014). Promoting resilience in school children in urban slums. *Journal of Social Sciences and Humanities* 1(1): 73-82
- Reiss, S. (2009) Six Motivational Reasons for Low School Achievement. *Child and Youth Care Forum* 38(4),219-225
- Sharma, D. & Sharma, S. (2018). Relationship between motivation and academic achievement. *International Journal of Advances in Scientific Research* 4(1): 01-05.
- Sikhwari, T. D. (2014). A Study of the Relationship between Motivation, Self-concept and Academic Achievement of Students at a University in Limpopo Province, South Africa. *Int J Edu Sci*, 6(1), 19-25
- Stewart, M., Reid, G., & Mangham, C. (1997). Fostering children's resilience. *Journal of Pediatric Nursing*, 12, 21-31
- Turan, Z. (2015). The evaluation of flipped classroom method and examination of its effects on academic achievement, cognitive load and motivation (Unpublished Doctoral dissertation). Atatürk University, Erzurum.
- Uduh, C. A. O. (2009). Managing examination crisis in Nigeria: The West African Examinations Council (WAEC)'s experience. A paper presented at the 27th annual conference of the Association for Educational Assessment in Africa (AEAA) in Yaounde, Cameroon. August 24-28.
- Vallerand, R. J., Pelletier, L. G. Blais, M. R. Briere, N. M., Senecal, C. & Vallieres E. F. (1992). The Academic Motivation Scale: A Measure of Intrinsic, Extrinsic, and Amotivation in Education. *Educational and Psychological measurement*, 52(4), 1003-1017
- Werner, E. E. (2000). Protective factors and individual resilience. In: Shonkoff J. P., Meisels, S. J. (eds). *Handbook of early childhood intervention*. New York: Cambridge pp. 115–132.
- Zautra, A. J., Hall, J. S., & Murray, K. E. (2010) Resilience: A new definition of health for people and communities. In Reich, J. W., Zautra, A. J., & Hall, J. S. (Eds.) *Handbook of adult resilience*. The Guildford Press, New York, pp. 3-30.

## Work Demand and Psychological Distress among Pre-School Pupils' Caregivers: Does Resilience Matter?

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**Abstract.** This study investigated the moderating effect of resilience between work demand and psychological distress among preschool pupils' caregivers in Ekiti State, Nigeria. A descriptive survey research design was adopted with a sample of 605 caregivers was chosen through stratified random sampling technique participating. Data were collected using: (i) Demographic Data Form, (ii) Kessler Psychological Distress Scale, (iii) Perceived Work Demand Scale, and (iv) Connor-Davison Resilience Scale. Data were analyzed using Regression Analysis and Pearson Product Moment Correlation Coefficient with result tested for significant at .05 level. Findings revealed, that there is a significant positive relationship between psychological distress and resilience ( $r = .263$ ;  $p < .001$ ), but not between psychological distress and work demand ( $r = .071$ ;  $p > .05$ ). There was a moderating effect of resilience in the relationship between work demand and psychological distress of caregivers. Based on the findings, recommendations were made for research and practice.

**Keywords:** Caregivers; Pre-School Pupils; Psychological Distress; Resilience; Work Demand

### 1. Introduction

Numerous studies have been conducted on psychological distress. This might not be unconnected with its negative impacts on individuals and organizations. Psychological distress has been defined in numerous ways. It is a general term used to describe unpleasant feelings or emotions that impact the level of functioning. In other words, it is the psychological discomfort that interferes with ones activities of daily living. It is largely defined as a state of emotional suffering characterized by symptoms of depression (e.g., loss of interest; sadness; hopelessness) and anxiety - e.g., restlessness; feeling tense (Mirowsky & Ross, 2002). Psychological distress can result in negative views of the environment, others, and the self.

Literature confirms the relationship between psychological distress and variables like job insecurity, suggesting that increased levels of job insecurity are associated with increased levels of psychological distress (Mofokeng, 2008), limitations in day-to-day activities due to emotional problems (Muhsen, Garty-Sandalon, Gross, & Green, 2010), maladaptive use of both the Internet and the mobile phone (Beranuy, Oberst, Carbonell, & Chamarro, 2009), smoking

status (Holm *et al.*, 2010), higher suicidal ideation, even when accounting for resiliency (Cleverley & Kidd, 2011), preoperative anxiety, depression, and postoperative pain (Chou *et al.*, 2016), psychosocial work environment (Salas *et al.*, 2015), sleep disturbances (Almoznino *et al.*, 2015), quality of life (Wang, Li, Stanton, & Fang, 2010), and impaired health-related quality of life (Hyphantis, 2011). The severity of psychological distress is negatively associated with job satisfaction (Lee, Lee, Liao, & Chiang, 2009). It is expected that high work demand would lead to high psychological distress. However, limited studies have examined the relationship between work demand and psychological distress. For example Shimazu, Bakker, Demerouti and Peeters (2009) found that job demands were only directly related to psychological distress.

Psychological stress have been widely studied especially among medical undergraduate students (Radeef & Faisal, 2014), medical workers (Minnotte, Gravelle, & Minnotte, 2013), and hospital nurses (Kunie, Kawakami, Shimazu, Yonekura, & Miyamoto, 2013). Studies have also been conducted on psychological distress among nursing students (Zhang *et al.*, 2016), and drug users (Scott *et al.*, 2016; Yi *et al.*, 2016).

Psychological distress have also been investigated among caregivers particularly of people with chronic obstructive pulmonary disease (COPD: Grant, Cavanagh, & Yorke, 2012), patients with psychosis (Koutra, Simos, Triliva, Lionis, & Vgontzas, 2016), patients with schizophrenia (Chen *et al.*, 2016), symptomatic lung cancer patients (Mosher *et al.*, 2016), women with ovarian cancer (Butow *et al.*, 2014), patients with lung cancer (Porter *et al.*, 2011; Porter, Keefe, Garst, McBride, & Baucom, 2008), and individuals with affective disorders (Zendjidjian *et al.*, 2012).

Work demand are the psychological stressors involved in accomplishing the workload, stressors related to unexpected tasks, and stressors of job-related personal conflict (Bakker & Demerouti, 2007; Karasek, 1979). Job demands refer to the things that have to be done or activities to be performed, and include the

physical, social or organizational aspects of the job that require sustained physical and mental effort (Demerouti *et al.*, 2001). Job demands include situational factors such as role ambiguity, role conflict, stressful events, heavy workload and work pressure, pressure to make critical and immediate decisions, being assigned more responsibility, and having to meet deadlines (Rothmann & Joubert, 2007; Schaufeli & Enzmann, 1998). Job demand is hindrance job stressors or work circumstances that involve excessive or undesirable constraints that interfere with or inhibit an individual's ability to achieve valued goal (LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007). To Schaufeli and Taris (2014) job demands consume energy and may therefore eventually lead to exhaustion and related health problems (the health impairment process). Work demands refer to pressures arising from excessive workload and time pressures (Yildirim & Aycan (2008).

Literature suggests that work demands such as number of hours worked, workload, shift work are positively associated with work-family conflict. Work demand has been positively linked with burnout syndrome and musculoskeletal complaints, higher work stimuli were associated with lower burnout (Jaworek, Marek, Karwowski, Andrzejczak, & Genaidy, 2010). Qiu, Bures, & Shehan (2012) found that work demands put higher-educated workers at risk of less favorable health outcomes. Higher job demands are detrimental in men, whereas for men, it seems to be more related to work demands (Pons, Ramos, & Ramos, 2016). Pons, Ramos, and Ramos (2016) observed that higher job demands stimulate promotion of ideas among men but were detrimental for innovation among women. In another study the 'costs' of psychosocial work demands were stronger among women (Qiu *et al.*, 2012). Linton *et al.* (2015) found that high work demands, job strain, bullying, and effort-reward imbalance were related to more future sleep disturbances. Job demands were only directly related to psychological distress (Shimazu *et al.*, 2009). Awadh, Gichinga, and Ahmed (2015) also found that a strong positive correlation existed between performance and job demand.

Resilience is a term used across all research disciplines and in everyday discourse (Molyneaux, Brown, Wagner, & Foster, 2016). According to Exner *et al.* (2016), resilience has become a prominent concept to understand system vulnerabilities and flexible ways of adapting to crises. Resilience is typically conceptualized as successful adaptation to serious negative life events (Seery & Quinton, 2016). Slepian, Ankawi, Himawan, and France (2016) also view resilience as the ability to maintain positive emotional and physical functioning despite physical or psychological adversity. Chi *et al.* (2016) views resilience as an adaptive mindset that generally enables people to survive and thrive in adversity. Amstadter *et al.* (2016) define resilience as the difference between the twins' total score on a broad measure of internalizing symptoms and their predicted score based on their cumulative exposure to stressful life events.

Resilience relate positively to psychological well-being and negatively with psychological distress, depression and anxiety (Haddadi, & Besharat, 2010; Pakalniškienė, Viliūnienė, & Hilbig, 2016). Min, Yu, Lee, and Chae (2013) found that adaptive strategies were more strongly correlated with resilience than maladaptive strategies. Self-esteem, spirituality, quality of life, and hopelessness were correlated with resilience (Mizuno *et al.*, 2016). Ungar, Liebenberg, Dudding, Armstrong, and Van de Vijver (2013) also found resilience to be related to service satisfaction but not the quantity of services used by youths. High resilience was associated with a reduction in depression scores at higher levels of sexual abuse (Goldstein, Faulkner, & Wekeerle, 2013). Resilience has a significant positive relationship with work engagement (Mase & Tyokyaa, 2014). Negative correlation existed between job insecurity and resilience as well as resilience and general health. Individuals with high levels of resilience reported low levels on job insecurity and psychological distress (Mofokeng, 2008).

Pakalniškienė *et al.* (2016) found that resilience can even be a predictor of psychiatric symptoms. Resilience can predict severity of symptoms mindfulness and psychological well-being

(Pidgeon & Keye, 2014) and adjustment to university life and its sub-dimensions (Rahat & İlhan, 2015).

Several research models exist to showcase the mediating role of resilience in such relationship between mindfulness and life satisfaction and affect components (Bajaj & Pande, 2016), depressive symptoms and psychological health status (Liu, Chang, Wu, & Tsai, 2015) and work stress and burnout (Hao, Hong, Xu, Zhou, & Xie, 2014). Resilience also mediate the effects of age and gender on emotional distress (Cohen, Baziliansky, & Beny, 2014), and the impact of risk factors on outcomes and is affected positively by the quality, but not the quantity of the psychosocial services provided to adolescence with complex needs (Ungar *et al.*, 2013). The mediating influence of resilience between work demands and psychological distress has not been well documented. It is however conceived that with resilience, the negative effect of work demand on psychological distress would be reduced.

## 2. Statement of the Problem

Working with young children of age three to five years may not be an easy task. The work is highly challenging, and sometimes it can be wearisome, traumatic and awesome. Caregiving may be very strenuous, demanding and laborious. It can affect every area of caregivers' life; be it physical, spiritual, psychological, financial, health and as well his or her vocational wellbeing.

Caregivers face a lot of challenges in the process of carrying out their duties and responsibilities, challenges from the children, parents, colleagues the school management, environment and community at large. This situation in most cases translates to psychological distress. Studies on psychological distress have been done on caregivers of children with autism spectrum disorder (Lovell & Wetherell, 2012; 2015; 2016; Lovell, Elliot, Liu, & Wetherell, 2014) and children with asthma (Fagnano, Berkman, Wiesenthal, Butz, & Halterman, 2012), children with a disorder of sex development (Wolfe-Christensen *et al.*, 2012; 2014). However, not

much has been done on caregivers of normal preschool pupils in Nigeria generally and in Ekiti State to be specific.

In spite of numerous works on psychological distress among various workers, the incident persists and has continually been noted. While numerous empirical works have been done to determine various correlates of psychological distress, only few could be cited on the relationship between job/work demand and psychological distress. Studies have however not looked into the moderating role of resilience in the relationship between work demand, and

psychological distress among caregivers. The focus of this study therefore was to examine the moderating role of resilience in the relationship between work demand and psychological distress among preschool pupils' caregivers.

It was therefore hypothesised that there is significant moderating effect resilience in the relationship between work demand and psychological distress among preschool pupils' caregivers in Ekiti State, Nigeria. A model (Fig. 1) was therefore built to indicate the relationship among the study variables.

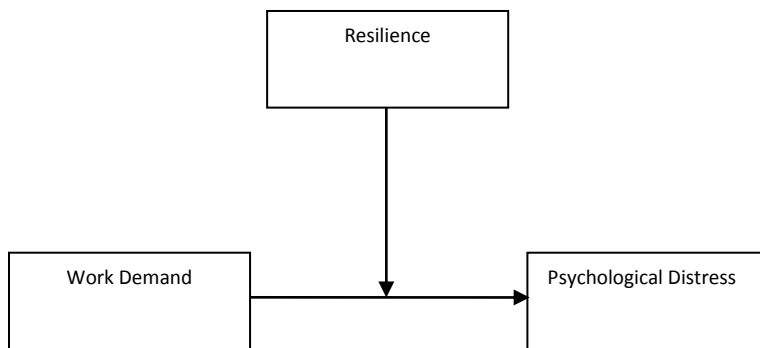


Figure 1: Conceptual model for the study

### 3. Method

#### 3.1 Design

The descriptive survey research design type was adopted in this study because it allowed for direct investigation of a large sample with the use of questionnaire without manipulation of the independent variables.

#### 3.2 Participants

A sample of 605 caregivers was chosen through proportional stratified random sampling among the 1576 caregivers in the 874 public and 702 private pre-primary schools in Ekiti State, Nigeria. All the 16 Local Government Areas in the State were used for the study. In each Local Government Area, 50% each of public schools and private schools were randomly chosen. In each school, two caregivers were randomly chosen. This gave a total sample size of 605.

#### 3.3 Instruments

##### *Demographic Data Form*

The demographic data of respondents were collected using the DDF. These data were on sex, ownership of school, age, employment status, educational status, work experience,

##### *Kessler Psychological Distress Scale (K10)*

Psychological distress was assessed in this study using The Kessler Psychological Distress Scale (K10) developed by Kessler (1996). It is a widely used self-report measure of psychological distress designed to measure depressive distress. This scale measures cognitive, affective, and behavioural symptoms of psychological distress which can be used to identify those in need of further assessment for anxiety and depression. The K10 consists of 10 items with a 5-point Likert scaling format ranging from 5 = 'All of the time', to 1 = 'None of the time'. Sample items include: "So nervous that nothing could calm you down" and "That everything was an effort". The total score ranges from 10 to 50 with the maximum score of 50 indicating severe distress whereas the minimum

score indicates no distress. Kessler *et al.* (2002), found that the Cronbach's alpha for the K10 (a measure of internal consistency reliability) to be high (.93). The brief questionnaire has been shown good construct and criterion validity being significantly associated with measures of mental health symptoms and disability as well as the frequency on consultations.

*Perceived Work Demand Scale (PWDS)*

Work demand was measured using the Perceived Work Demand Scale (PWDS). The scale was developed by Boyar, Car, Mosley, and Carson (2007) to measure job demand. It is a 5-item self-report scale measuring how the employees perceived the demands placed on them by their works in their various organizations. It is rated on a 5 point Likert-type scale with responses ranging from strongly disagree (1) to strongly agree (5). Sample items include: “My job requires all of my attention”. The scale has a reliability coefficient of .83 Cronbach’s alpha. The score on this scale range between 5 at the minimum and 25 at the maximum.

*Connor-Davidson Resilience Scale. (CD-RISC)*

Resilience was assessed using the Connor-Davison Resilience Scale developed by Connor and Davidson (2003). Connor Davidson Resilience Scale (CD-RISC) is a measure of stress coping ability; as such could be an important instrument in the diagnosis of anxiety symptoms depression, and stress reactions. Items included in the scale were selected through a search of resilience literature. The Scale comprises of 25 items, each rated on a 5-point scale (0-4), with higher scores reflecting greater resilience as follows: not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all of the time (4). Sample items

include: “Having to cope with stress can make me stronger.” “I am able to adapt when changes occur” “Under pressure, I stay focused and think clearly”. CD-RISC is a brief, self-rated measure of resilience that has sound psychometric properties (Connor & Davidson, 2003).

**3.4 Procedure**

The researchers visited each of the selected schools and explained the study mission to the head teacher/school authority, and obtained permission to administer the instruments on the caregivers. Thereafter, the caregivers were met in their classrooms during break time. The purpose of the study was again explained with an assurance of the confidentiality of their responses. They were informed that they are free to decide whether to participate in the study or not. Caregivers who willing chose to participate were administered with the instruments. The instruments were administered as a battery by the researchers. The researchers waited for the participants to complete the questionnaires which were collected immediately after completion. Data were analyzed using both descriptive and inferential data analyses. Regressions Analysis and Pearson Product Moment Correlation were used to test the hypotheses.

**4. Results**

*Preliminary Analysis of Data*

Initial analysis was conducted on the data to determine the range, mean, and standard deviation of the scores of the variables of the study. Pearson Product Moment Correlation was also conducted. Results are as presented in Tables 1 and 2.

Table 1: *Descriptive Statistics of range, mean, standard deviation, skewness and kurtosis of the scores of the study variables*

	Range	Min.	Max.	Mean	Std. Dev.	Skewness (SE =.099 )	Kurtosis (SE = .198)
Psychological Distress	61.00	30.00	91.00	43.922	4.427	2.111	23.611
Work Demand	16.00	5.00	21.00	15.255	3.233	-1.115	1.051
Resilience	77.00	11.00	88.00	62.488	17.888	-.698	-.559

Table 2: *Correlations Matrix of the relationship among study variables*

	Psychological Distress	Work Demand	Resilience
Psychological Distress	1	.071	.263**
Work Demand		1	.372**
Resilience			1

\*\*  $p < .001$

The results in Table 2 revealed significant relationships among the study variables. Psychological distress was found to be related to resilience ( $r = .263$ ;  $p < .001$ ) but not to work demand ( $r = .071$ ;  $p > .05$ ). However, work demand was found to be significantly and positively related to resilience ( $r = .372$ ;  $p < .001$ ).

**Test of Moderating Effects**

The moderating effect of resilience on the relationship between work demand and psychological distress was tested using the Hayes (2016) PROCESS for SPSS version 2.15. Results are as presented in Tables 3 and 4.

Table 3: *Regression coefficients, standard errors, and model summary information for the moderating effects of resilience between work demand and psychological distress of preschool pupils’ caregivers*

Antecedents	Consequent (Psychological Distress)					
	coeff	se	t	p	LLCI	ULCI
Constant	43.77	.18	237.89	.00	43.41	44.14
Work Demand	-.03	.06	-.59	.55	-.15	.08
Resilience	.07	.01	6.90	.00	.05	.09
Work Demand X Resilience	.01	.00	2.52	.01	.00	.01
Model Summary	$R^2 = .28$ ; $R^2(\text{adj}) = .08$ ; $F(3,598) = 17.33$ ; $p < .001$					

The results in Table 3 revealed that was no significant effect of rework demand on psychological distress among preschool pupils’ caregivers (coeff =  $-.03$ ;  $t = -.59$ ;  $p > .05$ ). However, there was significant effect of resilience on psychological distress among preschool pupils’ caregivers (coeff =  $.07$ ;  $t = 6.90$ ;  $p < .05$ ). Resilience also moderated the influence of work demand on the psychological distress of preschool pupils’ caregivers (coeff =  $.01$ ;  $t = 2.52$ ;  $p < .05$ )

Table 4: *Conditional effect of Work Demand on Psychological Distress at values of Resilience*

Resilience	Effect	se	t	p	LLCI	ULCI
-17.89	-.16	.08	-2.18	.03	-.31	-.02
.00	-.03	.06	-.59	.55	-.15	.08
17.89	.10	.08	1.20	.23	-.06	.25

Values for quantitative moderators are the mean and plus/minus one SD from mean.

Values for dichotomous moderators are the two values of the moderator.

The results in Table 4 showed that was a significant effect of work demand on psychological distress when resilience was low (coeff =  $-.16$ ;  $t = 2.18$ ;  $p < .05$ ). This implies that when redilience is low, there is a negative relationship between work demand and psychological distress indicating that as work demand increases, psychological distress reduces.

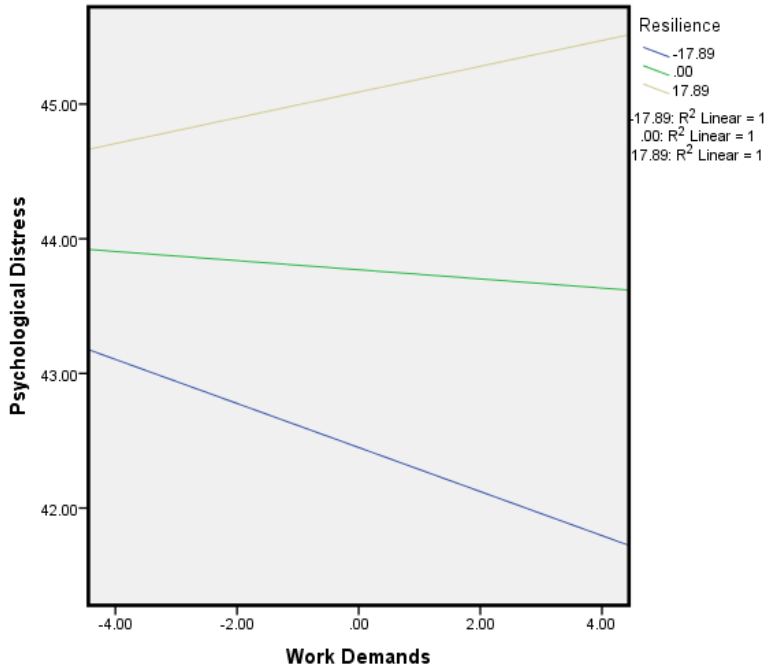


Figure 1: Chart showing the interaction effect of resilience in the relationship between work demand and psychological distress

### 5. Discussion

This study examined the moderating role of resilience between work demand and psychological distress among preschool pupils’ caregivers. First, preliminary analysis on the relationship among the study variables was carried out. Analyses revealed that there is a significant and positive relationship between psychological distress and resilience but not between psychological distress and work demand.

The finding of this study in connection to the relationship between psychological distress and resilience however contradicted the finding of Lee, Shen, and Tran (2009) who found that people with more psychological distress showed less psychological resiliency, in other words, that there is a negative relationship between psychological distress and psychological resilience. The finding further disagreed with that of Zou *et al.* (2016) who indicated that resilience was negatively related to psychological distress and that of Haddadi and Besharat (2010) who found that resilience was negatively associated with psychological distress. Goldstein *et al.* (2013) also observed that high resilience was associated with a

reduction in depression. This implies that resilience was negatively related to psychological distress since depression is a significant element of psychological distress. The findings of the present study is however not surprising. In fact, it could be said to be revealing. Being resilient doesn’t mean that a person doesn’t experience difficulty or distress. Various factors contribute to resilience. These include factors such as personal mastery, intellectual functioning, cognitive adaptability, attachment, spirituality, change in brain structure, neurobiological, system, etc. The result might be attributed to the complexity in the nature of resilience.

The results again revealed no significant relationship between psychological distress and work demand. The result of this study support the findings in the study carried out by Marchand, Demers, and Durano (2005) who did not found any relationship between psychological demand and psychological distress but negated that of Alberstan, Nielsen, and Borg (2001) Bourbonnias *et al.* (2005), Sanza (2010) as well as Vermulen and Mustard (2000) who observed that psychological demands were significantly related to

psychological distress. Also De Jonge, Janssen and Bakker (1999) found a relationship between physical demand and psychological distress. The finding of this study is not surprising in that work demand can yield either positive or negative outcomes for the individual. Vézina, Cousineau, Mergler, and Vinet (1992) confirmed the contention that high work demands do not automatically produce negative consequences for an individual. On the contrary high demands can help an individual develop new skills if work organization allows for decisional authority and social support. In essence, organisational characteristics and variables may have significant role to play in work demand and psychological distress; such organisational characteristics and variables may need to be further investigated.

Finding of this study showed no significant direct effect of work demand existed on psychological distress among caregivers independent of resilience and optimism. Notwithstanding the importance of work factors in causing mental health problems in the workplace, in recent decades, researchers have come to the conclusion that mental distress at work is not solely the direct consequence of a stressor-strain relationship (Sanza, 2010). In their 2006 study, Marchand *et al.* concluded that only 11% of the variation in distress was associated with work factors alone, while 21% of the variation was associated with personal factors, such as personality, family, social network, etc. We can conclude from these findings that different characteristics may act as a buffer, which makes certain individuals more or less likely to be affected by a stressor in their environment. Of the different potential individual characteristics identified by researchers, personality has been the most pervasively retained as a moderating factor in this stressor-strain relationship (Grant & Langan-Fox, 2006).

## 6. Conclusion

Based on the findings of this study, it was concluded that resilience would moderate the relationship between work demand and

psychological distress among preschool pupils' caregivers

## References

- Albertsen, K., Nielsen, M. L. & Borg, V. (2001). The Danish psychosocial work environment and symptoms of stress: The main, mediating and moderating role of sense of coherence. *Work and Stress*, 15(3), 241-253.
- Almoznino, G., Zini, A., Sharav, Y., Shahar, A., Zlutzky, H., Haviv, Y., Lvovsky, A., & Aframian, D. J. (2015). Sleep quality in patients with dental anxiety. *Journal of Psychiatric Research*, 61, 214-222
- Amstader, A. B., Moscati, A., Maes, H. H., Myers, J. M., Kenneth, S. & Kendler, K. S. (2016). Personality, cognitive/psychological traits and psychiatric resilience: A multivariate twin study. *Personality and Individual Differences*, 91, 74-79.
- Awadh, I. M., Gichinga, L., & Ahmed, A. H. Effects of workplace stress on employee performance in the county governments in Kenya: A case study of Kilifi County Government. *International Journal of Scientific and Research Publications*, 5(1), 2015, 2250-3153
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art, *Journal of Managerial Psychology*, 22(3), 309-328. doi: 10.1108/02683940710733115
- Beranuy, M., Oberst, U., Carbonell, X., & Chamarro, A. (2009). Problematic Internet and mobile phone use and clinical symptoms in college students: The role of emotional intelligence. *Computers in Human Behavior*, 25(5), 1182-1187
- Boyar, S. L., Carr, J. C., Mosley, D. C., & Carson, C. M. (2007). The development and validation of scores on perceived work and family demand scales. *Educational and Psychological Measurement*, 67(1), 100-115.
- Butow, P. N., Price, M. A., Bell, M. L., Webb, P. M., deFazio, A., The Australian Ovarian Cancer Study Group, .... &

- Friedlander, M. (2014). Caring for women with ovarian cancer in the last year of life: A longitudinal study of caregiver quality of life, distress and unmet needs. *Gynecologic Oncology*, *132*(3), 690-697
- Chen, X., Mao, Y., Kong, L., Li, G., Xin, M., Lou, F., & Li, P. (2016). Resilience moderates the association between stigma and psychological distress among family caregivers of patients with schizophrenia. *Personality and Individual Differences*, *96*, 78-82
- Chi, P., Li, X., Du, H., Tam, C. C., Zhao, J., & Zhao, G. (2016). Does stigmatization wear down resilience? A longitudinal study among children affected by parental HIV. *Personality and Individual Differences*, *96*, 159-163
- Chou, W., Lin, F., Lin, C., Lin, W., Yie, J., & Sun, W. (2016). Mirtazapine, in orodispersible form, for patients with preoperative psychological distress: A pilot study. *Acta Anaesthesiologica Taiwanica*, *54*(1), 16-23
- Connor, K., & Davidson, J. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*, 76-82.
- De Jonge, J., Janssen, P. P. M., & Bakker, A. B. (1999). Specific determinants of intrinsic work motivation, burnout and turnover intentions: A Study among Nurses. *Journal of Advanced Nursing*, *29*, 1360-1369
- Demerouti, E., & Bakker, A.B. (2011). The Job Demands–Resources model: Challenges for future research. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, *37*(2), Art. #974, 9 pages. doi:10.4102/sajip.v37i2.974
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands resources model of burnout. *Journal of Applied Psychology*, *86*, 499–512.
- Exner, A., Politti, E., Schrieffl, E., Erker, S., Stangl, R., Baud, S., .. & Stöglehner, G. (2016). Measuring regional resilience towards fossil fuel supply constraints. Adaptability and vulnerability in socio-ecological Transformations-the case of Austria. *Energy Policy*, *91*, 128-137. doi.org/10.1016/j.enpol.2015.12.031
- Fagnano, M., Berkman, E., Wiesenthal, E., Butz, A., & Halterman, J.S. (2012). Depression among caregivers of children with asthma and its impact on communication with health care providers. *Public Health*, *126*(12), 1051-1057
- Goldstein, A. L., Faulkner, B., & Wekerle, C. (2013). The relationship among internal resilience, smoking, alcohol use, and depression symptoms in emerging adults transitioning out of child welfare. *Child Abuse and Neglect*, *37*(1), 22-32. doi: 10.1016/j.chiabu.2012.08.007
- Grant, M., Cavanagh, A., & Yorke, J. (2012). The impact of caring for those with chronic obstructive pulmonary disease (COPD) on carers' psychological well-being: A narrative review. *International Journal of Nursing Studies*, *49*(11), 1459-1471
- Grant, S., & Langan-Fox, J. (2006). Occupational stress, coping and strain: The combined/interactive effect of the Big Five traits. *Personality and Individual Difference*, *41*, 719-732.
- Haddadi, P., & Besharat, M. L. (2010). Resilience, vulnerability and mental health. *Procedia - Social and Behavioral Sciences*, *5*, 639-642
- Hayes, A. F. (2016). PROCESS for SPSS 2.15. www.afhayes.com
- Holm, K. E., LaChance, H. R., Bowler, R. P., Make, B. J., & Wamboldt, F. S. (2010). Family factors are associated with psychological distress and smoking status in chronic obstructive pulmonary disease. *General Hospital Psychiatry*, *32*(5), 492-498
- Hyphantis, T. (2011). The role of psychological distress, somatization and personality traits in the formation of IBD patients' health-related quality of life (HRQOL) and smoking habits. *European Psychiatry*, *Volume 26*(Supplement 1), 2219

- Jaworek, M., Marek, T., Karwowski, W., Andrzejczak, C., & Genaidy, A. M. (2010). Burnout syndrome as a mediator for the effect of work-related factors on musculoskeletal complaints among hospital nurses. *International Journal of Industrial Ergonomics*, 40(3), 368-375
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: implications for job design. *Administrative Science Quarterly*, 24, 285-308.
- Kessler, R. C. (1996). *Kessler's 10 Psychological Distress Scale*. Boston, MA: Harvard Medical School. New York: Cambridge University Press. .
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., . . . , & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in nonspecific psychological distress. *Psychological Medicine*, 32, 959-976.
- Koutra, K., Simos, P., Triliva, S., Lionis, C., & Vgontzas, A. N. (2016). Linking family cohesion and flexibility with expressed emotion, family burden and psychological distress in caregivers of patients with psychosis: A path analytic model. *Psychiatry Research*, 240(30), 66-75
- Kunie, K., Kawakami, N., Shimazu, A., Yonekura, Y., & Miyamoto, Y. (2013). The relationship between work engagement and psychological distress of hospital nurses and the perceived communication behaviors of their nurse managers: A cross-sectional survey. *International Journal of Nursing Studies*, 71, 115-124
- Lee, E.O., Shen, C., & Tran, T. V. (2009). Coping with hurricane Katrina: Psychological distress and resilience among African American evacuees. *Journal of Black Psychology*, 35(1), 5-23. DOI: 10.1177/0095798408323354
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, 48, 764-775.
- Linton, S. J. Kecklund, G. Franklin, K. A Leissner, L. C., Sivertsen, B. Lindberg, E., .. & Hall, C. (2015). The effect of the work environment on future sleep disturbances: A systematic review. *Article Sleep Medicine Reviews*, 23, 10-19
- Lovell, B., & Wetherell, M. A. (2015). Child behaviour problems mediate the association between coping and perceived stress in caregivers of children with autism. *Research in Autism Spectrum Disorders*, Volume 20, 17-23
- Lovell, B., & Wetherell, M. A. (2016). Behaviour problems of children with ASD and perceived stress in their caregivers: The moderating role of trait emotional intelligence? *Research in Autism Spectrum Disorders*, 28, 1-6
- Lovell, B., Elliot, H., Liu, C. C. S., & Wetherell, M. A. (2014). Memory failures for everyday tasks in caregivers of children with autism. *Research in Developmental Disabilities*, 35(11), 3057-3061
- Lovell, B., Moss, M., & Wetherell, M. A. (2012). The psychosocial, endocrine and immune consequences of caring for a child with autism or ADHD. *Psychoneuroendocrinology*, 37(4), 534-542
- Marchand, A., Demers, A., & Durand, P. (2005). Does work really cause distress? The contribution of occupational structure and work organization to the experience of psychological distress. *Social Science and Medicine*, 60, 1-14.
- Mase, J. A. & Tyokyaa, T. L. (2014). Resilience and organizational trust as correlates of work engagement among health workers in Makurdi metropolis. *European Journal of Business and Management*, 6(39), 86-93
- Min, J., Yu, J. J., Lee, C., & Chae, J. (2013). Cognitive emotion regulation strategies contributing to resilience in patients with depression and/or anxiety disorders. *Comprehensive Psychiatry*, 54(8), 1190-1197

- Minnotte, K. L., Gravelle, M., & Minnotte, M. C. (2013). Workplace characteristics, work-to-life conflict, and psychological distress among medical workers. *The Social Science Journal, 50* (4), 408-417
- Mizuno, Y., Hofer, A., Suzuki, T., Frajo-Apor, B., Wartelsteiner, F., Kemmler, G., ..... & Uchida, H. (2016). Clinical and biological correlates of resilience in patients with schizophrenia and bipolar disorder: A cross-sectional study. *Schizophrenia Research, 175*(1-3), 148-53. doi: 10.1016/j.schres.2016.04.047
- Mofokeng, P. C. (2008). Job insecurity, general health and resilience of teachers in the Sedibeng West District. Retrieved 23<sup>rd</sup> June, 2016 from [dspace.nwu.ac.za/bitstream/handle/10394/.../mofokeng\\_puleng\\_christinah\\_2008.pdf](https://dspace.nwu.ac.za/bitstream/handle/10394/.../mofokeng_puleng_christinah_2008.pdf)
- Molyneaux, L., Brown, C., Wagner, L., & Foster, J. (2016). Measuring resilience in energy systems: Insights from a range of disciplines. *Renewable and Sustainable Energy Reviews, 59*, 1068-1079
- Mosher, C. E., Winger, J. G., Hanna, N., Jalal, S. I., Einhorn, L. H., Birdas, T. J., ..... & Champion, V. L. (2016). Randomized pilot trial of a telephone symptom management intervention for symptomatic lung cancer patients and their family caregivers. *Journal of Pain and Symptom Management, 52*(4), 469-482
- Muhsen, K., Garty-Sandalon, N., Gross, R., & Green, M. S. (2010). Psychological distress is independently associated with physical inactivity in Israeli adults. *Preventive Medicine, 50*(3), 118-122
- Pakalniškienė, V., Viliūnienė, R., & Hilbig, J. (2016). Patients' resilience and distress over time: Is resilience a prognostic indicator of treatment? *Comprehensive Psychiatry, 69*, 88-99
- Pidgeon, A. M., & Keye, M. (2014). Relationship between resilience, mindfulness, and psychological well-being in University students. *International Journal of Liberal Arts and Social Science, 2*(5), 27 - 32
- Podsakoff, N.P., LePine, J.A., & LePine, M.A. (2007). Differential challenge stressor hindrance stressor relationships with job attitudes, turnover intentions, turnover and withdrawal behavior: A meta-analysis. *Journal of Applied Psychology, 92*, 438–454. doi:10.1037/0021–9010.92.2.438, PMID:17371090
- Pons, F. J., Ramos, A., & Ramos, R. A. (2016). Antecedent variables of innovation behaviors in organizations: Differences between men and women. *Applied Psychology, 66*(3), 117-126
- Porter, L. S., Keefe, F. J., Garst, J., Baucom, D. H., McBride, C. M., McKee, D. C., ..... & Scipio, C. (2011). Caregiver-assisted coping skills training for lung cancer: Results of a randomized clinical trial. *Journal of Pain and Symptom Management, 41*(1), 1-13
- Porter, L. S., Keefe, F. J., Garst, J., McBride, C. M., & Baucom, D. (2008). Self-efficacy for managing pain, symptoms, and function in patients with lung cancer and their informal caregivers: Associations with symptoms and distress. *PAIN®, 137*(2), 306-315
- Qiu, H., Bures, R., & Shehan, C. L. (2012). The inconsistent mediating effects of psychosocial work characteristics on the education–health relationship. *Social Science and Medicine, 75*(8), 1539-1546
- Radeef, A., & Faisal G. (2014). Psychological distress among medical undergraduate students in Malaysia. *European Psychiatry, 29*(Supplement 1), 1
- Rahat, E. & Ilhan, T. (2016). Coping styles, social support, relational self-construal, and resilience in predicting students' adjustment to University life. *Educational Sciences: Theory and Practice, 16*(1), 187-208
- Rothmann, S., & Joubert, J.H. M. (2007). Job demands, job resources, burnout and work engagement of managers at a platinum mine in the North West Province. *South African Journal of Business Management, 38*(3), 49-61
- Salas, M. L., Quezada, S., Basagoitia, A., Fernandez, T., Herrera, R., Parra, M., ..... & Radon, K. (2015). Working conditions, workplace violence, and psychological distress in andean miners: A cross-sectional study across three countries. *Annals of Global Health, 81*(4), 465-474
- Sanza, C. D. (2010). Work, personality and psychological distress direct and moderating effects of the Big Five personality traits. Retrieved on 23<sup>rd</sup> June, 2016 from <https://papyrus.bib.umontreal.ca/xmlui/handle/1866/4785>
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: implications for improving work and health. In G. Bauer, and O. Hammig, (eds.), *Bridging Occupational, Organizational and Public Health* (Netherlands: Springer, 2014, 43-68,

- Schaufeli, W.B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. Washington, DC: Taylor and Francis.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063-1078
- Scott, N., Carrotte, E. R., Higgs, P., Cogger, S., Stoové, M. A. Aitken, C. K., & Dietze, P. M. (2016). Longitudinal changes in psychological distress in a cohort of people who inject drugs in Melbourne, Australia. *Drug and Alcohol Dependence*, 168(1), 140-146
- Seery, M. D. & Quinton, W. J. (2016). Understanding Resilience: From Negative Life Events to Everyday Stressors. *Advances in Experimental Social Psychology*, 54. doi: 10.1016/bs.aesp.2016.02.002
- Shimazu, A., Bakker, A. B., Demerouti, E., & Peeters, M.C.W. (2009). Work-family conflict in Japan: How job and home demands affect psychological distress. *Industrial Health*, 48, 766-774
- Slepian, P. M., Ankawi, B., Himawan, L. K., & France, C. R. (2016). Development and initial validation of the pain resilience scale. *The Journal of Pain*, 17(4), 462-472
- Vermeulen, M., & Mustard, C. (2000). Gender differences in job strain, social support at work, and psychological distress. *Journal of Occupational Health Psychology*, 5, 428-440.
- Wolfe-Christensen, C., Fedele, D. A., Kirk, K., Mullins, L. L., Lakshmanan, Y., & Wisniewski, A. B. (2014). Caregivers of children with a disorder of sex development: Associations between parenting capacities and psychological distress. *Journal of Pediatric Urology*, 10(3), 538-543
- Wolfe-Christensen, C., Fedele, D. A., Kirk, K., Phillips, T. M., Mazur, T., Mullins, L. L., ..... & Wisniewski, A. B. (2012). Degree of External Genital Malformation at Birth in Children with a Disorder of Sex Development and Subsequent Caregiver Distress. *The Journal of Urology*, 188(4), 1596-1600
- Yiengprugsawan, V., Leach, L., Berecki-Gisolf, J., Kendig, H., Harley, D., Seubsman, S., & Sleight, A. C. (2016). Caregiving and mental health among workers: Longitudinal evidence from a large cohort of adults in Thailand. *SSM - Population Health*, 2, 149-154
- Yildirim, D., & Aycan, Z. (2008). Nurses' work demands and work-family conflict: A questionnaire survey. *International Journal of Nursing Studies*, 45(9), 1366-1378
- Zendjidjian, X., Richieri, R., Adida, M., Limousin, S., Gaubert, N., Parola, N., ..... & Boyer, L. (2012). Quality of life among caregivers of individuals with affective disorders. *Journal of Affective Disorders*, 136(3), 660-665
- Zhang, P., Li, C., Zhao, Y., Xing, F., Chen, C., Tian, X., & Tang, Q. (2016). The mediating role of emotional intelligence between negative life events and psychological distress among nursing students: A cross-sectional study. *Nurse Education Today*, 44, 121-126
- Zou, G., Shen, X., Tian, X., Liu, C., Li, G., Kong, L., & Li, P. (2016). Correlates of psychological distress, burnout, and resilience among Chinese female nurses. *Ind Health*, 54(5), 389-395. doi: 10.2486/indhealth.2015-0103



## Teachers' Turnover Intention and Leadership Behaviour as Determinant of Academic Productivity of Private Secondary Schools in Lagos State, Nigeria

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**Abstract.** The study examined the effect of teachers' turnover intention and leadership behaviour on academic productivity of private secondary schools in Lagos State, Nigeria. Academic productivity of private secondary schools has been a major source of worry recently. As a result of this, the researcher investigated to see if teachers' turnover intention and leadership behaviour have anything to do with academic productivity. The study was guided by two hypotheses. Descriptive survey research of expose factor type was used. The sample comprised nine hundred and ninety-one (991) respondents from the sampled schools. Three instruments were adopted to collect data from the respondents. Multiple Regression Analysis Pearson Product Moment Correlation Coefficient were used for the hypotheses. The result revealed no significant relationship between teachers' turnover intention and leadership behaviour on academic productivity of private secondary schools in Lagos State. The result also showed no significant relative contributions of teachers' turnover intention and leadership behaviour on academic productivity of private secondary schools in Lagos State. It was suggested that selection of school principals should include a process to identify those who have history of exhibiting inter personal skills. Periodic seminars for school principals should be organised. School owner should promote staff

development as a strategy to retain them. There is need to generate financial and human resources that support novice teachers in meaningful career transition.

### 1. Introduction

High productivity is the hallmark of growth and development of nations all over the world, therefore, productivity is concerned with the overall effectiveness and efficiency of getting things done. It is essentially a ratio to measure how an organisation converts resources into goods and services. Saari (2005; 2006) says productivity is typically measured as a ration of output to input.

School productivity may be measured in terms of students' performance (Academic, sports and socio-cultural). Private school productivity means the contribution to learning is increasing over time. In private school, teachers' work performance and productivity are determined by effective teaching measured by students' academic performance in examination, punctuality at school and class, giving extra lessons to students through participation in co-curricular activities such as sports, students' discipline, committee assignments as may be given by the principal or Director of the school. However, if teachers fail to measure up in these various assignments they may be perceived

uncooperative and unproductivity. Because principals or proprietors are mainly concerned with achieving results, they want to work with and through teachers who are cooperative, responsible and productive.

Excessive teachers' turnover intention appears to have an impact on students' performance both in academic, sports and socio-cultural activities (Porter-Magee, 2004). Darling- Hammod and Skyes (2003) observe that high teachers' turnover intention rate results in low productivity of schools which in turn affects the low tone and image of the school. The fact remains that for a school organisation to survive, teachers must be able to study and survive maximally.

Interactions with private secondary school teachers records bitter complaints concerning irregularities in the payment of their salaries and allowances. Their offices are ill-equipped. The lack of interest, concentration and continuity in the teaching work reduce their performance and productivity. Other complaints such as heavy workload and absence of conference and trainings to update their knowledge and skills render them ill-motivated, frustrated and unproductive.

It is a known fact that any teacher that is undergoing an unfair treatment, unpleasant feelings, frustration or ill-treatment by a supervisor is bound to have intentions of leaving the school for another, thus bringing about low productivity and consequently affect the performance of the students in external examinations.

Shield & Dockrell (2005) in their study of the effect of teachers stress and teachers' turnover intention on students' academic performance found that both have a detrimental effect upon children learning and performance.

The National Policy on Education (FRN, 2013) identifies certain aims and objectives which are to facilitate educational development in the country. In fostering these aims and objectives, the school principal has important role to play. Among these roles include providing effective leadership in secondary schools, thereby enhancing better academic performance among students. How effective the principal is in performing these roles has been a matter of concern to many educationists. In view of these

inconclusive findings and expectations to meet educational demands, it is necessary to carry out further research on the effect of teachers' turnover intention and leadership behaviour on academic productivity of private secondary schools in Lagos State.

## 2. Literature Review

Turnover is a phenomenon that can be considered from different perspectives depending on the subject in question teachers' turnover refers to the rate of departure among staff engaged in schools for a given time frame or period. The consequences of teacher turnover and attrition are too ghastly to contemplate.

Institute of management (1991) posits that one impact of turnover is by way increased cost to the organization, broadly categorised as separation, replacement, recruitment, selection, induction and training cost as well as loss of productivity while the newly hired teacher comes to speed.

Teacher attrition disrupts schooling. This is specifically so when teachers leave the profession during the academics year or whilst engaged in critical projects in school. Often there is no continuity when they leave. According to Ingersoll (2002) turnover influence the student performance and effectiveness of the school since the school as an organisation has production processes requiring extensive interaction among teachers and is therefore prone to suffer when subjected to high rates of turnover. Consequently, turnover disrupts the quality of school cohesion and students' performance.

Ingersoll (2001) attributes shortage of teachers directly to turnover and posits that about 90% of newly employed teachers are simply replacements for recent departures. To address this situation, the temperature is reportedly the lowering of standard and compromising entry requirement to teaching.

The efforts of turnover intention necessitate the management to take a number of measures to address teachers' turnover intention in various counties. Among others, aggressive recruitment drives, lowering standards for entry into teaching, provision of allowances as incentives

have been employed. However, these measures seem largely to address attracting people into teaching. Therefore, a holistic approach is needed to manage teacher turnover effectively. Leadership is the process of influencing the activities of a group of people by a leader in efforts towards goal achievement (Nworgu, 1991 cited in Adeyemi, 2009). It could be described as the ability to get things done with the assistance and cooperation of other people within the school system. Implied, the way the principal relates with his or her staff could contribute immensely to their effectiveness or otherwise. It is important for school principal to embrace leadership role that affects the level of teacher commitment and school productivity. Besides, principals' leadership behaviour has great influence on students' achievement and teachers' commitment. The way the principal relates with his or her staff could contribute immensely to their effectiveness or otherwise (Obadara, 2005).

The importance of the role of principals in the school organisation cannot therefore be overlooked. Principal are very unique in school organisations. This was confirmed by Amoloye (2004) who called them school managers. The job of managing, according to Idowu (1998) cited in Olaleye (2008) involves among others the provision of leadership for men and women, coordinating both human and material resources to ensure the achievement of organisational goals. In the school system, the principal as an administrator influences teachers to achieve the goals and objectives of the school. The fundamental goal of the school is to enhance the teaching and learning process. Hence, the school administrators should endeavour to influence the behaviour of the teachers in order to achieve the goals of the school.

### 3. Statement of the problem

Academic productivity of private secondary schools has been a major source of worry in recent years. Parents who opt for fee-paying secondary education as against fee-free public secondary schools are often disappointed by the poor products of schools as indicated perennially in poor results at external examination and general academic performance. The study

therefore investigated the extent which teacher turnout intention and leadership behaviour predicted school productivity with a view to recommending appropriate intervention towards boosting academic productivity of private secondary schools in Lagos State.

### 4. Hypotheses

The following hypotheses were generated to give direction to this study:

HO<sub>1</sub>: Teachers' turnover intention and leadership behaviour will have no joint effect on academic productivity of private school in Lagos state.

HO<sub>2</sub>: Teachers' turnover intention and leadership behaviour will not have relative contribution to academic productivity of private secondary school in Lagos state.

### 5. Methodology

The study adopted a descriptive survey research design of ex post factor type; the target population comprised of all the teachers and principal of approved private secondary school in Lagos state. A sample of nine hundred and ninety (990) respondents was selected using stratified random sampling technique. Three research instruments: Turnover Intention Scale (TIS), Leadership Behaviour Survey Scales (LBSS) and School Productivity Questionnaire (SPQ) were used for the study. The high internal consistency coefficients and the reliability coefficient of the three instruments attest to the validity and reliability of the instrument (0.78, 0.81, 0.89 respectively). The data gathered at the end of administration of the instrument were analyzed using Multiple Regression and Pearson Product Moment Correlation Statistics at 0.05 level of significance.

### 6. Results

**Hypothesis One:** Teachers' turnover intention and leadership behaviour will have no joint effect on academic productivity of private school in Lagos state.

Table 1: Model Summary of the Multiple Regression Analysis for the Combined Contributions of Turnover Intention and Leadership Behaviour to the Prediction of Academic Productivity of private Secondary Schools in Lagos State.

REGRESSION		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
R = .119	Regression	47.612	3	15.871	.795	.498(a)
R Square =.014	Residual	3332.010	167	19.952		
Adjusted R Square =-.004	Total	3379.622	170			

a Predictors: (Constant), Leadership Behaviour, Turnover Intention

b Dependent Variable: Academic Productivity

The results in Table 1 indicated that the predictor variables (turnover intention and leadership behaviour) entered into the regression model at once, there was no significant prediction of academic productivity of private secondary schools in Lagos State ( $R = .119$ ;  $R^2 = .014$ ;  $Adj R^2 = -.004$ ;  $F_{(3,167)} = .795$ ;  $p > .05$ ). The null hypothesis, which stated that Teachers’ turnover intention and leadership behaviour will have no joint effect on academic productivity of private school in Lagos state, was accepted by this finding. This implies that there was no significant joint contribution of turnover intention and leadership behaviour to academic productivity of private secondary schools in Lagos State.

**Hypothesis Two:** Teachers’ turnover intention and leadership behaviour will not have relative contribution to academic productivity of private secondary school in Lagos state.

Table 2: Beta Coefficients and t Ratio for Relative Contributions of Turnover Intention and Leadership Behaviour to the Prediction of Academic Productivity of private Secondary Schools in Lagos State.

	Unstandardized Coefficients		Standardized Coefficients	t-Ratio	Sig.
	B	Std. Error	Beta		
(Constant)	95.770	2.445		39.170	.000
Turnover Intention	-.155	.122	-.115	-1.265	.208
Leadership Behaviour	.060	.064	.080	.937	.350

a Dependent Variable: Academic Productivity

The results in Table 2 revealed that none of the variables; turnover intention ( $\beta = -.115$ ;  $t = -1.265$ ;  $p > .05$ ), and leadership behaviour ( $\beta = .080$ ;  $t = .937$ ;  $p > .05$ ) were not good predictors of academic productivity of private secondary schools in Lagos State. The null hypothesis, which stated Teachers’ turnover intention and leadership behaviour will not have relative contribution to academic productivity of private secondary school in Lagos state, was accepted by this finding.

## 7. Discussion of findings

Table 1 showing the correlation matrix of the relationship among turnover intention, leadership behaviour and productivity of private secondary schools in Lagos state. The table revealed that there are significant and positive

relationships between turnover intention and job stress; turnover intention and leadership behaviour but no significant relationship between school productivity and turnover intention, school productivity and job stress and school productivity and leadership behaviour. The finding contradict that of Peter-Mages (2004) who found that excessive teacher turnover appears to have an impact on students’ performance both in academics ,sport and socio-cultural activities. So also Darling-Hammed and Skye (2003) observed that high teacher turnover result in low student performance on the part of school productivity. Also the funding that school productivity has no significant relationship on leadership behaviour contradict the funding of Olaleye (2008) who found that transformational leadership contributes to a range of organisation outcomes including motivation, commitment

and capacity for teachers to develop new approach to education. School principals are expected to exhibit this leadership quality to enhance teaching and learning the school.

Hypothesis two stated that Teachers' turnover intention and leadership behaviour will not have relative contribution to academic productivity of private secondary school in Lagos state. This means the study showed no significant relative contribution of teacher turnover intention on academics productivity. Peter-Magee to have an impact on student academics performance. In the same vein, Darling-Hammed & Skye (2003) observed that high teacher turnover intention rate results in low student academics performance. Findings also confirmed that leadership behaviour has no influence on academics productivity. This study has contradicted the researchers carried out by Lee, Walker & Bodycott (2000) as well as Luo & Naijar (2007) who found that leadership capacities and leadership qualities of principals are strongly and positive correlated. Principal leadership behaviour influence students learning outcomes by the paths of school goals and school organisational structures. On the other hand, school in which students perform highly are led by principal who make significant and measurable contribution to the teaching and learning practices (Fullan, 2002).

## 8. Conclusion

The study has shown that academics productivity of private secondary schools in Lagos State was moderately high. Base on the findings, the following conclusions were drawn. Teacher's turnover intention and leadership behaviour factors did not jointly contribute to academics productivity. Academics productivity was not related to both teacher turnover intention, job stress and leadership behaviour meaning that the two predictor variables were not found to be the best predictor variables were not found to be the best predictor of academic productivity. The two variables did not jointly, relatively and significantly contribute to academic productivity in private secondary schools in Lagos State.

## 9. Recommendations

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

- Since school productivity was not found to be significantly and positively related to the teacher turnover intention and leadership behaviour, it is therefore recommended that selection of school principal should include a process to identify those who have history of exhibiting interpersonal skills consistent with individual concerned.
- Periodic seminars for school principals should be organised to assist them in the management of their schools.
- Private school owners should substantially promote staff development as part of school staff retention strategy.
- There is need to generate financial and human resources that support teachers in meaning career transitions rich instructional growth, opportunities and a desire to remain in the profession.

## References

- Adeyemi, T.O. (2009). *Enrolment analysis and teacher requirements for the Universal Basic Education programme in Kwara State, Nigeria*. Departments of Educational Foundations and Management, Faculty of Education, University of Ado-Ekiti, Ado-Ekiti, Ekiti State, Nigeria.
- Amoloye, A.(2004). A Key Note Address Delivered by the Honourable Commissioner for Education, Science and Technology at a meeting with the Newly Appointed Principals of Junior Secondary Schools in the State on Monday 9th August 2004 at Lagelu Grammar school hall, Agugu, Ibadan, Oyo state, Nigeria.
- Camman, C., Fishman, M., Jenkins, G.D. & Klesh, j.R. !983. *Assessing the attributes and perceptions of organisational members*. In S.E. Seashore, E.E. Lawler, P.H. Mirvis & C. Camman (Eds). *Assessing organisational change*. New York: Wiley. Pp.71-138.

- Darling-Hammond, L. & Sykes, G. (2003): *A National teacher supply policy for education: The right to meet the 'high qualified' teacher challenge*. Educational Policy Analysis Archives. 11(33) 16-19.
- Federal Republic of Nigeria (2013). *National Policy on Education*. Lagos: Nigeria Educational Research and Development council press.
- Griffith, J. (2001). *Principal leadership of parents involvement*. *Journal of Educational Administration*. 39(2), 162-218.
- Gbadamosi, L. (1999). *A Study of Rural-Urban disparity in resource availability utilization and students' performance in Ogun State Secondary Schools*. Unpublished Ph.D Thesis University of Lagos, Nigeria.
- H0, T.S. (1996). *Stress, health and leisure satisfaction: The case of teachers*. *International Journal of Educational Management*, 10 (1), 41-48.
- Ingersoll, R.M. (2001). *Teacher turnover and teacher shortages: An organisational analysis*. In K.O. Strunk and J.P. Robinson (Eds.) *oh won't you stay: A multi-level analysis of the difficulties in retaining qualified teachers*. Stanford University, Peabody Journal of Education lawrence Erlbaum Association, 81(4) 65-94.
- Johnsons & Cooper, C. (2003). *The Construct Validity of the Asset and Stress Measure*. *Journal of Stress and Health*, 19(1)181-185.
- Kyriacous, C.(2000). *Stress-Busting for Teachers*. Cheltenham, Nelson Homes.
- Lee, J.K; Walker, A & Bodycott, P (2000). *Pre-service primary teachers' perception about principals in Hong-Kong: Implications for teachers and principals education, Asia-Pacific*. *Journal of Teacher Education* 28 (1) 52-67.
- Luo, M. & Najjar, L. (20076). *The Chinese Principal Leadership Capacity as Perceived by Master Teachers*. *Academic Leadership, the Online Journal*, 4(3).
- Luthans, F (2002). *Positive organisational behaviour: developing and managing psychological strengths*. *Acad. Manage. Exec.*16, 57-72.
- McCormick, J. (1996) *Occupational stress of teachers: Biographical differences in a large school system*. *Journal of Educational Administration*, 35 (1) 18-38.
- Obadara, O.E. (2005). *Perceived full-range leadership, teacher factors and the academic performance of secondary schools in Ogun State, Nigeria*. A Ph.D Thesis. University of Ibadan, Ibadan, Oyo State, Nigeria.
- Ojeniyi, F.B.(2015). *Teachers' Turnover Intention and Leadership Behaviour as Determinant of Academic Productivity of Private Secondary Schools in Lagos State, Nigeria*. Unpublished Ph.D Thesis, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.
- Olaleye, F.O.(2008). *Principals' leadership behaviour and school learning culture in Ekiti State secondary schools*. *The Journal of International Social Research*, 1 (3).
- Porter-Magee, K. (2004) *Teacher Quality Controversy and NCLB clearing House*, 78(1). 26-29
- Shield, B. & Dockroll, J. (2008). *The effect of classroom and environmental noise on children's academic performance*. 9<sup>th</sup> International congress on noise as a public health problem (ICBEN) Foxwood. C.T.
- Van-Dick, R. (2001). *Stress and strain in teaching: A structural equation approach*. *British Journal of Educational Psychology*. 71, 243-259.

## Effects of Sawmill Machine Noise on Hearing Levels and English Language Performance of Students in Technical Colleges, Plateau State, Nigeria

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**Abstract.** This study examined the effects of sawmill machine noise on hearing levels and English language performance of students in technical colleges, Plateau State, Nigeria. This study was true experimental in nature. Specifically, pre-test-post-test control group with randomization design type was adopted. The population of the study comprised of all National Technical College students in Plateau State who have spent three years learning Woodwork in three schools identified. The researcher purposefully chose one of the schools, Government Technical College Bukuru which has 8 students as the target sample for the study. These students were randomly assigned to experimental and control group. The instruments used were Diagnostic Audiometer Machine (DAM) and Teacher Made English Language Performance Test (TMELPT). The validity of the two instruments were obtained. DAM reliability index was 0.905 and TMELPT had a reliability index of 0.865. The researcher adopted both descriptive and inferential statistics in analyzing the data generated in the course of the study. Graph was used to connote differences in audiogram result computation of Pure Tone Average (PTA) for research questions one and two and research questions three and four were answered using Mean and Standard Deviation. In testing the hypotheses, descriptive statistics (Mean and Standard Deviation) was

used for hypothesis one. Inferential statistics T-test for independent samples was used to analyze hypotheses two at 0.5. The Statistical Package for Social Sciences (SPSS) version 23.0 software was utilized for hypotheses two. The findings showed that sawmill machine noise effected the hearing levels of students and can hamper their performance in English language. Again it showed that usage of ear protective measures in the form of Foam Ear Plug can improve the hearing of students which can lead to improvement in their English language performance. Based on these findings, the researcher recommended that hearing conservation programmes should be introduced in technical colleges. Technical College students learning woodwork and other related subjects should be provided Foam Ear Plug in their workshops as a means of hearing conversation.

**Keywords:** Sawmill machine noise, Foam Ear plug, English language performance.

### 1. Introduction

Sense organs in human body are very important and they perform different functions. For normal living, the sense organ functions are essential to human existence. Any damage to any of them could pose a threat to the whole body. Hearing is one of the sense organs in human body. It is

through the ear that this function is performed. Any damage to the hearing organ either at birth or later in life will affect the individuals hearing level which may lead to hearing impairment.

Human hearing level is shown in the different pitches an individual can perceive sound. These pitches range from normal to abnormal levels. When the hearing is at abnormal level, the individual will be having hearing impairment at different levels. These hearing levels can be at mild, moderate, severe and profound hearing impairment levels. Hearing levels can be determined when audiometric screening is carried out using audiometer screening machine to get the pure tone threshold. This process is important because hearing impairment does not show physically like other special needs conditions. Owobi (2015) asserted that hearing impairment is a hidden disability. This author said that physical observation alone cannot show hearing impairment but in the context where verbal communication is involved, the individuals hearing limitations will be exposed.

One of the things that can affect and damage the hearing organ of an individual is noise. Noise is an unwanted sound, especially one that is loud, unpleasant, that causes disturbance and health hazards especially to the hearing organ. Noise can disrupt concentration, and interfere with speech communication which may affect academic performance of an individual. Marshark (2006) said that the academic performance gap between students who hear and those who have hearing impairment are frequently reported to be enormous and in favour of those who hear. This explains why the researcher wants to find out the hearing levels and academic performance of technical college students whose ears are always exposed to noise while learning woodwork.

Among the types of noise is industrial noise. Industrial noise pollution is any over the board sound originating from industrial equipment such as sawmill machines. These industrial noises can impact company personnel and the host community negatively (Davies, 2008). It is also good to note that noise can interrupt concentration and impede speech

communication between individuals. If this happens in a school setting, academic performance and safety of such individual exposed may be affected. In the case where this noise exposure is continuous, it can cause deafness. On the other hand, if the noise is occasionally and loud, it can cause temporary change in hearing threshold such as; ears stuffed up and ringing ears (tinnitus). These short-term problems may go away either in few minutes, hours or days after leaving such noise environment.

Sawmill machine is an industrial equipment used in sawmills for sawing logs into timbers, then timbers into planks. This is one of the equipment used in training technical college students learning woodwork. Sawmill machines produces a lot of noise. The noise that sawmill machines produce is referred to as sawmill machine noise (World Health Organization, 2009). This organization submits that noise produced from Sawmill machine causes noise induced hearing impairment and that it is one of the most prevalent irreversible occupation hazard which has rendered about 120 million people into hearing impairment.

Students learning woodwork in technical colleges learn it to become experts in cabinet making, wood carving and other carpentry activities in order to be self-reliant. However, in this type of environment, as students expose their ears to such a loud noise without hearing protections such as Foam Ear Plug (FEP), it can pose a challenge to the hearing organ leading to noise induced hearing impairment (Stephenson, 2012). Stephenson opined that to prevent this menace among students learning woodwork in technical schools, there is the need for hearing conservation, such as the wearing of earmuffs or foam ear plugs. Foam ear plug is one of the methods of hearing conservation practices.

Performance is the measurable behaviour of a person in a particular situation. This implies that academic performance of a student can be regarded as the observable and measurable behaviour of the student in a particular situation, for example, in this study, the academic performance of students in English language.

This academic performance consists of the scores the students obtained from the teacher made test pre-test and post-test of English language. Academic performance can be influenced by a number of variables. These include; poor teaching, employment of unqualified teachers, unavailability of teaching material and environmental factors.

Noise environment is an environmental factor and can be detrimental to students' academic performance. This could be short or long term exposure to noise. For some reasons, students may be attending training in sawmill machine in technical colleges learning woodwork without adequate ear protection measures (hearing conservation which is any method put in place to protect the ear from noise). This can endanger their health and subsequently affects them academically. Newton (2015) study revealed that when core subjects such as English language is hampered; it retards students' performance in other subject areas in technical colleges. As the effects of these noises on the hearing level and English language performance of students in the Technical colleges remain groundless, the researcher took the challenge to examine the effects of sawmill machine noise on the hearing levels and English language performance of Technical College Students in Plateau State, Nigeria.

## 2. Statement of the Problem

In Nigeria Technical Colleges, woodwork is part of the school subjects where sawmill machines are used, and in the process of learning this skill, students often expose their ears to noise emanating from the machines. They might not be using Foam Ear Plug (FEP) as a means of hearing conservation measure either. The effect of the noise on them may be hearing impairment of different levels. A situation that can affect their hearing and communication abilities required for academic activities. This can also diminish their ability to cope in classroom instructions for school subjects. Also in Nigeria system of education out of all school subjects, English language regarded as one of the most crucial subject that determine students' academic excellence and progress. Distractions

such as environmental noise affect hearing ability and might subsequently lead to an individual's poor performance in English language. Therefore, these assumptions raised the curiosity of the researcher to carry out this study.

## 3. Purpose of the Study

The purpose of this study was to examine the effects of sawmill machine noise on the hearing levels and English language performance of students in Technical Colleges, Plateau State, Nigeria.

Specifically, the study investigated:

- The hearing levels of NTC III students in experimental and control groups learning Wood-Work before exposure to Sawmill Machine noise.
- The hearing levels of NTC III students in experimental and control groups learning Wood-Work after exposure to Sawmill Machine noise.
- Determined the level of English language performance of NTC III students in experimental and control groups learning woodwork before exposure to Sawmill Machine noise.
- Determined the level of English language performance of NTC III students in experimental and control groups learning woodwork after and exposure to Sawmill Machine noise.

## 4. Research Questions

The following research questions were formulated to guide the study:

- What is the hearing levels of NTC III students in experimental group before exposure to Sawmill Machine noise?
- What is the hearing levels of NTC III students in control group before exposure to Sawmill Machine noise?
- What is the level of English language performance of NTC III students in experimental and control groups before exposure to Sawmill Machine noise?

- What is the level of English language performance of NTC III students in experimental and control groups after exposure to Sawmill Machine noise?

### 5. Hypotheses

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

- There is no significant difference between the pure tone average scores of NTC III Students in experimental and control groups after exposure to sawmill machine noise.
- There is no significant difference between Pre-test and Post-test English language performance mean score of NTC III Students in experimental group.

### 6. Methodology

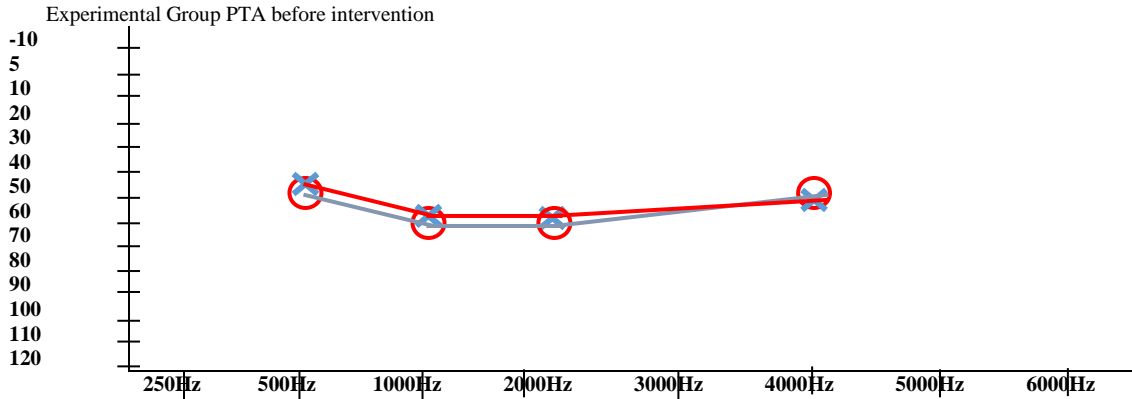
This study was true experimental in nature. Specifically, pre-test-post-test control group with randomization design type was adopted. The design was chosen because it allows the researcher to compare the final post-test result and the pre-test of both groups. This study involved a group of students who were randomly assigned into experimental and control groups. Experimental group that was exposed to sawmill machine noise in their normal learning period in woodwork wearing Foam Ear plugs (manipulation) and the control group that was exposed to sawmill machine noise in their normal learning period in woodwork without Foam Ear plugs (X). And both groups were subjected to pre-test in hearing level and English language. The population of the study comprised of all National Technical College students in Plateau State who have spent three years learning Woodwork in three schools identified. The researcher purposefully chose one of the schools, Government Technical College Bukuru which has 8 students. These students were randomly assigned to experimental and control group. The instruments used to collect data were

Diagnostic Audiometric Machine (DAM) used for measuring hearing level of students and Teacher Made English Language Performance Test (TMELPT) used for testing students' scores in English language. The test comprises of 16 questions on from phrase and 14 for verb amounting to 30 questions taken from Macmillan Brilliant English for senior secondary schools book 3 (Osisanwo, Alabi, Owoeye, Onuoha & Ahmed, 2010). The validity of the two instruments was obtained. Diagnostic Audiometer Machine (DAM) reliability index was 0.905 and Teacher Made English Language Performance Test (TMELPT) had a reliability index of 0.865. The researcher adopted both descriptive and inferential statistics in analyzing the data generated in the course of the study. Graph was used to connote differences in audiogram result computation of Pure Tone Average (PTA) for research questions one and two and research questions three and four were answered using Mean and Standard Deviation. In testing the hypotheses, descriptive statistics (Mean and Standard Deviation) was used to describe and summarize the data collected for hearing levels in a meaningful way for hypothesis one. Inferential statistics T-test for independent samples was used to test and analyze hypotheses two at 0.5. The Statistical Package for Social Sciences (SPSS) version 23.0 software was utilized for hypotheses two.

### 7. Results

**Research Question One:** What is the hearing level of NTC III students in experimental group before exposure to Sawmill Machine noise?

To determine the hearing levels of NTC III students in the experimental group during the pre-test, the ear screening test was conducted on all the participants. Their ears were tested at different Hz and dB level. The result is seen in Figure 1 below.



**Key:**

Left Ear – X (with blue coloured line)

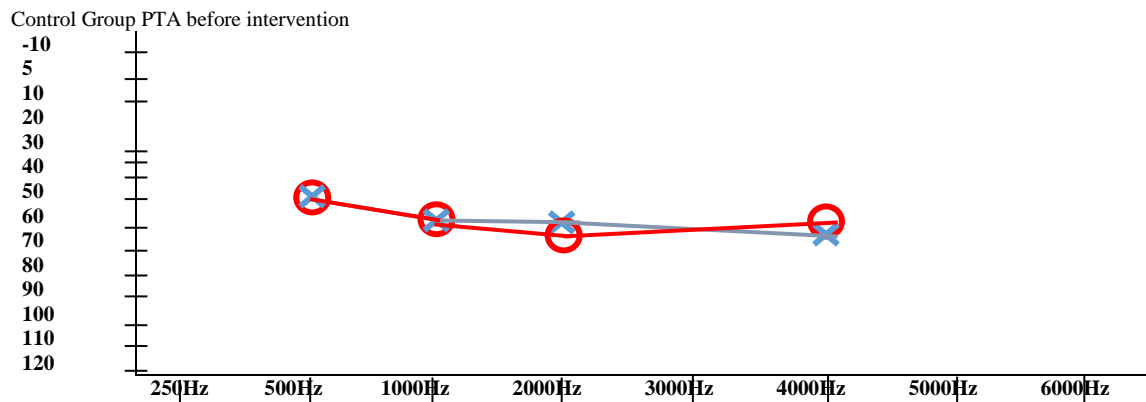
Right Ear – O (with red coloured line)

**Fig. 1:** Chart showing the Pure Tone Average (PTA) Hearing Level of NTC III Students in Experimental Group before Exposure to Sawmill Machine Noise

Fig. 1 revealed that the hearing level of NTC III students learning woodwork before intervention is as follows at 500Hz is 45dB, at 1000Hz is 50dB, at 2000Hz is 50dB and at 4000Hz 45dB. This implies that majority of the students in experimental group had mild hearing loss immediately they finish woodwork practice which may interfere with other class subject learning and not beneficial for academic performance. The four students were tested individually at these levels and their hearing levels obtained. Then the average of each level at different frequencies of the students were calculated to give the picture of the groups hearing level. This is called Pure Tone Average (PTA).

**Research Question Two:** What is the hearing level of NTC III students in control group before exposure to Sawmill Machine noise?

To determine the hearing level of students NTC III control group during pre-test, the ear screening test was conducted on all the participants. Their ears were tested at different Hz and dB level. The result is seen in Figure 2 below.



**Key:**

Left Ear – X (with blue coloured line)

Right Ear – O (with red coloured line)

**Fig. 2:** Chart showing Hearing Level of NTC III Students in Control Group before Exposure to Sawmill Machine Noise

Fig. 2 revealed that the hearing level the hearing level of NTC III students learning woodwork before intervention is as follows at 500Hz is 45dB, at 1000Hz is 50dB, at 2000Hz is 50dB and at 4000Hz 45dB. This implies that majority of the students in control group had mild hearing loss immediately they finish woodwork practice which may interfere with other class subject learning and not beneficial for academic performance.

**Research Question Three:** What is the level of English language performance of NTC III students in experimental and control groups before exposure to Sawmill Machine noise?

**Table 1:** Level of English Language Performance of NTC III Students in Experimental and Control Groups Before Exposure to Sawmill Machine Noise

	Experimental Group	Control Group
MEAN	3.5	3.25
SD	0.58	0.96

Table 1 reveals the Level of English Language Performance of NTC III Students in Experimental and Control Groups Learning Woodwork before Exposure to Sawmill Machine Noise. The experimental group had a mean and standard deviation of  $3.50 \pm 0.58$  and the control group had a mean of  $3.25 \pm 0.96$  which showed that students in the experimental group differs by 0.25 from students in the control group. This implies that majority of the students in experimental and control groups had low English Language Performance before exposure to intervention.

**Research Question Four:** What is the level of English language performance of NTC III students in experimental and control groups learning woodwork after exposure to Sawmill Machine noise?

**Table 2:** Level of English Language Performance of NTC III Students in Experimental and Control Groups after Exposure to Sawmill Machine Noise

	Experimental Group	Control Group
MEAN	7.5	4
SD	0.58	1.15

Table 2 reveals the Level of English Language Performance of NTC III Students in Experimental and Control Groups Learning Woodwork after Exposure to Sawmill Machine Noise. The experimental group had a mean and standard deviation of  $7.50 \pm 0.58$  and the control group had a mean of  $4.00 \pm 1.15$  which showed that students in the experimental group differ by 3.50 from students in the control group. This implies that majority of the students in experimental groups had high English Language Performance Level after exposure to Sawmill Machine Noise using Foam Ear Plugs.

**Hypotheses One:** There is no significant difference between the pure tone average scores of NTC III Students in experimental and control groups after exposure to sawmill machine noise.

**Table 3:** Mean and Standard Deviation of Pure Tone Audiometric Test Levels of NTC III Students in Experimental and Control Groups after Exposure to Sawmill Machine Noise

	Experimental Group	Control Group
Child 1	21.25	51.25
CHILD 2	17.5	52.5
CHILD 3	20.62	53.12
CHILD 4	20	53.12
MEAN	0.02	3.10
SD	-0.05	1.40

Low Level (score 0.1.-2), Moderate Level (score 1.2-.3) and High Level (score 2.4.-6)

Table 3 shows the Hearing Level in Pure Tone Audiometric Test of NTC III in Experimental and Control Groups Learning Woodwork after Exposure to Sawmill Machine Noise. The experimental group had a mean and standard deviation of  $0.02 \pm 0.05$  and the control group had a mean of  $3.10 \pm 1.40$  which showed that students in the experimental group differ by 3.08 from students in the control group. This implies that the hearing level of majority of the students in experimental group has improved greatly than the students in control group after exposure to Sawmill Machine Noise.

**Hypotheses Two:** There is no significant difference between Pre-test and Post-test English language performance mean score of NTC III Students in experimental group.

**Table 4:** t-test Analysis of Mean Scores English language performance of Pre-test and Post-test NTC III Students in experimental group

Experimental	N	$\bar{X}$	SD	df	$t_{cal}$	P-value
Pretest	4	3.50	0.58	6	-9.798	0.000
Post-Test	4	7.50	0.58			

Table 4 shows the t-test Analysis of Mean Scores English language performance of pre-test and post-test NTC III Students learning Woodwork in experimental group. The pre-test means score and standard deviation is  $3.50 \pm 0.58$  while the post-test means score and standard deviation of  $7.50 \pm 0.58$ . In addition, the calculated t-value of -9.798 with a p-value of 0.000 which is less than 0.05 ( $P < 0.05$ ). Therefore, the researcher accepts the alternative hypothesis and rejects the null hypothesis, which implies that there is a significant difference in Mean Scores English language performance of pre-test and post-test NTC III Students learning Woodwork in experimental group.

### 8. Summary of the Findings

It was discovered that Sawmill machine noise can affect hearing level of students.

This study showed that this sawmill machine noise effect to the hearing organ of students can hamper their performance in English language.

The findings showed that usage of ear protective measures in the form of Foam Ear Plug can improve the hearing of students which lead to improvement in their English language performance.

### 9. Discussion of the Findings

In this study, results showed that the hearing levels of the students in experimental and control groups were poor before intervention as was seen in research questions one and two analysis. It showed mild hearing impairment for both groups as the students were tested after woodwork without the intervention of hearing protective measure (Foam Ear Plug). Which means that exposure to loud noise can cause

temporal or permanent hearing impairment. The study of U.S. Department of Health and Human Services (2015) supports this finding. In that they found out that noise can be harmful when they are too loud, even for a brief time, or when they are both loud and long-lasting. Also Department of Labour (2016) expressed that exposure to high levels of noise can cause permanent hearing loss.

However, the finding showed that the hearing levels of the experimental group appreciated over the control group after intervention because they used hearing protective measures in the use of Foam Ear Plug during their presence at noisy woodwork environment. This appreciation is seen in hypothesis one which lead the researcher to reject the null hypotheses in favour of the alternative. This finding have proved right the assertion of American Speech-Language-Hearing Association (2004) which said that hearing conservation is an attempt to minimize the handicap of hearing impairment. That hearing conservation is prevention of significant permanent hearing loss that may result from on-the-job exposure.

Another finding of this study is in the area of English language performance of the students before intervention. The test result showed poor performance in the subject by experimental and control groups before intervention as shown in research question three analysis. This indicated that learning environment dramatically affects the learning outcomes of students. Noise is a distracting factor to students' academic performance and could course damage to their hearing organ. Opara (2007) study attested to these finding. This researcher discovered that in teaching English reading at schools in noisy environment, noise plays a great role in students' performance in school subjects including English language.

The finding of this study indicated that NTC III students in technical colleges who made use of Foam Ear plug in Sawmill workshop performed better in English language than those who did not. This was clearly seen as tested in hypotheses two postulated. The researcher rejected the null hypotheses and accepted the alternative. This was attested by where t-

calculated table values being higher than the t-critical values which showed a significant difference between the post-test mean scores of the experimental group and the control group. To lend credence to this findings, Davis, Elfenbein, Schum, and Bentter (2010) in their study on extensive psychoeducational evaluation revealed that hearing loss of any degree appeared to affect psycho educational development adversely, leading to the conclusion that even minimal hearing loss places students at risk for language and learning problems.

### 10. Recommendations and Conclusion

Based on these findings, the researcher recommended that hearing conservation programmes should be introduced in technical colleges.

Technical College students learning woodwork and other related subjects should be provided Foam Ear Plug in their workshops as a means of hearing conversation.

In conclusion, this study has shown that learning environment, equipment used by students to learn and hearing levels can play a huge roll in academic performance of students. Authorities in-charge of students in technical colleges' welfare while they learn should at all cost provide them with good learning environment to learn. It is the rule all over the world that those who work with very noisy equipment be provided hearing protection and their hours of noise exposure be monitored. This will go a long way to aid the students preserve their hearing and excel in their academic pursuit.

### References

- American Speech-Language-Hearing Association (2004). Causes of hearing loss in adults. Retrieved 2<sup>nd</sup> April 2016 from <https://www.asha.org/>.
- Davis, A. C. (2008). Evidence for effectiveness of noise at work regulation. Retrieved 30th November 2016 from <http://www.hse.gov.uk/>.
- Davis, M. J., Elfenbein, J., Schum, R., & Better, R. A. (2010). Effects of mild and

- moderate hearing impairment on language, educational, and psychology of students. Retrieved from <https://www.jshd,pubs.asha.org/>.
- Marshark, M. (2006). Intellectual functioning of deaf adults and children: Answers and question. *European Journal of Cognitive Psychology*, 18 (1), 70-89.
- Newton, E. (2015). How can teachers help students overcome their fear in school subjects? Retrieved 13<sup>th</sup> August 2018 from <https://www.britishcouncil.org/>.
- Opara, G. C. (2007). The teaching of reading at pre-primary level in the public schools in the rural and urban areas of Imo State. *Applied Literacy and Reading Journal*, 3, 88-97.
- Osisanwo, W., Alabi, V., Owoeye, B., Onuoha, A. & Ahmed (2010). *Brilliant English for senior secondary schools*. Macmillan Nigeria Publish Limited, Nigeria.
- Owobi, E. A. (2015). Effects of comprehension strategy on reading performance of children with hearing impairment in Jos Metropolis. Unpublished Ph.D. Thesis. University of Jos, Jos.
- Stephenson, M. R. (2012). Identification of the minimum noise level capable of producing a temporary threshold shift. *Journal of Environmental Medicine*, 51 (4), 391-396.
- U.S. Department of Health and Human Services (2015). How can noise damage our hearing? Retrieved 20<sup>th</sup> June 2017 from [www.usgov.org](http://www.usgov.org).
- U. S. Department of Labor. (2016). Occupational noise exposure. Retrieved from <https://www.osha.gov/>
- World Health Organization (2009). Prevalence of noise-induced hearing loss among woodworkers. Retrieved 7<sup>th</sup> November 2016 from <https://www.ncbi.nih.gov/>.





## **The Influence of Home Violence on Psychosocial Adjustment of Junior Secondary School Pupils in Ijebu North Local Government, Ogun State Nigeria**

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**Abstract.** Psychosocial adjustment can be demonstrated as young ones strive to progress or pull through in their social and cultural environment. It is a practical term summarizing both the overall physical condition of a person and series of changes taking place in a definite manner in reaction to situations. The purpose of this study was to bring to fore the influence of home violence on psychosocial adjustment of pupils in junior secondary school.

The study employed survey research design of correlational type. The two instruments used for this study were adapted scales, the instruments used were home violence scale and psychosocial adjustment scale. Using simple random sampling technique, two hundred and fifty (250) pupils were selected from ten junior secondary schools in Ijebu North Local Government. The data collected were thus analyzed using multiple regression analysis and T-test statistics. The findings of the study revealed there is a significant effect of home violence on psychosocial adjustment of pupils in junior secondary school in Ijebu North Local Government and also there is a significant difference of home violence on psychosocial adjustment of male and female pupils in junior secondary schools in Ijebu North Local Government.. The study therefore recommends that parents should be mindful of the presence of their children when there is a disagreement and they should not let it degenerate into violence.

Schools should organize seminars for parents to enlighten them on the consequences of home violence on pupils.

### **1. Introduction**

Transitioning from primary school to the junior secondary school could be very stressful and demanding for the child. This is expressed in anxiety over increased school workload; having to deal with many subject teachers and classmates (Hanson, 1997; Way, Reddy & Rhodes, 2007). There is therefore need for the child to be psychologically and socially adjusted in order to cope with the school routines and expectations.

Psychosocial adjustment can be demonstrated as young ones strive to get along or pull through in their social and cultural environment (Lazarus, 1966). It is a practical term summarizing both the overall physical condition of a person and series of changes taking place in a definite manner in reaction to situations (Hoyt & Stanton, 2012). Besides the stress that children experience in school, there are other factors that induce stress for the child; this includes peer pressure, fear of neglect, poverty, chronic illness, social isolation, uncertainty, home violence, etc. This paper will focus on influence of home violence on psychosocial adjustment of children.

In recent times, the issue of home violence has become a major concern globally and it is not peculiar to Nigeria (Osofsky, 1995). Women and children are mostly the victims of home violence (Garcia-Moreno, Janson, Ellsberg, Heise & Watts, 2006).. Previous investigations indicate that subjection of children to home violence enlarges the chances of emotional health complications in children (Ellonen, Piispa, Peltonen, & Oranen, 2013). Studies also submits that exposure to violence in the home can make children vulnerable to various unfavorable outcomes for instance, misconduct, anti-social behaviour, psychological dysfunction, irrational and physical unfitness outcomes (Kernic, Wolf, Holt, McKnight, Huebner & Rivara, 2003; Onyskiw,2003; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003)..

Despite the fact that numerous studies establish a correlation between exposure to home violence and adverse result, a portion of the children who are exposed do not develop such result. Kitzmann, Gaylord, Holt and Kenny (2003) found 37% of children exposed to home violence displayed outcomes that are identical to or superior to those children not exposed to home violence. This suggests that there is a controversy on effects of home violence on behavior of children and particularly the psychosocial adjustment of children. Based on this premises, this study set out to examine the influence of home violence on psychosocial adjustment of junior secondary pupils. It also examined if there are differences in the way home violence affects psychosocial adjustment of male and female pupils in Ijebu North Local Government Area of Ogun State, Nigeria.

## 2. Research Hypotheses

The following research hypotheses were formulated to guide the study:

Ho1. There is no significant effect of home violence on psychosocial adjustment of junior secondary school pupils in Ijebu North Local Government Area of Ogun State.

Ho2. There is no significant difference of home violence on psychosocial adjustment of male

and female pupils in Ijebu North Local Government Area of Ogun State.

## 3. Methodology

### 3.1 Research Design

Survey research design of correlational type was adopted to carry out this study. The population comprised the entire junior secondary school pupils in Ijebu North Local Government Area. Simple random sampling technique was used to select two hundred and fifty (250) junior secondary school pupils in Ijebu North Local Government.

Two instruments used to collect data for this study are: Home violence scale.This 13 item scale was adapted from some items in Nursing Students' Attitude Towards Domestic Violence Questionnaire developed by Blideman (2010). It assesses the disposition of pupils to home violence with items like The amount of home violence in the media today strongly influences the husband to physically assault his wife. Home violence is a result of wives being regarded as property by our society, A husband who assaults his wife should be locked up for the act. A husband who physically assaults his wife is "mentally ill" or psychologically disturbed. Participants responded by indicating their agreement to the 13 statements using a four-point scale ranging from 1(Strongly Disagree) 2(Disagree) 3(Agree) 4(Strongly Agree). In order to determine the reliability of the instrument, a test-retest reliability method was used and a coefficient of 0.86.

### 3.2 Psychosocial Adjustment Scale

The scale consists of 17 items adapted from Psychological adjustment scale designed by Wang (2009). The items are in conformity with the likert response format ranging from 1=strongly disagree and 5= strongly agree. The items were modified and revalidated by using concurrent validity method. Psychology Adjustment was administered to 30 junior secondary school pupils along with psychosocial adjustment scale modified by the researcher. The scores obtained from the two scales were

correlated using the Pearson product moment correlation coefficient. The concurrent validity of the instrument gave a correlation index of 0.74.

**3.3 Procedure for Data Collection**

The scales were personally administered on the participants in their schools by the researcher

and these were collected back immediately after completion. All the returned (250) scales were checked to ensure that they were adequately filled. After collation of the scores, the multiple regression and T-test statistics were used to analyze the data.

**4. Results**

**Hypothesis 1:** There is no significant effect of home violence on psychosocial adjustment of junior secondary school pupils in Ijebu North Local Government.

**Table 1:** Regression analysis of effect of home violence on psychosocial adjustment of junior secondary school pupils in Ijebu North Local Government'

Multiple R=.500 <sup>a</sup> R Square = .250 Adjusted R Square = .247 Std. Error of the Estimate = 4.24002						
Source of Variation	Sum of Squares	Df	Mean Square	F	Sig.	Remarks
Regression	1484.018	1	1484.018	82.548	.000 <sup>b</sup>	Reject H <sub>0</sub>
Residual	4458.482	248	17.978			
Total	5942.500	249				

a. Dependent Variable: Psychosocial Adjustment  
b. Predictors (Constant):Home Violence

Table 1 revealed a significant effect of independent variable, home violence in the prediction of the dependent variable, psychosocial adjustment of junior secondary pupils.(F<sub>(1,248)</sub>=82.548; P<0.05). This means that home violence predicted the psychosocial adjustment of junior secondary pupils. The analysis also yielded a co-efficient of multiple regression of .500 and multiple R Square of .250 and Adjusted R Square of .247 indicating that the independent variable (home violence) accounted for 25% of the total variance in the pupils psychosocial adjustment. Thus, there is a significant effect of home violence on psychosocial adjustment of junior secondary pupils in Ijebu North Local Government.

**Hypothesis 2:** There is no significant difference of home violence on psychosocial adjustment of male and female pupils in Ijebu North Local Government.

**Table 2:** T-test analysis of significant difference of home violence on psychosocial adjustment of male and female pupils in Ijebu North Local Government.

Respondents	N	Mean	SD	Df	T	Sig of t
Male	100	64.90	8.99	248	-3.179	.002*
Female	150	70.00	14.19			
Total	250					

\*indicate significant t at p<0.05

The result in table above revealed significant outcome (t = 3.179, p<0.05). This outcome implies that the sampled male does differ significantly from the sampled female pupils in the effect of home violence on pupils' psychosocial adjustment. The mean difference of home violence on psychosocial adjustment on

pupils' score of 64.90 recorded by the male is less than that of the female pupils who recorded a mean score of 70.00 and the difference is statistically significant. As a result the null hypothesis 2 was rejected. Hence, there is a significant difference of home violence on

psychosocial adjustment of male and female pupils in Ijebu North Local Government.

## 5. Discussion

The result of this study revealed that there is a significant effect of home violence on psychosocial adjustment of junior secondary school pupils in Ijebu North Local Government. This implies that the psychological well-being and the ability of the pupils to relate with significant others correlates with home violence. This supports the study of the findings of Ellonen, Piispa Peltonen and Oranen (2013) that revealed that children who witnessed and experienced physical violence at home significantly displayed adjustment problems. This is also in consonance with the findings of Moylan, Herrenkohl, Sousa, Tajima, Herrenkohl and Russo (2010) that shows that children exposed to domestic violence have higher levels of emotional and behavioural problems. The findings above may be as a result of exposure of the children to the abusive and physical violent acts of their parents or guardians which affects their mental and social behavior. This may be responsible for the aggressive and violent behavior of children in the junior secondary school.

The findings of the second hypotheses revealed that there is a significant difference of home violence on psychosocial adjustment of male and female pupils in Ijebu North Local Government. This is consistent with the findings of .Kilzai, Ramanauskiene and Dumciene, (2019). that revealed that psychosocial adjustment among students of junior high school age was stronger for females than males.

## 6. Conclusion

This study has revealed that home violence has a major influence on the psychosocial adjustment of junior secondary pupils. It implies that the changes that occur in the lives of pupils are mostly caused by their experiences and exposure. Also, the way pupils are been affected by home violence varies according to their gender. Hence, this study concludes that home

violence has an adverse effect on the psychosocial changes experienced by junior secondary school pupils in Ijebu North Local Government.

## 7. Recommendations

Based on the findings of this study, the following recommendations are given so as to reduce the occurrence of home violence among parents and in the community:

- Parents should be mindful of the presence of their children when there is a disagreement and they should not let it degenerate into violence.
- Parents should endeavor to settle their differences in the absence of their children or wards so as to help the psychological and social lives of their children.
- Schools should organize seminars for parents to enlighten them on the consequences of home violence on pupils.

## References

- Blideman A. (2010), Nursing Students' Attitudes towards Domestic Violence. Tumanini University, Kilimanjaro Christian Medical College Tanzania PhD Thesis.
- Ellonen N., Piispa M.,Peltonen K.,Oranen M.(2013). Exposure to Parental Violence and Outcomes of Child Psychosocial Adjustment. *Violence Vict.*2013, 28(1):3-15.
- Garcia-Moreno C., Jansen H. A.F.M., Ellsberg, M.,& Heise L., Watts C.H. (2006), Prevalence of Intimate Partner Violence: Findings from the WHO multi-country study on women's health and domestic violence. *The Lancet*, 368 (9543), 1260-1269.
- Hanson A., (1997), *Child Psychology*. Oxford.
- Hoyt M.A. & Stanton A.L. (2012). Adjustment to chronic illness. In A..Baum, T.A.Revenson, & J. Singer (Eds.), *Handbook of health psychology* (2<sup>nd</sup>

- ed.,pp.219-246). New York, NY: Psychology Press.
- Kernic M. A., Wolf M. E., Holt V. L., McKnight B., Huebner C. E., & Rivara F. P.(2003), Behavioural problems among children whose mothers are abused by an intimate partner. *Child Abuse & Neglect*, 27(11), 1231-1246
- Kilzai S., Ramanauskiene I. & Dumciene A. (2019), Peculiarity of the Psychosocial Adjustment and Anxiety of Adolescence.
- Kitzman K.M., Gaylord N.K., Holt A.R., & Kenny E.D.(2003), Child witnesses to domestic violence: A meta-analytic review *Journal of Consulting and Clinical Psychology*, 71(2),339-352.
- Lazarus R.S. (1966), *Psychology Stress and the Coping Process*. New York, NY: McGraw-Hill.
- Moylan C. A., Herrenkohl T. I., Sousa C., Tajima E. A., Herrenkohl R. C., & Russo, M. J. (2010), The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *Journal of Family Violence* 25(1), 53-63.
- Onyskiw J. E. (2003) , Domestic Violence and Children's Adjustment: A Review of Research *Journal of Emotional Abuse* 3(1-2)11-45.
- Osofsky J.D. (1995), The effect of exposure to violence on young children. *American Psychologist* 50 (9),782.
- Wang,W. (2004), Chinese international students' cross-cultural adjustment in the U.S.: the roles of acculturation strategies self-constructs, perceived cultural distance and English self-confidence. University of Texas at Austin PhD Dissertation.
- Way N., Reddy R., Rhodes J. (2007), Students perception of school climate during the middle school years: associations with trajectories of psychological and behavior adjustment. *American Journal of Community Psychology* Nr.40.p.194-213
- Wolfe D.A., Crooks, C. V., Lee, V., McIntyre-Smith A., & Jaffe P. G. (2003), The effects of children's exposure to domestic violence: A meta-analysis and critique clinical child and family psychology Review, 6(3),171-187.





## Perception and Utilization of Healthcare Services among SS 2 Students in Jos North Local Government Area of Plateau State, Nigeria

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**Abstract.** This research work was carried out to investigate the perception and utilization of healthcare services among SS 2 students in Jos North LGA of Plateau State. The research was conducted using cross-sectional survey research method through structured questionnaire which were administered to two hundred SS 2 students who served as the respondents. The data collected from the respondents was analyzed using simple frequency and percentage method. The result revealed that 177 (88.5%) respondents perceived healthcare services to be relevant to the health and wellbeing of an individual, 170 (85%) said that healthcare provides both preventive and curative services, 134 (67%) perceived healthcare services to be expensive and 124 (62%) agreed that most doctors and nurses have negative attitude towards their patients. Based on the findings, it was revealed that the level of utilization of health services among SS 2 students is low- 110 (55%) and health services are lacking in most schools- 91(45.5%). The result also revealed that schools management had a negative attitude towards health services- 133 (66.5%). Based on findings, it was recommended that the government and stakeholders should subsidize the cost of health services and improve primary health centers in order to increase utilization. School management should create adequate time for students to access and utilize health services

in the school clinic. Also, the school management should provide adequate health services and partner with health agencies and workers to periodically evaluate students' health.

### 1. Introduction

Good health is a fundamental requirement for living a socially and economically productive life. Obiechina & Ekenedo (2013) noted that health constitute a priority in the life of every individual because it determines to a great extent, the level at which an individual functions in the society. Health guarantees hope and progress for individuals in any society (Letty, 2016). This implies that good health is a determinant of success in the life of every individual and therefore, it must be developed and maintained by every individual. In order to do this, it is imperative that health services should be provided and effectively utilized.

Health Services are relevant, regardless of age and gender and that is why every good government often emphasizes on the health of its citizens and that is the reason why the three tiers of government are concerned about good health delivery. Umunna (2012) pointed out that the Nigerian Governments have made tremendous contribution towards the provision of qualitative healthcare services to its population. However,

Utilization of these services remains dependent on the perception of individuals.

Perception is the organization, identification and interpretation of sensory information in order to represent and understand the presented information or the environment (Ricketts, 2009). It is the process of recognizing and interpreting sensory stimuli. It also include how one responds to information from the environment (Mallum & Haggai, 2004). According to Kuponiyi (2016), perception has an immense impact on the enrolment and utilization of health services. Similarly, Adams & Awunor (2014) made it clear that perception of poor quality and inadequacy of health services determine largely, the level of utilization of healthcare services.

Highlighting on health services, Umunna (2012) stated that health services are made up of important components such as health appraisal, health examination, referral services, health counseling, emergency care for sicknesses and injuries, correction of remedial defects, ambulatory services, health screening, prevention and control of communicable diseases etc. These services include both preventive and curative services and also provide information, to the public, necessary to develop and maintain good health (Kuponiyi, 2016). These services are centered on making healthcare accessible, high quality and patient - centered. These variables are tested in this work.

Good utilization of health services serves to improve the health of the population (Adams & Awunor, 2014). Healthcare service utilization is a major determinant of health. Its role in providing and maintaining optimum health status cannot be overemphasized. WHO (2011) recommended the utilization of healthcare services as a basic primary healthcare concept. However, studies have shown that the presence of health services alone is not enough to guarantee their use as other socio - economic factors could influence access and utilization. Low health facility utilization is often a reflection of poor quality of services and poor attitude of staff (Kuponiyi, 2016).

For example, a study done in a rural community

in Plateau State, Nigeria, among 360 mothers revealed that high cost of drugs (29.0%), service charges (19.0%), easy access to traditional healers (39.0%), and difficulty in getting transport to a health facility (30.0%) were the major factors that caused non- attendance at health facilities (Kuponiyi, 2016). Another cross sectional survey accessing the utilization of primary healthcare (PHC) facilities in a rural community in Southwest Nigeria, showed that 40.0% of the respondents who were ill in the preceding six months visited a PHC facility for treatment, while others relied on self-medication (Adebayo & Asuzu, 2015).

Many professionals in the field of health and education have confirmed that there is a strong interconnected factor between health status of a student and his academic achievement. That is, for any meaningful learning to occur, the student needs to be in a state of good health (Baltag, Pachyna, & Hall, (2015). Educational achievement is strongly associated with students' health (Ogbiji, 2011). The healthier the students, the more accurate they can think, perform and the more productive or successful they become. This is the reason why quality attention should be focused on the health of the Nigerian Secondary School students who constitutes an important segment of the society.

Secondary School is where students receive secondary education which is the education received after the primary education and before the tertiary stage. Students who are in the secondary school are adolescents within the ages of 11 - 18. The secondary school is a unique and powerful institution which serves to mould the behavior of students who attend such school, positively. The teachers and schools generally are academically prepared to organize developmental and appropriate learning experiences that can empower students to embrace safer and healthier lifestyles (Kuponiyi, 2016).

It is noticeably clear that a sizeable proportion of Nigeria's population are students. They constitute a significant portion of the country's population. The role and contribution of these students to national growth and development

cannot be overstated. They serve as the bedrock for economic, political, technological, agricultural and educational development in the nation (Ola, 2001). It is therefore necessary to protect, preserve, maintain and promote the health of these students by providing them with comprehensive health care services.

According to Kuponiyi (2016), the school health programme is one of the strategies for promoting health services in secondary schools. This programme provides advisory and counseling services for the school. It also provides pre-entry medical screening, routine health examination, school health records, sick bays, first aid and referral services.

The need for effective utilization of health services by students cannot be overemphasized due to the complex nature of the various physiological and sociological health problems common among adolescents of secondary school age, hence the present study on perception and utilization of health services among SS 2 students in Jos North LGA of Plateau State.

Health services are relevant to every individual due its great role in the health and development of the individual. It is therefore necessary that the provision and utilization of these services should not be restricted to any individual based on ethnicity, religion, gender, or other socioeconomic factors. Over the years, health services have been provided and made accessible to students through the school health programme (Ogbiji, 2011). This has contributed immensely to the high quality of education in Nigeria by promoting the health of the students who utilizes these services effectively.

However, the level of utilization of these services remains very low. This is due to the students' perception of their health and the health services. According to Obiechina & Ekenedo (2013), the low utilization of health services among adolescents is because they believe that they are completely healthy and not in need of any health services. Contrary to their belief, studies have shown that there exist high burden of morbidity among adolescents. The health challenges faced by adolescents include infectious diseases, accidents and injuries,

malnutrition, mental disorders, obesity, substance abuse, HIV and violence (WHO, 2011).

Considering these health challenges, there is need to increase utilization of health services among secondary school students. This is absolutely necessary because if the present trend of low utilization remains persistent, it could lead to uncontrollable increase in morbidity rate, low productivity and death. That is the reason why the present study on Perception and utilization of health services among SS 2 students in Jos North Local Government Area of Plateau State is very important.

To give direction to this work, the following research questions were stated:

- What are the perceptions of SS 2 students towards health services?
- What is the level of utilization of health services among SS 2 students?
- How available are health services in Jos North LGA?
- What are the attitudes of secondary school management towards health services?
- What are the practices of SS 2 students towards the use of available health services?

## 2. Methods

This study used a cross-sectional survey. This is because in cross sectional survey, data are collected from a representative sample using questionnaire, interview, observation and test. According to Kerlinger (1993), a survey gathers data at a particular point in time.

The population of the study is made up of all SS 2 students in the secondary schools in Jos North Local Government Area of Plateau State.

For this research work, the sample of students was drawn from twenty (20) secondary schools in Jos North Local Government Area of Plateau State. Two hundred (200) respondents (Students) were sampled for the study. That is ten (10) respondents were selected from each of the twenty (20) selected schools.

For this study, a simple random technique was used to select twenty (20) schools and ten (10) respondents in each of the selected schools. A simple random sampling technique is used because it allows equal opportunity for the sample variables to be selected and participate in the study.

For the purpose of this research work, the instrument used for data collection is a structured questionnaire. The questionnaire was developed by the researcher based on an intensive literature review on perception and utilization of health services.

The questionnaire was designed by the researcher to collect information from the respondents. The questionnaire was made of five sections.

Section one comprised of perception of health services; section two dealt with the utilization of health services; section three dealt with the availability of health services; section four comprised of attitudes of school managements toward health services while section five dealt with practices that endangers students' health.

The questionnaire was designed by the researcher after an intensive literature review on the topic. The items on the questionnaire were structured to provide answers to the research questions formulated.

A research instrument is said to be valid when it measures truly and accurately what it intends to measure. In validating the research instrument, the issues of validity and reliability of the instrument are imperative. Validity is the most vital characteristic of any research instrument. For any research instrument to be valid, it must be relevant and reliable. The reliability of the

research instrument therefore needs to be established to further strengthen its validity.

To further ensure the content validity of the instrument, the researcher subjected it to judgment from an expert so as to obtain the adequacy and comprehensiveness of the items as well as the clarity of expressions used. Based on the expert's advice, some items were modified, some were retained and others deleted.

Reliability estimate are to evaluate the stability of measures administered at different times to the same individual using the same standard (test retest reliability).

The researcher used questionnaire as the major instrument for data collection. The researcher visited all the selected secondary schools in Jos North Local Government Area of Plateau State and met the principals and teachers with the letter of introduction obtained from the department through the project supervisor soliciting the cooperation of the selected respondents. He was then granted the permission to conduct the research in the schools. Then this letter will be attached to the questionnaire that would be administered. The sampled respondents are then required to respond to those statements in the questionnaire based on their individual experience as the researcher administered the questionnaires personally. And for the purpose of ensuring hundred percent return of the questionnaire, the completed questionnaires were collected on the spot.

Simple percentage method of data analysis was employed to analyze the data. The choice of simple percentage method of data analysis is appropriate because of clarity in the presentation of information thus facilitating the reader's understanding

### **3. Results and Discussions**

Table 1: Perception of SS 2 Students toward Health Services

N = 200

S/N	ITEMS	YES		NO	
		f	%	f	%
1	Health services are relevant to the health and wellbeing of an individual	177	88.5	23	11.5
2	Health services provides both preventive and curative service	170	85	30	15
3	Health services are expensive	134	67	66	33
4	Only those close to health facilities are able to use health services	64	32	136	68
5	Health services are restricted to some tribe/culture	53	26.5	147	73.5
6	Only adults are able to access health services	60	30	140	70
7	Most doctors, nurses and health personnel have poor/ negative attitude towards their patients	124	62	76	38

The results in Table 1 shows that health services are relevant to the health and wellbeing of an individual –177 (88.5%), health services provides both preventive and curative services -170 (85%), health services are expensive -134(67%) and most doctors, nurses and health personnel have poor/negative attitude towards their patients -124 (62%) were the perception of the SS 2 students in Jos North LGA of Plateau State.

However, only close to health facilities are able to use health facilities -64(32%), only adults are able to access health services -60 (30%) and health services are restricted to some tribe/culture -53 (26.5%) were not the perception of the SS 2 students towards health services in Jos North LGA of Plateau State.

Table 2: Level of utilization of health services among SS 2 student in Jos North LGA.

N = 200

S/N	ITEMS	YES		NO	
		f	%	f	%
1	I don't use the school health services	158	79	42	21
2	I only use health services when critically ill	150	75	50	25
3	I frequently go for medical check- up and examination	32	16	168	84
4	I have never gone for health counseling	134	67	66	33
5	I use health services despite the distance of health clinics from my house	64	32	136	68
6	I don't use health services because it is time consuming	120	60	80	40

The results in Table 2 shows that I don't use the school health services -158 (79%), I only use health services when critically ill -150 (75%), I have never gone for health counseling- 134 (67%), I don't use health services because it is time consuming- 120 (60%) while I use health services despite the distance of health clinics from my house- 64 (32%) and I frequently go for medical check-up and examination- 32 (16%). This indicated a low level of utilization of health services among SS 2 students in Jos North LGA.

Table 3: Availability of health services in secondary schools

N= 200

S/N	ITEMS	YES		NO	
		f	%	f	%
1	There is a health clinic/dispensary in my school	130	65	70	35
2	There is an emergency care service in my school	60	30	140	70
3	My school clinic has enough sick bay for patients	65	32.5	135	67.5
4	My school provides ambulatory service	66	33	134	67
5	There is/are health personnel in my school	137	68.5	63	31.5

The result in Table 3 above reveals that 137 (68.5%) respondents indicated that there is/are health personnel(s) in their school, 130 (65%) indicated that there is a health clinic/dispensary in their school. Whereas, only 66 (33%) respondents indicated that there school provides ambulatory services, 65 (32.5%) respondents indicated that their school has enough sick bays for patients and 60 (30%) respondents

indicated that there is an emergency care service in their schools. Therefore, there is lack of health services in secondary schools in Jos North LGA.

Table 4: Attitude of secondary schools managements toward health services  
N= 200

ITEMS	YES		NO	
	f	%	f	%
1 We are sent home from school whenever we are ill.	84	42	116	58
2 The school management does not conduct regular health screening activities for the students.	158	79	42	21
3 Health equipment and machines are insufficient in the school clinic/dispensary.	145	72.5	55	27.5
4 The school management does not provide doctors or nurses to evaluate students' health.	157	78.5	43	21.5
5 Health records of every student are provided and kept in the school clinic/dispensary.	124	62	76	38

The results in Table 4 shows that the school management does not conduct regular health screening activities for students- 158 (79%), the school management does not provide doctors and nurses to evaluate students' health- 157 (78.5%), health equipment and machines are insufficient in the school clinic/dispensary- 124 (62%).

The result therefore reveals that secondary schools managements have poor negative attitude towards health services.

Table 5: Practices that endanger students' health  
N= 200

S/N	ITEMS	YES		NO	
		f	%	f	%
1	Inadequate physical activity	119	59.5	81	40.5
2	Smoking	176	88	24	12
3	Youth violence	76	38	124	62
4	Unhealthy diet	173	86.5	27	13.5
5	Substance abuse	103	51.5	97	48.5

The results in Table 5 reveals that smoking -176 (88%), unhealthy diet- 173 (86.5%), inadequate physical activity- 119 (59.5%) and substance abuse- 103 (51.5%) were the practices that endanger students' health in Jos North LGA.

#### 4. Discussions

The results in Table 1 shows that the SS 2 students have the perception that health services are relevant to the health and wellbeing of an individual (88.5%). This result was expected because of the students' level of knowledge of health services. Also, the students have used or accessed a health service at one point of their lives either for preventive or creative purpose and so they perceive it to be relevant to their health and wellbeing and also render preventive and curative services.

The students also perceive health services to be

expensive (67%). This is not surprising as the cost medication and treatment is high in most hospitals coupled with the low income level of most parents in Jos North LGA. This is in relation to Kuponiyi (2016) that high cost of drugs, service charges, easy access to traditional healers and difficulty in getting transport to a health facility were the major factors that caused non - attendance at health facilities.

The Table also reveals that the students perceive that most doctors, nurses and health personnel have poor/ negative attitude towards their patients (62%). This perception of negative attitude of health workers towards patients is derived from the students' previous experience(s) with health workers either in the school or outside the school. This is in line with Rickett (2009) that perception are determine by the people's level of satisfaction with the health services, as well as their assessment of the

attitude of health workers, which often determines whether they would return in future. This then shows that the students are dissatisfied with the attitude of health workers.

Generally, the result shows that the students have a good perception of health services due to their level of knowledge and experience with the services.

The results in Table 2 revealed that the students don't use the school health service (79%), only uses health services when critically ill (75%) and have never gone for health counseling (67%). This shows that the level of utilization of health services among the students is low.

The result also showed that the students don't use health services because it is time consuming (60%). This reason for the low level of utilization of health services among the students was expected because the students spend most of their time in the classroom with various activities. They have no time for accessing health centers and when they do, a lot of time would be spent before they would be attended to. This is in line with what Kuponiyi (2016) stated that the key barriers to utilization of health services by students are time constraints/ unsuitable service schedule and long waiting time. Thus, it is not surprising that over half (79%) of the students don't use the school health services and only uses health services when critically ill (75%). Even when having symptoms of a sickness such as headache, dizziness, fever, cough etc, the students still don't go for a health examination/ check- up till the condition becomes severe.

From the results in Table 3, 68.5% and 65% of the respondents revealed that there is/are health personnel(s) in their schools and a health dispensary (clinic) respectively. However, only 33% indicated that their schools provides ambulatory service, 32.5% indicated that their schools has enough sick bays for patients and just 30% indicated that there is an emergency care service their schools. This result therefore indicates that there is lack of health services in secondary schools in the area. As a result of this, the students won't be given adequate health care they need. This result was expected because

provision of health services in most of the schools has become a neglected component. This is in line with Kuponiyi (2016) that there is a dearth of school health clinics in Nigeria and where these clinics exists, the services are unavailable or not comprehensive enough to meet the needs of the students. Also, Olawole (2010), explained that this problem of deficient health services in schools is as a result of lack of funding, poor linkages with other relevant health service providers, inadequate time, skills and confidence with working with young people. Hence, health services are inadequate in secondary schools in Jos North Local Government Area.

It was revealed in Table 4 that the school management provides and keeps health records of the students in the school clinic (62%) but the school management do not conduct regular health screening activities for the students (79%), they don't provide doctors or nurses evaluate students health (78.5%) and they do not provide sufficient health equipment and machines for the school clinic/ dispensary (72.5%). This indicates a poor attitude of secondary schools management towards health services. This result was expected because as earlier pointed out, provision of health services is neglected component in most schools by the school management. It is a common practice by school managements to run the schools without setting plans to provide and maintain health services. Also, the students are not being evaluated or screened to determine their health status, from the beginning to the end of a term and even an academic session. This agrees with Ojugo (2015), that school managements are failing to recognize the importance and vital role that health services play in protecting and promoting the health of students. This is because of their little efforts toward providing health services in secondary schools. In line with this, Odeyemi & Chukwu (2015) stated that school children in Nigeria were not provided with basic health examination services and pre- entrance medical examination hence, necessary and basic health information about the children were absent. There is also failure by the school managements to conduct routine medical examination which would have detected

deviations from normal. This makes early referral impossible and leaving the students vulnerable to preventable diseases. Therefore, secondary schools management have poor attitude towards health services.

The result in Table 5 shows that smoking (88%), inadequate physical activity (59%), unhealthy diet (59%) and substance abuse (51.5%) were the practices that endanger students' health. This result was expected because over the years, the rate of students (adolescents) involvement in smoking has been increasing significantly. This is most likely to be as a result of peer pressure. Inadequate physical activity was also indicated as dangerous to students' health because most of the students especially the female students don't participate in physical activities. Even when the school management set up a day for games or sport, they prefer to remain their classrooms or hostels. Eating unhealthy diet is also a practice that endangers the health of students. This may be as a result of financial problems, limiting the students to poor and unhealthy foods, ignorance of the nature certain foods and unhealthy dietary habits such as eating unwashed foods (fruits) or eating without washing the hands etc. This is in relation with Omori & Lingersoll (2015) that adolescents (students) engage in problematic and health endangering practices including delinquent actions, use of cigarette & alcohol, unsafe sexual activities and poor dietary habits. This might be due to curiosity, peer pressure, ignorance etc.

It was concluded that the perception of health services among SS 2 students in Jos North LGA includes that health services are relevant to the health and wellbeing of an individual, health services provide both preventive and curative services, health services are expensive and most doctors, nurses and health personnel have poor/negative attitude towards their patients.

The level of utilization of health services among the students is low as the students do not use the school health services, only use health services when critically ill and have never gone for health counseling.

School managements have a negative attitude

toward health services as they do not conduct regular health screening activities for the students, they do not provide doctors or nurses to evaluate the students' health, they do not provide sufficient health equipment and machines in the school clinic/dispensary but only provide and keep health records of the students in the school clinic.

The practices that endanger students health in Jos North Local Government Area include smoking, inadequate physical activity, unhealthy diet and substance abuse.

## 5. Recommendations

The government and stakeholders should subsidize the cost of health services and improve primary health centers in the area. This will enable the people to access the health services without facing financial barriers. Also, health practitioners should try and develop good attitude towards their patients as this will create a positive impression of them in the minds of the patients and would increase the level of utilization of health services.

The students should be made to understand the importance of utilizing available health services and go for regular health examination so as to detect any health problems earlier before it becomes worse. The school management should endeavor to create time for the students (apart from their class periods) to access the school clinic or dispensary to obtain necessary health services. This will eliminate time barrier to utilization of health services

The government should assist school management in funding the provision of health services.

Also enough sick bays, drugs, machines and equipment should be provided by the school management to meet the health needs of students.

School management should prioritize the health of the students. This will enable them formulate and execute plans that will increase the availability and utilization of health services. They should also partner with health workers

who would periodically evaluate the health of the students.

Student should be warned by teachers and parents on the dangers of these practices and they should endeavor to participate more in physical activities, consume good foods maintain good dietary habits, avoid drug and substance abuse and live a good lifestyle.

## References

- Adam, V. Y. & Awunor, N. S. (2014). Perceptions and Factors affecting Utilization of Health Services in a Rural Community in Southern Nigeria. A Peer-Review Journal of Biomedical Sciences. Vol. 13(2), 117-124.
- Adebayo, A. M. & Asuzu, M. C. (2015). Utilization of a Community Based Health Facility in a Low- Income Urban Community in Ibadan, Nigeria. *Afr J Prm Health*.7(1), 735- 743.
- Baltag, V., Pachyna, A. & Hall, J. (2015). Global Overview of School Health Services. *Health Behavior & Policy Review*. Vol. 2 (4), 268-283.
- World Health Organization- WHO, (2011). Youth Risk Behaviour Surveillance System. National Overview.
- Kuponiyi, T. O (2016). School Health Services and its Practice among Public and Private Primary Schools in Nigeria.
- Letty, L. (2016). Health Consultation Services to Family Daycare Homes in Nigeria. Journal of School Health. 62 (1) 21- 30.
- Mallum, J. O. & Haggai, M. P. (2000). *Educational Psychology: Classroom Practice*. Jos: Ya-Byangs Publishers.
- Obiechina, G. O. & Ekenedo, G. O. (2013). Factors affecting utilization of university health services in tertiary institution in Southwest Nigeria. *Niger: J clin pract*.
- Odeyemi, K. A., Chukwu, E. E. (2015). Knowledge, Attitude and Practice of School Health among Primary School Teachers in Ogun State, Nigeria. *Niger J Paed*. Vol. 42(4), 340-345.
- Ogbiji, J. E. (2011). The State of Administration of Health Services among Secondary Schools in Cross River State of Nigeria: African Research Review. An International Multidiscipline Journal, Ethiopia\_Vol 5 (1) 292- 301.
- Ojugo, A. I. (2005). Status of Health Appraisal Services for Primary School Children in Edo State, Nigeria: International Electronic Journal for Health Education. Vol. 8, 146- 152
- Ola, J. A. (2001). School Health in Nigeria: National Strategies in Improving Health through Schools: National and International Strategies, WHO, Geneva. 81-84.
- Olawole, M. O. (2010). The Choice of Health Care Facilities in Rural Areas of Nigeria: Analyzing the Impact of Distance and Socio-Economic Factors. 9(1), 265-281.
- Omori, M. & Ingersoll, G.M. (2005). Health endangering behaviour among Japanese College students: A Test of Psychosocial Model of Risk Taking Behaviour. Journal of Adolescence. Vol. 28.17-33.
- Ricketts, T. C (2009). *Rural Health in the United States*. New York: Oxford University Press.
- Umunna, Z. I. (2012). Exploring the factors that contribute to Poor Utilization of Primary Healthcare Services: A Study of Two Primary Health Care Clinics in Nasarawa State, Nigeria: A Mini Thesis, University of the Western Cape.



## **Cognitive Style and Gender as Predictors of Students' Academic Performance in Basic Science and Technology in Mkpato Enin Local Government Area, Akwa Ibom State, Nigeria**

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**Abstract.** This survey study investigated influence of cognitive styles on students' academic performance in basic science and technology in Mkpato Enin Local Government Area. Two main objectives guided the study. The population of this study comprised of 1679 (786 male and 893 female) junior secondary one (JSS 1) students. One school was randomly selected from schools in the study area. Convenience sample of eighty (80) students was then used. Two instruments used were-Cognitive Style Test ( $r=0.82$ ) and Basic Science and Technology Performance Test ( $r=0.89$ ). Two research questions were posed and answered while two hypotheses were tested at 0.05 level of significance. Data were analyzed using mean scores, T-test and ANOVA. Results showed that there was a significant influence of cognitive style on students' academic performance in basic science and technology ( $t=14.953$ ;  $df=78$ ;  $p<.05$ ). There was significant difference in the performance of male and female Basic Science and Technology Students with reflective cognitive style and those with impulsive cognitive style  $\{F_{(1, 79)}=12.413$ ;  $P<0.05$ ). The result also showed that more male students were found to be impulsive while more female students were reflective. This study therefore, recommended that teachers should determine cognitive styles of the learners as an

integral part of lesson preparation to enhance students' overall learning outcomes in basic science and technology.

**Keywords:** Cognitive style, Gender, Achievement, Basic Science and Technology

### **1. Introduction**

A Child by nature is highly inquisitive. He interacts with the natural world to derive meanings from objects, events and phenomena. This child has a unique method of understanding what he sees, smells, touches, hears and tastes. The child has a method of reasoning and making decisions based on his perception and observation. Based on his natural background, every child (learner) in a given classroom situation when exposed to a particular stimulus has a specific method of making meanings, reasoning, understanding and making decisions on the stimulus. This means that an individual child possesses different cognitive styles. Cognitive style is the specific method or way a child employs in making meanings, reasoning, understanding and making decisions (judgments) when exposed to a learning stimulus.

Höffler, Koć-Januchta and Leutner (2016) observed that individuals that possess different cognitive styles also demonstrate different behaviour when learning and this could serve as an indicator that cognitive style might be a factor to be considered in teaching. Hence, it is not been overstatement to say that cognitive style of learners prepared for any instructional activity should be identified (discovered) for effective learning.

Different researches identify different cognitive styles. Reflection-Impulsivity (R-I) (Kagan, 1965), Converger–

Diverger Construct (Hudson, 1967), Hemispherical-Lateralisation concept (Ornstein, 1973), Field Dependence–Field Independence model (FI-FD) (Witkin, Oltman, Raskin & Karp, 1971), Adaption–Innovation Theory (Kirton, 1976), Wholist–Analytic and Verbal–Imagery Model (Riding & Cheema, 1991), verbal–visual, active–reflective and sequential–global (Lusweti, Kwena & Mondoh, 2018). This study adopted Reflective-Impulsive cognitive style.

Impulsivity means quick answers to tasks and a high number of errors while Reflection applies to subjects that respond more slowly to tasks and commit few errors (Carretero-Dios, De los Santos-Roig & Buela-Casal, 2009). This means learners that provide quick responses (answers) to a given task and make a number of errors are categorized as having impulsive cognitive style and those that respond more slowly to a given task and also make few errors are grouped as having reflective cognitive style.

This present study is based on ‘Split Brain Theory’ propounded by Sperry (1968). Sperry (1968) used a number of ingenious tasks. The tasks were carried out in laboratory conditions, using specialised equipment and were highly standardised. The tasks involved setting tasks separately to the two hemispheres of the brain. His results showed that when participants were presented with an image in one half of their visual field and then presented with the same image in the other half of the visual field, they responded as if they had never seen the image before. If the same image was presented in the

original visual field the participants were able to recognize the image as one they had seen before.

This present study allowed the participant to use visual observation to select among the objects presented (alternatives), the one that matches the standard. The participants were not expected to think or perceive in the same way due to different functions of their visual fields. This theory is relevant to this study in terms of presenting a stimulus for a response which will require a response and a number of errors committed by the respondents. Most of the researches on cognitive style focused on adult learners/individuals with specific statistical tools appropriate to the respondents. Lusweti, Kwena and Mondoh (2018) conducted a correlational study that examined the interactive effects of cognitive styles and their power to predict academic performance in Chemistry. Cognitive styles were measured on four dimensions: concrete–abstract, active–reflective, verbal–visual and sequential–global. The study explored how cognitive styles of students and teachers interacted to influence learner performance in Mock and in Kenya Certificate of Secondary Education (KCSE) Chemistry Examinations. The study revealed that three schools had very high levels of student–teacher cognitive styles congruence while the other three had low levels of congruence, two out of the four dimensions of cognitive styles, only the sequential–global dimension was a significant predictor of performance in KCSE Chemistry.

Idika (2017) determined the influence of two major cognitive styles (Field Dependent and Field independent) and gender on students’ achievement in and attitude to chemistry. The results showed that there was significant main difference between field dependent and field independent students’ achievement in chemistry; students with field independent level of cognitive style obtained higher mean score of chemistry achievement than those with field dependent level of cognitive style, there was no significant main difference between male and female students’ achievement in chemistry but the female students obtained higher mean achievement score than their male counterparts. Also, Tinajero, Lemos, Araújo, Ferraces and

Páramo (2012) conducted a study on the influence of cognitive style called field dependence-independence on academic achievement of Brazilian university students and the mediating effect of learning strategies on that influence. Results of a regression analysis showed that cognitive style and learning strategies significantly contributed to academic achievement. Students' cognitive styles have been found to mediate learning (Tinajero et al, 2012). This calls for its better understanding by the teacher in his/her choice and usage of teaching strategies. There had been previous (few) research which was carried out on young learners on cognitive styles.

Block and Block (1985) administered age-appropriate versions of the Matching Familiar Figures Test (MFFT) to 29 girls and 30 boys at ages 3, 4, 5, and 11 years. MFFT error scores were more consistent over time than MFFT latency scores for both girls and boys. In girls, the size of the inverse relation between MFFT error and MFFT latency increased from age 3 to 5 years and then leveled off. In boys, this relationship remained unchanged between ages 3 and 5 years but increased markedly after age 5. Children about this age are found in lower, middle and upper basic education levels making the form of cognitive style under the study to be relevant.

However, the review of previous studies show that reflective-impulsive cognitive style has not really gained popularity among educational researchers especially in Basic Science and Technology, among children at basic education level. Reviewed literature (Arizmendi, 1980; Block & Block, 1985) revealed Reflective-Impulsive cognitive style was carried out in learners between age 3 and age 12 using Matching Familiar Figure Test developed by Kagan. This age range characterizes Basic Education Levels (Lower, Middle and Upper) in Nigeria. Hence, using Junior Secondary School One (JSS 1) which is the first year of the middle school (6th grade) is a choice for this study. This study therefore investigated influence of cognitive style and gender on students' academic performance in Basic Science and

Technology in Mkpát Enin Local Education Committee.

## 2. Statement of the Problem

Researchers over the years are worried about persistent failure in both internal and external examinations. In their efforts to find solution to this disheartening problem, studies have been conducted in the areas of instructional strategies and methods, factors that affect students' learning such as attitude, interest, academic ability, and study habit among others. Basic Science and Technology remains a tap root for scientific and technological development of any nation. As important as the subject is to national development, learners are faced with learning difficulty. There are dearth of researches on cognitive styles and their influences on students' learning especially in Basic Science and Technology. The problem of this study therefore, was to examine the influence of cognitive style and gender on students' academic performance in Basic Science and Technology in Mkpát Enin Local Education Committee.

## 3. Purpose of the Study

The main purpose of this study was to find out the influence of cognitive style and gender on students' academic performance in Mkpát Enin Local Education Committee of Akwa Ibom State. Specifically, the study sought to:

Ascertain if any difference exists in the performance mean scores of Basic Science students with reflective cognitive style and those with impulsive cognitive style.

Find out if difference exists in the performance mean scores of male and female Basic Science students with reflective cognitive style and those with impulsive cognitive style.

## 4. Research Questions

The following research questions were formulated to guide the process of the study:

- Will there be any difference in the performance mean scores between Basic Science students with reflective

cognitive style and those with impulsive cognitive style?

- Will there be any difference in the performance mean scores of male and female Basic Science students with reflective cognitive style and those with impulsive cognitive style?

## 5. Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance to guide this study:

- There is no significant difference in the performance mean scores between Basic Science and Technology students with reflective cognitive and those with impulsive cognitive styles.
- There is no significant difference in the performance mean scores between male and female Basic Science and Technology students with reflective cognitive and impulsive cognitive styles.

## 6. Research Design

The study adopted descriptive survey research design

### 6.1 Area of the Study

This study was conducted in Mkpato Enin Local Government Area. Mkpato Enin Local Government Area of Akwa Ibom State is located in the South-South Region of Nigeria. The Local Government Area is bounded by Oruk Anam Local Government in the North, Eastern Obolo Local Government Area in the South, Onna Local Government Area in the East and Ikot Abasi Local Government Area in the West. Mkpato Enin Local Government has an Area of 322.352 square Kilometer. The total population of Mkpato Enin is 178,036 based on the 2006 census figure. The area is rich in oil and natural gas, timber and palm produce. The People of Mkpato Enin are mainly traders and farmers. Mkpato Enin Local Government Area has sixteen public secondary schools, Federal Government Girls Secondary school and a State University (Mkpato Enin Local Education Committee, Teachers-Subject Analysis, 2018).

### 6.2 Population of the Study

The population of this study comprised of 1679 (786 male and 893 female) junior secondary one students during 2017/2018 academic session in 16 secondary schools in Mkpato Enin Local Government Area of Akwa Ibom State Nigeria (Mkpato Enin Local Education Committee, Teachers-Subject Analysis, 2018).

### 6.3 Sample and Sampling Techniques

The simple random sampling method by balloting was used to select one school. The selected school has JSS 1 population of 100 students (Mkpato Enin Local Education Committee, Teachers-Subject Analysis, 2018). Convenience sample of 80 (80%) participants was then used. A convenience sampling consists of using the most readily or most convenient for the research using Taro Yamanes rule.

### 6.4 Instrumentation

Two instruments were used in this study. Cognitive Style Test (CST) which was used to categorize the respondents into cognitive style groups; reflective cognitive style and impulsive cognitive style. It is a 15-item cognitive test developed by the researcher and used in this study. The instrument is in line with Matching Familiar Figures Test developed in 1966 by the US psychologist, Jerome Kagan. This was a matching test to be administered individually with an average duration between 15 to 20 minutes. Every item included a model drawing (sample) and six versions of it with only one that matched exactly the sample. The subject's task was to identify the option that matched the model. It was an instrument designed to measure reflection-impulsivity by requiring the respondent to select repeatedly from several alternative figures the one that matches a standard. The number of errors and the time required to complete the test are recorded, and respondents with below-median errors and above-median response times were classified as reflective; respondents with above-median errors and below-median response times were grouped as impulsive. This test was used to group respondents into reflective and impulsive cognitive styles.

Basic Science and Technology Performance Test (BPT) was also developed by the researchers.

Section A contained the personal data of the respondent which are: Age and Gender of the Learner. Section B contains 20 multiple choice objective questions with options A-D, from which the respondents will select the correct option. ‘Correct answer’ attracted one mark while ‘wrong answer’ attracted zero (0) mark each.

**6.5 Validity of Instruments**

The two instruments were given out for experts’ review, for face and content validation. Their suggestions were accommodated to produce the final copies of the instruments. The instruments were also tested on 20 students from a school that was not part of the study. Reliability indices were determined using Crombach Alpha. Reliability indices of 0.82 and 0.89 were obtained for Cognitive Style Test and Basic Science and Technology Performance Test respectively.

**6.6 Methods of Data Collection**

The researcher visited the selected schools to administer the two instruments to the respondents. The researcher sat in a very

comfortable place to invite the respondent one after the other. The respondent was given instruction to respond to the first item on the cognitive test. The researcher recorded the first response time and the number of error (s) committed. Then the respondent was asked to move to the next item. The researcher did the same thing to record the first response time and the number of error committed. The respondents had the chance to commit up to five errors. If by the 5th attempt, the respondent still missed the correct answer; the researcher would tell the respondent the answer and move to the next item. For performance test, this test was administered on all the respondents tested with the cognitive style test to determine their performance in the selected concept (Living Things) in Basic Science and Technology curriculum.

**6.7 Method of Data Analysis**

The data collated were analysed using mean scores, Independent T-test, and Analysis of Variance (ANOVA) to answer the research questions and test the hypotheses at .05 level of significance.

**7. Results**

**Table 1: Distribution of Respondents by Gender**

Gender	Frequency	Percent
Male	44	55.0
Female	36	45.0
Total	80	100.0

Table 1 shows that 44 (55.0%) of the respondents were male, while the remaining 36 (45.0%), were female.

**Table 2: Distribution of Respondents by Cognitive Style**

Cognitive Style	Frequency	Percent
Reflective	39	48.8
Impulsive	41	51.3
Total	80	100.0

Table 2 shows that 39 (48.8%) of the respondents had reflective cognitive style while the remaining 41 (51.3%) had impulsive cognitive style.

**Table 3: Distribution of Respondents by Cognitive Style and Gender**

Gender	Cognitive Styles			
	Reflective	Percent	Impulsive	Percent
Male	18	46.15	26	63.42
Female	21	53.85	15	36.58
Total	39	100	41	100

Table 3 showed that more male students were found to be impulsive (63.42%) while more female students were reflective (53.85%).

**Answering Research Questions**

**Research Question 1:** Will there be any difference in the performance mean scores between Basic Science students with reflective cognitive style and those with impulsive cognitive style?

**Table 4: Basic Science and Technology Students' Academic Performance by Cognitive Style**

Cognitive Style	N	Mean	Std. Deviation	Std. Error Mean
Reflective	39	17.85	1.47859	.23676
Impulsive	41	11.07	2.43300	.37997

Table 4 showed that there was difference difference in performance mean scores of Basic Science and Technology students with reflective cognitive style and those with impulsive cognitive style. Students with reflective cognitive style had the highest performance mean score ( $\bar{x} = 17.85$ ) while students with impulsive cognitive style had the least adjusted performance mean score ( $\bar{x} = 11.07$ ).

**Research Question 2:** Will there be any difference in the performance mean scores of male and female Basic Science students with reflective cognitive style and those with impulsive cognitive style?

**Table 5: Difference in Basic Science and Technology Students' Performance by Gender and Cognitive Style**

Gender	Cognitive Style	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	Reflective	18.22	.440	17.346	19.098
	Impulsive	10.23	.366	9.502	10.960
Female	Reflective	17.52	.407	16.713	18.335
	Impulsive	12.53	.482	11.574	13.493

Table 5 revealed that there was difference in performance mean scores of male and female Basic Science and Technology students with reflective cognitive style and those with impulsive cognitive style. Male students with reflective cognitive style had the highest adjusted performance mean score ( $\bar{x} = 18.22$ ) while male counterparts with impulsive cognitive style had the least adjusted performance mean score ( $\bar{x} = 10.23$ ). Also, female students with reflective cognitive style had the highest adjusted performance mean score ( $\bar{x} = 17.52$ ) while female counterparts with impulsive cognitive style had the least adjusted performance mean score ( $\bar{x} = 12.53$ ).

**Testing the Hypotheses**

**H0<sub>1</sub>:** T There is no significant difference in the performance mean scores between Basic Science and Technology students with reflective cognitive and those with impulsive cognitive styles.

**Table 6: T-test Analysis of Basic Science and Technology Students' Performance by Cognitive Style**

Cognitive Style	N	Mean	Std.D	df	T	P-value	Remark
Reflective	39	17.85	1.479	78	14.953	.000	Sig.
Impulsive	41	11.07	2.433				

Table 6 revealed that there was a significant influence of cognitive style on students' academic performance in basic science and technology ( $t=14.953$ ;  $df=78$ ;  $p<.05$ ). Since the p-value is less than the 0.05 alpha level, there is a significant difference in the academic performance of Basic Science and Technology students with reflective and impulsive cognitive styles. Hence, the null hypothesis which stated that there is no significant influence of cognitive style on students' performance in Basic Science

and Technology was rejected. This means that Basic Science and Technology students' academic performance was influenced by their cognitive style.

**H0<sub>2</sub>:** There is no significant difference in the performance mean scores between male and female Basic Science and Technology students with reflective cognitive and impulsive cognitive styles.

**Table 7: Analysis of Variance (ANOVA) of Performance Scores of Basic Science and Technology Students by Gender and Cognitive Style**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	972.052	3	324.017	93.032	.000	.786	
Intercept	16434.900	1	16434.900	4718.784	.000	.984	
Gender	12.354	1	12.354	3.547	.063	.045	
Cognitive Style	809.065	1	809.065	232.298	.000	.753	
Gender x Cognitive Style	43.234	1	43.234	12.413	.001	.140	
Error	264.698	76	3.483				
Total	17768.000	80					
Corrected Total	1236.750	79					

Table 7 revealed that there was significant difference in the performance of male and female Basic Science and Technology Students with reflective cognitive style and those with impulsive cognitive style { $F_{(1, 79)} = 12.413$ ;  $P < 0.05$ , partial  $\eta^2 = .140$ }. The effect size is 1.4 percent. This means that there was a significant difference in the performance of male and female Basic Science students with reflective cognitive style and those with impulsive cognitive style. Thus, hypothesis two was rejected but alternative hypothesis was upheld which stated that there was significant difference in the performance of male and female Basic Science and Technology Students with reflective cognitive style and those with impulsive cognitive style .

### 8. Discussion of Findings

The results from the study showed that there was difference in performance mean scores of Basic Science and Technology students with reflective cognitive style and those with impulsive cognitive style. Students with reflective cognitive style had the highest performance mean score while students with impulsive cognitive style had the least adjusted performance mean score. This difference in their mean scores was statistically significant. This means that there was significant influence of cognitive style on students' academic performance in Basic Science and Technology. The result of this study corroborates Jantan's (2014) who examined the relationship between

students' cognitive styles with students' achievement in Mathematics among year 6 students from selected primary schools in Selangor, Malaysia. The finding showed that 112 students were of Field -Dependent cognitive styles (FD) compared to 38 students of Field Independent (FI) cognitive styles. The study also showed that cognitive styles influenced students' achievement in Mathematics.

This result is also in line with Okoronka and Wada (2014) that worked on effects of analogy instructional strategy, cognitive style and gender on senior secondary school students' achievement in some Physics concepts in Mubi metropolis, Nigeria. The results showed significant main effect of treatment on achievement and significant interaction effect on achievement when cognitive style was crossed with gender. The result from this present study also lends credence to Musya (2015) who investigated cognitive styles and academic achievement among secondary school learners in Kenya. The results showed that cognitive styles were significant on students' achievement in Chemistry.

The result from this present study showed that cognitive style when crossed with gender contributed to students' performance in Basic Science and Technology. This result gains the support of previous researchers. Jantan (2014) investigated the relationship between students' cognitive styles with students' achievement in Mathematics among year 6 students from selected primary schools in Selangor (Malaysia)

and found significant difference in cognitive styles between boys and girls in the school. Okoronka and Wada (2014) examined effects of analogy instructional strategy, cognitive style and gender on senior secondary school students' achievement in some Physics concepts in Mubi metropolis, Nigeria reported analytical female students and non-analytical male students were homogeneous, while the analytical male and non-analytical females were not in the same homogeneous group. Their results also showed that more male students were found to be field dependent while more female students were field independent and that field independent individuals scored higher than field dependent individuals. Conversely, Idika (2017) conducted a study on influence of cognitive style and gender on secondary school students' achievement in and attitude to Chemistry and found that male and female students did not differ much in their achievement in Chemistry.

## 9. Conclusion

The results from this study showed that cognitive styles influenced students' academic performance in Basic Science and Technology. The result also further showed that cognitive styles when crossed with gender contributed to students' academic performance in Basic Science and Technology. Also, male students were more impulsive while female students were more reflective in their cognitive styles. Observation from the results of this study showed that, cognitive style could contribute to students' academic performance in Basic Science and Technology. Also, there should be an understanding that a child with impulsive cognitive style is more likely to rush in taking some vital decisions which may lead him to achieve less his educational goals than a child with reflective cognitive style which is always very careful before taking his decision. Such a reflective cognitive style based child is likely to achieve more though it may take him more time.

## 10. Recommendations

Based on the results of this study, the following recommendations were made:

- Teachers should determine cognitive styles of the learners as an integral part of lesson preparation to enhance students' overall learning outcomes in basic science and technology.
- Teachers should always be mindful of individual learning differences to help learners of different cognitive styles to have learning gains with minimum or no difficulty.
- Teachers and parents should be mindful of gender differences of the children based on their cognitive styles so as to understand their responses in any given situation and to avoid unnecessary castigation of learners based on gender differences.

## References

- Arizmendi, T.G.(1980). Preliminary Norms for the Matching Familiar- Figures Test. M.A.Thesis. Department of Psychology. The University of Arizona.  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1020.4639&rep=rep1&type=pdf>.
- Block, J. & Block, J.H. (1985).Longitudinal Consistency of Matching Familiar Figures Test Performance from Early Childhood to Pre-adolescence. *Developmental Psychology*, 21(2):262-271.  
[https://www.researchgate.net/publication/232550681\\_Longitudinal\\_Consistency\\_of\\_Matching\\_Familiar\\_Figures\\_Test\\_Performance\\_From\\_Early\\_Childhood\\_to\\_Preadolescence](https://www.researchgate.net/publication/232550681_Longitudinal_Consistency_of_Matching_Familiar_Figures_Test_Performance_From_Early_Childhood_to_Preadolescence).
- Carretero-Dios, H., De los Santos-Roig, M., & Buela-Casal, G. (2009).Role of the Matching Familiar Figures Test-20 in the Analysis of Theoretical Validity of the Reflection-Impulsivity: A Study with Personality.<http://revistas.usb.edu.co/index.php/IJPR/article/viewFile/873/624>.
- Höffler, T.N., Koć-Januchta, M. & Leutner, D. (2016). More Evidence for Three Types of Cognitive Style: Validating the Object-Spatial Imagery and Verbal Questionnaire Using Eye Tracking when

- Learning with Texts and Pictures. <http://onlinelibrary.wiley.com/doi/10.1002/acp.3300/full>
- Idika, M.I. (2017). Influence of Cognitive Style and Gender on Secondary School Student's Achievement in and Attitude to Chemistry. *Advances in Social Sciences Research Journal*, 4(1), 129-139. <http://scholarpublishing.org/index.php/ASSRJ/article/download/2585/1492>
- Hudson, L. (1967). *Contrary Imaginations: A Psychological Study of the English Schoolboy*. Harmondsworth: Penguin.
- Jantan, R.B. (2014). Relationship between Students' Cognitive Styles with Students' Achievement in Mathematics among Year 6 Students from Selected Primary Schools In Selangor (Malaysia). *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 1 (10), 88-93. <https://www.arcjournals.org/pdfs/ijhsse/v1-i10/13.pdf>
- Kagan, J. (1965). Impulsive and Reflective Children: Significance of Conceptual Tempo, in J.D. Krumboltz (Ed.) *Learning and the Educational Process*, Chicago: Rand McNally
- Lusweti,S., Kwena,J. & Mondoh, H. (2018). Predictive Power of Cognitive Styles on Academic Performance of Students in Selected National Secondary Schools in Kenya, *Cogent Psychology*, 5. <https://www.cogentoa.com/article/10.1080/23311908.2018.1444908.pdf>
- Musya, M.N. (2015). Cognitive Styles and Academic Achievement among Secondary School Learners in Kenya. <http://erepository.uonbi.ac.ke/handle/11295/93617>
- Okoronka, U.A. & Wada, B.Z. (2014) . Effects of Analogy Instructional Strategy, Cognitive Style and Gender on Senior Secondary School Students Achievement in Some Physics Concepts in Mubi Metropolis, Nigeria. *American Journal of Educational Research*, 2014 2 (9), pp 788-792. <http://pubs.sciepub.com/education/2/9/13/>
- Ridding, R. & Cheema, I. (1991). Cognitive Styles: An Overview and Integration. *Educational Psychology*, 11(3 & 4), 193 – 216.
- Sperry, R.W. (1968) Hemisphere Deconnection and Unity in Consciousness. *American Psychologist*, 23, 723-33. <https://psychologyhelp.weebly.com/split-brain-theory-sperry--gazzaniga.html>
- Tinajero,C., Lemos, S. M., Araújo, M., Ferraces, M.J. & Páramo, M.F. (2012). Cognitive style and learning strategies as factors which affect academic achievement of brazilian university students. *Psicol. Reflex. Crit*, 25, (1), 105-113. <http://www.scielo.br/pdf/prc/v25n1/a13v25n1.pdf>
- Umanah, F. (2017).



## Scaffolding Assisted Instruction on Students' Academic Achievement in Basic Science and Technology

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**Abstract.** The poor performance of students in the core science subjects in the senior secondary school is often traced to the faulty foundation at junior secondary school basic science and technology. The major fault with this foundation among other things is the teaching strategy the teacher adopts while teaching basic science and technology. Therefore, this study examined the effect of scaffolding instructional strategy on students' achievement in basic science and technology. This study adopted the pretest-posttest quasi experimental research design, The population of the study were all Basic Eight students in public secondary schools in Odeda Local Government in Ogun state. A total of 100 pupils formed the sample of the study. The instrument used for data collection was basic science achievement test. The data collected were analyzed using Analysis of Covariance (ANCOVA) and estimated marginal means. The findings revealed that students taught with scaffolding instructional strategy had a significantly better achievement than the students in the control group. Based on the findings of this study, it was recommended that

teachers should teach basic science using scaffolding instructional strategy.

**Keywords:** Scaffolding, Students' academic achievement, Basic Science and technology.

### 1. Introduction

Science education contributes to the growth and development of individuals to become responsible members of the society and it is a domain which aims at identifying and describing the Physical and Biological World (Akçay&Yager, 2010). In the Nigerian education system, Basic Education, as the foundation requires a sound knowledge of science and technology. This is not only because science and technology has a tremendous impact on all social institutions but also because Science and Technology is very important to individual development. The nine-year Basic Education Programme stipulates Basic Science and Technology as a compulsory subject. Before the recent curriculum innovation in 2008, which has made Basic Science as theme in the Basic Science and Technology Curriculum, Basic Science has been a major science subject at

junior secondary level of education with the aim of making students develop interest in science; apply their basic knowledge and skills in science and technology to meet societal needs; take advantage of the numerous career opportunities offered by the study of science and technology

and become prepared for further studies in science and technology.

It is important to note that in spite of the importance of Basic Science and Technology, achievement of students remains inconsistent. This is shown below:

**Table 1. Students’ Performance Analysis of 2011-2015 BECE**

	YEAR	PERCENTAGE DISTINCTION	PERCENTAGE CREDIT	PERCENTAGE PASS	PERCENTAGE FAIL
1	2011	4458 6.16%	36353 50.23%	29116 40.23%	2453 3.39%
2	2012	4227 5.29%	38121 47.67%	34375 42.99%	3238 4.05%
3	2013	6889 7.16%	69750 78.21%	11041 12.38%	2003 2.25%
4	2014	5122 5.44%	51833 55.03%	34558 36.69%	2675 2.84%
5	2015	9119 9.42%	42156 43.55%	40628 41.97%	4894 5.06%

*Source: Ogun State Ministry of Education*

In addition, Alebiosu (2017) jingled the punching hazard of poor achievement in Basic Science and Technology.

Many scholars have attributed the poor performance of students in most science subjects at the senior secondary school level to the poor background of students in Basic Science (Adesoji,1999) Although, there are other factors such as low level of readability of the textbooks (Ivowi, 1983) unavailability of instructional materials (Opara &Etukudo, 2014), large class size, to mention a few. However, the most emphasized is the approach to teaching. It is important to scrutinize the claim, that there is low science background at the basic level of education. Therefore, the next thing to look at is the teaching method among other things.

It has been widely established that many teachers teach Basic Science using only the lecture method which is not a bad method on its own but which remains grossly inadequate for students at this level. This is because students are not meant to depend solely on oral instructions in science they should rather learn it

by doing it. Silvia Bello and Rail Valdes (2004) in their work titled “Is it possible to learn chemical Equilibrium in High school” concluded and recommended demonstrations and game play while Alebiosu, Afuwape & Odukoya, (2012) advocated storyline teaching strategy as a facilitator of pupils’ understanding of Basic Science and Technology concepts and principles more than conventional lecture/teaching method.

In education, scaffolding refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process. The term itself offers the relevant descriptive metaphor: teachers provide successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition that they may not be able to achieve without assistance. Like physical scaffolding, the supportive strategies are incrementally removed when they are no longer needed, and the teacher gradually shifts more responsibility over the learning process to the student. Scaffolding, as described by (Wood, Bruner, & Ross 2006), “consists essentially of

the adult ‘controlling’ those elements of the task that are initially beyond the learner’s capacity, thus permitting [the learner] to concentrate upon and complete only those elements that are within his range of competence.” Scaffolding in this sense is informal, such as mother-infant interactions. Today, the definition of scaffolding has expanded to include a broad range of formal structures, including conversational devices (e.g., guiding questions), curriculum design (e.g., direct instructions for students), and features of computer software (Pea, 2004).

Gender is another factor, which has been investigated as determinant of students’ achievement and interest in basic science. Studies of Afuwape and Oludipe (2008) revealed gender gap in favor of the males among the pre-service integrated science teachers. Similarly, Becker (2006) examined data from 30 studies on the magnitude of gender differences in science achievement using modern method of meta-analysis. It is studies showed that male have significant advantage in Biology and Basic Science and Technology. On the other hand, Oludipe (2012) found that there is no significant effect of gender on students’ achievement in basic science. It is therefore, important to determine the effect of gender on students’ achievement given the inconsistency in research findings in this area; In consequence, this study will determine the moderating effect of gender.

## 2. Statement of the Problem

The importance of Basic Science at the secondary school level cannot be overemphasized. The poor performance of students in the senior secondary school certificate examination is traced profoundly to Basic Science. Students need to perform very well in Basic Science and Technology at junior secondary school level to enable them record excellent performance at senior secondary level

and also to improve their interest in learning sciences.

Several studies have concluded that if the conventional teaching method used by teachers in teaching Basic science and Technology is assisted with other teaching strategies like Scaffolding Instructional Strategy, there could be improvement in the learning outcomes of students in the subject. Therefore, the need to embark on this research became imperative.

## 3. Hypotheses

H<sub>0</sub>1: There is no significant main effect of treatment on pupils’ achievement in Basic Science and Technology.

H<sub>0</sub>2: There is no significant main effect of gender on pupils’ achievement in Basic Science and Technology.

H<sub>0</sub>3: There is no significant interaction effect of treatment and gender on pupils’ achievement in Basic Science and Technology.

## 4. Methodology

### 4.1 Research Design

The study used the pre-test post-test quasi experimental research design. The design is 2x2x3 schematically represented as:

E:	$0_1$	$X_1$	$0_2$
C:	$0_3$	$X_2$	$0_4$

Where:

$0_1, 0_3$ , represents pre-test observations for both experimental and control groups.

$0_2, 0_4$ , represents post-test observations for both experimental and control groups.

$X_1$ = represents the only treatment; Scaffolding Instructional Strategy

$X_2$  = placebo treatment for control group

**4.2 Target Population**

The population for this study consist all public junior secondary schools in Ogun State.

**4.3 Sample and Sampling Techniques**

The research sample for the study consists of 100 students from two (2) randomly selected schools in Odeda Local Government Area of Ogun State. The two schools were drawn through random sampling technique.

**4.4 Instrument**

**Table 2: Table of specification for Basic science achievement Test**

Topics	Knowledge %	Comprehension%	Higher Order% Objectives	Total %
Work	8	11	5	24
Energy	8	10	4	22
Power	8	11	5	24
Total	24	32	14	70

**4.6 Validity and Reliability of the Basic Science Achievement Test (BSAT)**

The Basic Science Achievement Test of 70 multiple choice objectives was developed and presented to two doctoral students in Science Education with the table of specification for criticism and advice. Their advice was used to modify the items for adequacy, simplicity of language and relevance to the content. The structured test items were presented to two experienced Basic Science teachers for further scrutiny. Their suggestions were incorporated into the objective item questions.

The reliability was obtained by administering it to 20 students who were not part of the study and were retested after two weeks to determine the reliability of the instrument. The reliability coefficient was 0.80 using Split Half reliability method.

**4.7 Method of Data collection**

The researcher visited the schools used for the study and sought the permission of the school authority to be allowed to use their schools, teachers and students for the study.

The first week was used for training the participating Basic Science teachers in the selected schools and administration of pre-test by the teachers and researcher.

The instrument used in the study is Basic Science Achievement Test (BSAT) and

Instructional Guide on Scaffolding Instructional Strategy (IGSIS)

**4.5 Basic Science Achievement Test**

Basic Science Achievement Test contains seventy items constructed by the researcher on work, energy and power. The table of specification is drawn to guide the construction of items.

The 2nd to 5th weeks, were used for the application of treatment to experimental group (SIS) and conventional Method (CM) in the control group. Week six was used for the administration of post-test by the teachers and researcher.

**4.8 Method of Data Analysis**

The data collected was analyzed using Analysis of Covariance (ANCOVA). This was adopted to test the hypotheses using pre-test scores as covariates. Estimated Marginal Means (EMM) analysis was used to determine the magnitude of performance of the various groups. Scheffe’s post-hoc test was also used when significant differences were observed to show the pairs of groups that were significantly different.

**5. Results**

**H<sub>01</sub>: There is no significant main effect of Treatment on Students’ achievement in Basic Science**

**Table 3 Analysis of Covariance of Students’ Achievement in Basic Science by Treatment by Gender Using Pretest as Covariates**

Dependent Variable: postach

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2453.906 <sup>a</sup>	7	350.558	68.011	.000	.838
Intercept	111.603	1	111.603	21.652	.000	.191
Preach	265.640	1	265.640	51.537	.000	.359
<b>Treatment</b>	<b>307.853</b>	<b>1</b>	<b>307.853</b>	<b>59.726</b>	<b>.000</b>	<b>.394</b>
Gender	2.426	1	2.426	.471	.494	.005
Treatment * Gender	1.568	1	1.568	.304	.583	.003
Error	474.204	92	5.154			
Total	14657.000	100				
Corrected Total	2928.110	99				

a. R Squared = .838 (Adjusted R Squared = .826)

Table 3 indicates that there is a significant main effect of treatment on students achievement in basic science ( $F_{(1,92)}=59.726;p<0.05; \eta^2=0.394$ ) hence the null hypothesis  $H_{01}$  is rejected. This implies that the treatment had a significant effect on students’ achievement in Basic Science with an effect size of 39.4%. Estimated marginal mean was computed so as to ascertain which of the treatments is responsible for the observed main effect.

**1. Treatment**

**Table 4**

Dependent Variable: postach

Treatment	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
scaffolding	14.536 <sup>a</sup>	.593	13.357	15.714
Control	6.105 <sup>a,b</sup>	.815	4.485	7.724

a. Covariates appearing in the model are evaluated at the following values: preach = 6.4900.

b. Based on modified population marginal mean.

The table 4 reveals that students’ exposed to scaffolding had a higher mean (14.536) score compared to those in the control group (6.105). This implies that students taught with scaffolding instructional strategy were significantly better in terms of achievement in Basic Science than their counters parts.

**Ho2: There is no significant main effect of gender on students’ achievement in Basic Science**

Table 3 shows that gender has no significant main effect on pupils’ achievement ( $F_{(1,92)} = 0.471; p > 0.05$ ); hence the null hypothesis Ho3 is not rejected. This implies that gender has no significant main effect on the students’ achievement in Basic Science.

**Ho3: There is no significant interaction effect of treatment and gender on students’ achievement in Basic Science**

Table 3 shows that there is no significant interaction effect of treatment and gender on students’ achievement in Basic Science ( $F_{(1,92)} = 0.304; p > 0.05$ ); hence the null hypothesis Ho7 is not rejected. This implies that the gender of the students does not give them any advantage or disadvantage when it comes to benefiting from the effect of the treatment in terms of the achievement of students in Basic Science.

**Treatment \* Gender**

**Table 5**

Dependent Variable: postint

Treatment	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Scaffolding	Male	58.427 <sup>a</sup>	2.840	52.786	64.067
	female	63.812 <sup>a</sup>	3.341	57.177	70.447
Control	Male	64.556 <sup>a</sup>	4.826	54.971	74.140
	female	57.406 <sup>a,b</sup>	1.420	54.587	60.225

The table 5 reveals that female students in the experimental group (Scaffolding Instructional Strategy) had a higher mean (63.812<sup>a</sup>) Basic Science post- test interest score than their male counterparts in the same group.

## 6. Summary of Findings

The treatment has a significant main effect on students' achievement in Basic Science

The gender of students has no significant main effect on the achievement in Basic Science

The interaction effect of treatment and gender was insignificant on the achievement of students in Basic Science.

## 7. Conclusion

Based on the findings of this study, it could be concluded that Scaffolding Instructional Strategy improves the students' achievement in Basic Science significantly.

## 8. Recommendation

It is recommended that science teachers should be trained in the use of scaffolding instructional strategy because it is cheap and effective in improving the students' achievement in Basic Science and Technology.

The Nigerian Education Research and Development Council (NERDC) should make recommendation for scaffolding instructional strategy in the production and implementation of Basic Science and Technology curriculum.

## References

Akçay, H. & Yager, R.E (2010). The impact of Science/Technology/Society/Teaching Approach on Student Learning in five domains (JSET), 19:602-611. DoI: 10.1007/S 10956010.

Adesoji, F. A. (1999). Knowledge of integrated science as pre-requisite capability for First year senior secondary school sciences and implication for teacher education in Abimbade, A. (eds). Teaching and teacher preparations in the Twenty first century Department of Teacher Education pp 77-81.

Afuwape, M. O. and Oludipe, D. I. (2008). Gender Difference in Integrated Science Achievement among Pre-Service Teachers in Nigeria. *Educational Research and Review*. 3(7), 242 – 245.

Alebiosu, K., Afuwape, M & Odukoya, A (2012). Spacing up Basic Science Instruction with storyline strategy: What is students Achievement: African Research Review 6(3) 26. 252 – 267.

Becker, B. (2006). Wealth and Executive Compensation. First published: 20 January 2006. retrieved from <https://doi.org/10.1111/j.1540-6261.2006.00839.x>

Ivowi, U.M.O (1983). Misconceptions in physics amongst Nigeria secondary school students. Proceedings of the International Seminar on Misconceptions in Science and Mathematics, Cornell University, U.S.A pp356-361, June 20-23.

Oludipe, D. I. (2012). Gender Difference in Nigerian Junior Secondary Students' Academic Achievement in Basic Science *Journal of Educational and Social Research* 2(1) 93-98.

Opara, P.N. and Etukudo, D.U. (2014) Factors Affecting Teaching and learning of Basic Science and Technology in Primary schools. *Journal of Educational*

*Policy and entrepreneurial Research (JEPER)*, 1(1), 46-58.

- Pea, E.M (2004) Effect of concept mapping on students' performance in the teaching of controlling the environment. Science Teachers Association of Nigeria, Integrated Science Education Series (5) 10-14.
- Silvia Bello and Raul Valdes (2004). Is it Possible to learn Chemical Equilibrium in High School? 7<sup>th</sup> European Conference on Research in Chemical Education 3<sup>rd</sup> European Conference on Chemical Education LjubLjana, Slovenia 46-48.
- Wood, Bruner, & Ross (2006) Scaffolding complex learning: The mechanisms of structuring and problematizing student work. *Journal of the Learning Sciences*, 13(3), 273-304.

## **Efficacy of Narrative Exposure Therapy and Gender Differences on Psychological Trauma Symptoms among Internally Displaced Persons in Jos, Plateau State, Nigeria**

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**Abstract.** There has been increasing need for empirical literatures on psychological trauma symptoms and corresponding therapies, considering pockets of traumatic events in Nigeria. The present study assesses efficacy of narrative exposure therapy and gender differences on psychological trauma symptoms among internally displaced persons (IDPs). A repeated measures design, which helps to examine pre-test and post-test outcomes, was adopted. Study participants were 24 IDPs (8 males and 16 females) who were randomly selected and assigned into two groups. All the participants were assessed with Trauma Symptoms Checklist-40 (TSCL-40), as the treatment group had 10 sessions of therapy while control group was without intervention. The study hypothesis was statistically tested, using one-way analysis of variance. Findings revealed that there is no significant gender differences in the efficacy of narrative exposure therapy on the IDPs' psychological trauma [ $F(1, 10) = 2.077, p = 0.180 (p > .05)$ ]. The result also shows no remarkable reduction in symptoms among both treatment and control participants. This means, in addition to lack of significant gender differences, the narrative exposure therapy had no significant effects on the participants'

psychological trauma. There is need for using stratified random sampling in further studies, not just a simple random sampling, to ensure gender balance and the sample size adequacy. A more representative sample of that nature would, probably, further influence the study outcomes.

**Keywords:** Gender differences; Internally displaced persons; Narrative exposure therapy; Psychological trauma symptoms; Repeated measures design

### **1. Introduction**

The term Internally Displaced Persons (IDPs) and issues associated with it were new to Nigerians before the advent of civilian rule in May 1999. This is because reports have always focused on place or community of attacks and the on the spot number of deaths, injured or physically ill, but not the internally displaced persons suffering from the aftermath of such planned or unplanned violence. Apart from the ethno-religious crisis and Boko Haram insurgency, a recent violent crisis is the incessant conflict between the farmers and Fulani herdsmen in Nigeria. Abimaje, Augustine, Nadi, Ayado and Ismail (2014)

observe that the security problems in Nigeria is creating more internally displaced persons every day as more people continue to either feel endangered or dislodged from their homes or places of abode.

The effect of conflict is displacement of persons making them residing in temporary camps. Thus, women may be extremely vulnerable to mental health and physical challenges, while a number of studies have also reported that women and girls were victims of physical and sexual violence in IDP camps (Mooney, 2005). Women are at higher risk of maternal morbidity and mortality as well as unwanted pregnancies and unsafe abortions, (Amowitz, 2002; Ellsberg, 2008). The negative impacts of sexual violence are significant and long term. These may include unwanted pregnancies, sexually transmitted infections including HIV, physical injuries and mental health effects (Austin, 2008; McLean, 2011). While the men are left with the option of scouting to provide for the family with the elderly having to wait on what fate have to offer. Apart from physical mortality, mass violence is associated with psychological morbidity (Norris, Friedman & Watson, 2002), because it shatters the fundamental beliefs of vulnerability, mortality and human nature, thereby leaving survivors of the trauma with a wide range of psychological trauma symptoms. Psychological trauma remains a major mental health problem that may occur in a period of increasing violent conflicts, with persistent symptoms, particularly among IDPs. Due to the effects of psychological trauma on the well-being of the affected persons, their productivity reduces and the socio-economic development of the nation is at a disadvantage.

Although efforts by the government at all levels, non-governmental organization (NGOs) and other public spirited individuals have been overstretched and the internally displaced persons are living in sub-human conditions, the absence of food, latrines and water supply has its implications on secondary challenges especially large scale catastrophic mental health consequences. Although in the north eastern part of the country the federal government

recently flagged off the distribution of food, clothes and provision of other basic amenities that the internally displaced person need in settlement, nothing was said on the psychological wellbeing of the internally displaced person. The survivors of the horrific attacks are already exposed to scenes of unmitigated violence, widespread destruction of their property and unjustified killing of their loved ones. For example, an investigation carried out by Dura (2014) reveals that 32 IDPs died in a camp at LGEA Primary School, North Bank, Markurdi. By implication, the survivors of the attack were continuously experiencing post-displacement terrifying life events which can be considered traumatic. Compared to refugees, IDPs are one population that has not been well represented in psycho traumatology literature and mental health policy. North (2001) opines that IDPs in the world remain an undeserved and unrecognized population, with clearly unmet mental health needs.

There are few published studies on psychological trauma and its symptoms as a public mental health issue among IDPs population in Nigeria; and the NEEDS assessment in the aftermath of such trauma does not incorporate psychological morbidity among survivors of the violent crisis. A comprehensive human impact management strategy for the survivors cannot be achieved without giving attention to the important mental health problem of psychological trauma. Therefore there should be an important consideration in research on the extent to which individual differences and moderating factors impact the development of psychological trauma. For example, gender, might be the reason for susceptibility and defending factors in psychological trauma, therefore in fashioning out the psychosocial response strategies for the IDP population in Nigeria, psychological factors like cognitions and emotions of the affected persons deserve to be considered in understanding the individual differences in psychological trauma symptoms.

It is critical to discover possible moderators for intervention purposes (Busuito, Huth-Bocks & Puro, 2014; Chukwuorji, 2014). Against these backdrops and for the purpose of addressing

the lack of knowledge of the public about psychological trauma, low level of research information on psychological trauma, dearth of empirical knowledge on contributions in the management and treatment of psychological trauma among IDPs, lack of policy data for psychological trauma and the psychological health of the IDPs in Nigeria.

## 2. Objectives of the Study

The objective of the study was to examine gender differences in the outcome of Narrative Exposure Therapy on psychological trauma symptoms among Internally Displaced Persons at a camp in Jos, Plateau State Nigeria.

## 3. Hypothesis

There will be a significant gender differences in the efficacy of Narrative Exposure Therapy on Psychological trauma symptoms among Internally Displaced Persons.

## 4. Methodology

### 4.1 Research Design

The study was a repeated measure experimental design. It comprised of a two group (control and intervention) experimental study which examined pre-test/post-test outcomes. The design ensures that the study has a strong internal validity. This allowed for participants to be randomly assigned to two groups. Both groups were pre-tested and post-tested on their trauma symptoms. Thereafter, the intervention group was administered treatment, while the other was not.

### 4.2 Participants

The study sample comprised of 49 Internally Displaced Persons (IDPs). Their mean age was 33.04 years with a standard deviation of 11.49 years. The gender distribution showed that 18 (36.7%) of the participants were males, and 31 (63.3%) were females. A total of 23 (47.9%) had no formal education, while 15 (31.3%) had only primary education, 7 (14.6%) had only secondary education and 3 (6.3%) had tertiary education. There was a total of 14 (29.2%)

single persons, 30 (62.5%) persons are married, and 4 (8.3%) were either separated or divorced. 18 (36.7%) of them were non-professionals in their line of work, 2 (4.1%) were professionals; majority of them 29 (59.2%) were unemployed. With regards to monthly income, the 23 (65.7%) had no income, 7 (20%) earned less than N20,000 (twenty thousand naira) monthly, 4 (11.4%) earned between N20, 000 – N50, 000 monthly, 1 participant earned more than N50, 000 monthly.

### 4.3 Instrument for Data Collection

A questionnaire comprising two different instruments as well as a section tapping information on social demographic characteristics of participants were used in the study. An instrument was adopted and validated by the researcher. The instrument is described as follows:

### 4.4 Trauma Symptom Checklist – 40 (TSCL-40)

The tool was developed by Briere and Runtz (1989) and is a 40-item self-report measure of symptomatic distress in adults arising from childhood to adult traumatic experiences. It is a measure of current psycho-traumatic experience in individuals. Respondents were asked to rate how often they have experienced each symptom in the last two months using a 4-point frequency rating scale ranging from 0 ("never") to 3 ("often"). The TSC-40 has six subscales: Anxiety, Depression, Dissociation, Sexual Abuse Trauma Index, Sexual Problems, and Sleep Disturbances and yields a range of scores 0-120 with higher scores representing severity of trauma. Regarding its psychometric properties, the Sexual Problems subscale displays a high level of reliability coefficient of ( $\alpha = .73$ ); (b) the Sleep Disturbance subscale coefficient of ( $\alpha = .77$ ); (c) the reliability for the SATI is  $\alpha$  coefficient of = .62; and (d) with a total reliability score of  $\alpha = .90$ . The TSCL- 40 was used in the study because it provides a general measure of current traumatic symptoms among disaster and combat survivors. Additionally, its psychometric properties have been impressive, with sub scales alphas ranging

from .66 to .77 and total scores alpha averaging .89 and .91 (Brian, Janet, Allison & Stacy, 2007). The clinical elevations were such that the score for each subscale is given as the sum of the relevant items described:

Dissociation: 7, 14, 16, 25, 31, 38

Anxiety: 1, 4, 10, 16, 21, 27, 32, 34, 3, 9

Depression: 2, 3, 9, 15, 19, 20, 26, 33, 37

Sexual Abuse Trauma Index 5, 7, 13, 21, 25, 29, 31

Sleep Disturbance 2, 8, 13, 19, 22, 28

Sexual Problems 5, 9, 11, 17, 23, 29, 35, 40

#### 4.5 Procedure

Following the validation of the instrument, the study was carried out at Stefanos Internally Displaced Persons (IDPs) camp in Jos South Local Government Area of Plateau State. Official permission was obtained from the Management of the Camp. Thereafter, the researcher visited the camp for familiarization and research sensitization. During the visit, IDPs were briefed about the study; its objectives, procedures and anticipated benefits. They were made to anticipate the selection process, which would give everyone an equal opportunity to participate.

Subsequently a research assistant was recruited to conduct the selection and random assignment process of participants to the experimental and control groups. The participants who qualified for selections were those who had met the criteria of DSM 5 for PTSD and had complained of recurrent flash backs of traumatic experience at the point were used for the study. Meeting the eligibility criteria involved assessing participants for PTSD using DSM 5 and TSCL-40 for Psycho traumatic symptoms. A total of 84 participants were assessed using DSM 5 criteria for PTSD and only 49 participants met the criteria. The 49 participants were then administered the Trauma Symptoms Check List 40 for 29 participants meeting the eligibility status while 5 participants withdrew from the study, leaving 24 participants to complete participation in the study.

They were allocated into the experimental and control groups with 12 participants in each

group randomly assigned by the lottery method. In this case, 'Yes' or 'No' were tagged in twelve (12) folded pieces of papers in a hat for IDPs to pick, one at a time until the last IDP picked. Participants were eventually selected for the intervention (NET) and control group. As soon as this was concluded, four research assistants (clinical psychologists) with clinical practice were recruited. They were trained for three days on the NET therapy protocol.

These eventually provided the stipulated interventions for the participants who were assigned to the intervention group (NET); there were a total of ten therapy sessions lasting between 60 and 90 minutes per session with the therapists. Interventions were delivered according to the structured published manual on Narrative Exposure Therapy of (Schauer, Neuner and Elbert, 2011). The therapists commenced by administering the TSCL-40 to the participants in the intervention and control groups to determine the baseline psycho traumatic symptoms. After the 10 sessions had been concluded, a post test assessment using TSCL-40 was done for both groups.

Finally, participants in the control group were debriefed after the post test. As an ethical obligation the researcher paid attention to their needs and concerns which were addressed within the context of the psycho social support programme of Stefanos Foundation for the IDPs.

#### 4.6 Method of Data Analysis

The prevalence of psycho trauma symptoms were reported by descriptive statistics and their associations with socio-demography factors were tested by Chi-square analysis. For inferential statistics, the one-way analysis of variance (ANOVA) was used to test for mean differences of the efficacy of NET using TSCL-40 scores. ANOVA was preferred because it guarantees the comparison of group means (between and within). A probability value of  $p \leq 0.05$  was used as the significant value for analysis in the study.

#### 4.7 Ethical Considerations

The ethical consideration for the study includes; obtaining institutional permission to conduct the study following an informed consent which was obtained from the participants. The researcher guaranteed informed confidentiality of pre and post-test status of participants in the study. Participants who were positive on PTSD and the scales of TSCL-40 were administered brief

NET. The control group participants were also protected from physical and psychological harm by ensuring psychosocial support. All participants were not compelled to be part of the study; their right to withdraw at any time without adverse consequences was also assured and guaranteed.

**5. Results**

**Mean scores and prevalence rate of psychological trauma symptoms of participants at baseline (N 49)**

**Table 1: TSCL - 40 Symptom pattern among participants (N49)**

	F	%	Mean	Standard Deviation
D i s s o c i a t i o n	2	7 5 5 . 1	1 5 . 5 2	2 . 5 8
A n x i e t y	2	7 5 5 . 1	1 6 . 8 5	3 . 9 4
D e p r e s s i o n	2	8 5 7 . 1	1 8 . 1 1	3 . 2 0
Sexual Abuse Trauma Index (SATI)	2	9 5 9 . 2	1 3 . 7 2	3 . 0 6
S l e e p D i s t u r b a n c e	2	7 5 5 . 1	1 3 . 6 3	2 . 3 7
S e x u a l P r o b l e m s	2	6 5 3 . 1	1 0 . 7 7	3 . 7 1

Table 1, presented the mean score of psychological trauma symptoms and it revealed the following mean scores and prevalence among participants: Dissociation (Mean=15.52) with 55.1% prevalence, anxiety (Mean=16.85) with 55.1% prevalence, depression (Mean=18.11) with 57.1% prevalence, SATI (Mean=13.72) with 59.2% prevalence, while sleep disturbance (Mean=13.63) with prevalence of 55.1%, and sexual problems (Mean=10.77) with prevalence of 53.1%.

**Table 2: Pre-test distribution of psychological trauma symptoms between study groups of IDPs**

	C o n t r o l N = 12			I n t e r v e n t i o n ( N E T ) N = 12			
	F	%	Mean	S D	%	Mean	S D
Dissociation	7	29.2	13.08	3.45	7	29.2	3.71
A n x i e t y	5	2 0 . 8	1 5 . 5 8	4 . 1 2	8	3 3 . 3	5 . 3 1
D e p r e s s i o n	6	2 5 . 0	1 8 . 0 8	3 . 4 5	8	3 3 . 3	3 . 0 9
S A T I	7	2 9 . 2	1 3 . 7 5	3 . 8 4	8	3 3 . 3	3 . 3 0
Sleep Disturbance	8	3 3 . 3	1 4 . 1 7	2 . 0 4	6	2 5 . 0	2 . 4 8
Sexual Problems	9	3 7 . 5	9 . 9 2	5 . 5 3	7	2 9 . 2	5 . 5 3

Table 2 above presents the outcome of further screening of 49 initially identified index cases for PTSD who attained the cut off score for TSCL-40. 24 persons met the criteria and were therefore adopted as participants for the main study. In so doing they were differentiated into intervention and control groups. Table 2 shows the pre-test results for the twenty-four (24) study participants revealed the following psychological trauma symptoms; the intervention group (Narrative Exposure Therapy – NET) had a slightly higher mean score on dissociation (13.17, SD=3.71), anxiety (17.67,SD=5.31), depression (18.58, SD=3.09), and sexual abuse trauma (14.17, SD=3.30); while the control group had higher mean scores on sleep disturbance (14.17, SD=2.04), and sexual problems (9.92, SD=5.53). Overall, the intervention group had a slightly higher mean score on psychological trauma symptoms (75.50, SD=14.15).

Table 3 below presents the outcome of result for 24 participants differentiated into intervention and control groups at the end of study.

**Table 3: Post-test distribution of psychological trauma symptoms between study groups**

	C o n t r o l N = 12				I n t e r v e n t i o n ( N E T ) N = 12				
	F	%	M e a n	S D	f	%	M e a n	S	D
Dissociation	11	45.8	13.50	4.76	4	16.7	6.33	5.11	
A n x i e t y	9	37.5	18.42	6.53	3	12.5	7.58	6.56	
D e p r e s s i o n	9	37.5	18.42	6.87	2	8.3	7.92	7.72	
S A T I	11	45.8	14.25	4.00	3	12.5	6.33	5.47	
Sleep Disturbance	12	50.0	14.92	2.99	3	12.5	6.58	4.74	
Sexual Problems	10	41.7	9.08	5.96	2	8.3	3.33	5.74	

**Post-test scores on psychological trauma sub scales of participants**

Table 3 above and shows the post-test mean scores of psychological trauma subscales of participants with PTSD revealed that intervention group had lower scores on dissociation (6.33, SD=5.11), anxiety (7.58, SD=6.56), depression (7.92, SD=7.72), sexual abuse trauma (6.33, SD=5.47), sleep disturbance (6.58, SD = 4.74), and sexual problems (3.33, SD=5.74). Also, the intervention group had lower psychological trauma mean scores than the control group (31.35, SD=28.50). Figure 2 below, shows the mean psychological trauma symptom variation between study groups. On the whole; the post test score of the control group showed remarkably high elevations of all the symptoms of TSCL-40. While the intervention group had a significant reduction of symptoms indicating that NET was an efficacious intervention on psychological trauma.

**Hypothesis**

The hypothesis stated that there will be a significant gender differences in the efficacy of Narrative Exposure Therapy (NET) on psychological trauma among IDPs with PTSD.

**Table 4: Mean scores of psychological trauma symptoms across gender for participants with posttraumatic stress disorder at post-test across gender (N = 12)**

	G e n e r a l				d e m a n d e r							
	M	a	f	%	M e a n	S	D	f	%	M e a n	S	D
Dissociation	2	16.7	9.50	5.45	2	16.7	4.75	4.43				
A n x i e t y	2	16.7	12.00	8.76	1	8.3	5.38	4.24				
D e p r e s s i o n	1	8.3	12.00	10.10	1	8.3	5.88	5.96				
S A T I	2	16.7	10.50	5.97	1	8.3	4.25	4.10				
Sleep Disturbance	1	8.3	7.50	6.14	2	16.7	6.13	4.29				
Sexual Problems	1	8.3	6.50	8.58	2	16.7	1.75	3.41				

Table 4 shows the mean scores of psychological trauma symptoms across gender for participants with PTSD. The results revealed that females exposed to NET had lower scores than males exposed to NET on dissociation (Mean=4.75, SD=4.43), anxiety (Mean=5.38, SD= 4.24), depression (Mean=5.88, SD=5.96), sexual abuse trauma (Mean=4.25, SD=4.10), sleep disturbance (Mean=6.13, SD=4.29), and sexual problems (Mean=1.75, SD=3.41). Furthermore, the females had lower mean score on psychological trauma than male participants (Mean= 23.25, SD=20.49).

**Gender differences in the Efficacy of Narrative Exposure Therapy (NET) on psychological trauma symptoms of participants with posttraumatic stress disorder**

One way ANOVA results showed that male and female participants exposed to Narrative Exposure Therapy (NET) had similar levels of symptoms experience on dissociation (F = 2.656, p = 0.134), anxiety (F = 3.289, p = 0.100), depression (F = 1.803, p = 0.209), sexual abuse trauma (F = 4.640, p = 0.057),

sleep disturbance ( $F = 0.208, p = 0.658$ ), and sexual problems ( $F = 1.989, p = 0.189$ ). Table 5 below shows the details of the results.

**Table 5: One way ANOVA table for psychological trauma symptoms across gender (Intervention Group)**

	Sum of Squares	df	Mean Square	F	Sig.
<b>D i s s o c i a t i o n</b>					
Between Groups	60.167	1	60.167	2.656	.134
Within Groups	226.500	10	22.650		
Total	286.667	11			
<b>A n x i e t y</b>					
Between Groups	117.042	1	117.042	3.289	.100
Within Groups	355.875	10	35.588		
Total	472.917	11			
<b>D e p r e s s i o n</b>					
Between Groups	100.042	1	100.042	1.803	.209
Within Groups	554.875	10	55.488		
Total	654.917	11			
<b>S e x u a l A b u s e T r a u m a I n d e x ( S A T I )</b>					
Between Groups	104.167	1	104.167	4.640	.057
Within Groups	224.500	10	22.450		
Total	328.667	11			
<b>S l e e p D i s t u r b a n c e</b>					
Between Groups	5.042	1	5.042	.208	.658
Within Groups	241.875	10	24.188		
Total	246.917	11			
<b>S e x u a l P r o b l e m s</b>					
Between Groups	60.167	1	60.167	1.989	.189
Within Groups	302.500	10	30.250		
Total	362.667	11			

## 6. Discussion of Findings

The purpose of this research was to determine the efficacy of Narrative Exposure Therapy (NET) in resolving psychological trauma symptoms of Internally Displaced Persons (IDPs). The hypothesis that there will be a significant gender differences in the efficacy of Narrative Exposure Therapy (NET) on IDPs psychological trauma; was not supported indicating that gender was not a moderating factor for the effect of NET on psychological trauma. This agrees with Smiths (2012) findings which examined gender effects on massage therapy and found that clients had significant pain relief and improved range of motion after treatment with message therapy and these effects were not mediated by gender. However, the finding contrasts with the study of Lans (2016) which revealed that trauma-focused treatment has a positive effect on both males and females. Also, Tarrier, Sommerfield, Pilgrim, and Faragher (2000) reported a better treatment outcome for females suggesting they were more expressive during treatment and thus tend to do better with NET, while men find it difficult to

express their psychological difficulties. As such, the results suggest that treatment outcome of NET is not moderated by gender. This holds implications for NET outcomes suggesting that its beneficial effects transcend the client gender.

This could also be based on the fact that relaxation during NET sessions engendered positive attitudes regardless of the gender of the IDPs, with gender influences being overshadowed by symptomatic relief of trauma symptoms (depression, anxiety, etc), at least in the short run. Furthermore, once a NET session has begun, clients typically become deeply relaxed and become relatively oblivious to their gender and the gender of their therapist. Narrative Exposure Therapy therapists themselves were taught to treat all clients similarly and in a respectful and non-sexual manner. This professional pattern of studied neutrality, similar to that within the practice of psychoanalysis, may attenuate the influence of the therapist's gender with the client. This finding may rather be a reflection of the fact that gender is a mere categorization of roles. Also, experimental control factors such as the

matching of gender in the study groups could have been responsible for the lack of gender effects.

## 7. Conclusion

In conclusion, this study demonstrated that gender was not a moderating factor Narrative Exposure Therapy (NET) had effects on participants' psychological trauma symptoms. Although, NET is designed for PTSD related trauma and proved effective in IDPs and other vulnerable patient groups (Mauritz, Van Gaal, Jongedijk, Schoonhoven, Nijhuis-van der Sanden, & Goossens, 2016). These findings indicate that even in the unstable location of an IDP camp, where IDPS are exposed to psychological trauma and humanitarian crisis. NET would be an effective therapeutic tool to use no matter the gender.

## 8. Recommendations

Future NET and other trauma interventions should study measures of stress outcomes such as grief and resilience to lead to a better understanding of factors that lead to resilience and post traumatic growth among previous victims of psychological trauma.

There should be equal representation across gender in future research.

Those working within the mental health circle should be encourage on capacity building and the training of NET specialist to provide services in IDP camps, trauma centres and hospitals.

Researchers in their subsequent studies should endeavor to use larger sample size in order to improve generalizability and applicability of the findings.

## References

- Abimaje, A., Augustine, A., Nadi, D., Ayado, S., & Ismail, M. (2014, April 12). Internally displaced persons: 613, 729 Nigerians living in camps. *Leadership*. Retrieved on 12/07/14 from <http://leadership.ng/news/365521/613-729-nigerians-living-camps>
- Amowitz, L.L., Reis, C., Lyons, K.H., Vann, B., Mansaray, B., & Akinsulure, S.A.M. (2002). Prevalence of war related sexual violence and other human rights abuses among internally displaced persons in Sierra Leone. *JAMA*, 287:513-21.
- Austin, J., Guy, S., Lee Jones, L., McGinn, T., & Schlecht, J. (2008). Reproductive health: A right for refugees and internally displaced persons. *Reproductive Health Matters*, 16:10-21.
- Busuito, A., Huth-Bocks, A., & Puro, E. (2014). Romantic attachment as a moderator of the association between childhood abuse and Posttraumatic Stress Disorder symptoms. *Journal of Family Violence*, 29(5), 567-577.
- Chukwuorji, J.C. (2014). Moderating role of emotion regulation on relationship of event centrality and posttraumatic stress disorder symptoms among internally displaced Tiv persons. An M.sc Thesis submitted in partial fulfilment of the requirement for the award of Master of Science in Clinical Psychology. University of Nigeria Nsukka.
- Creamer, M., Burgess, P., & McFarlane, A.C. (2001). Posttraumatic Stress Disorder: Findings from Australian National Survey of Mental Health and Wellbeing. *Psychological Medicine*, 31:1237-1247.
- Dura, M. M. (2014). *Building consensus towards combating communal crises in Nigeria: The Fulani herdsmen/Tiv farmers' conflicts in perspective*. Memo submitted to the Committees on National Security and Law, Judiciary, Human Rights and Legal Reform, National Conference, Abuja.
- Ellsberg, M., Jansen, H.A., Heise, L., Watts, C.H., & Garcia, M.C. (2008). WHO Multi country Study on Women's Health and Domestic Violence against Women Study Team. Intimate partner violence and women's physical and mental health in the WHO multi country study on women's health and domestic violence: An Observational Study. *Lancet* 371,1165-1172.

- Lans, M. J. (2016). The influence of Gender, Refugee status and Symptoms severity in complex PTSD treatment. A Masters Degree thesis of the Department of Clinical Psychology, Faculty of Behavioral Science. In Commission of Centrum 45/Arq & Utrecht University
- Mauritz, M. W., Van Gaal, B. G. I., Jongedijk, R. A., Schoonhoven, L., Nijhuis-vander Sanden, M. W. G., & Goossens, P. J. J. (2016). Narrative exposure therapy for Post-traumatic stress disorder associated with repeated interpersonal trauma in patients with severe mental illness: A Mixed Methods Design. *European Journal of Psychotraumatology*, 7, 10.3402/ejpt.v7.32473.  
<http://doi.org/10.3402/ejpt.v7.32473>
- Mooney, E. (2005). The Concept of Internal Displacement and the Case for Internally Displaced Persons as a Category of Concern. *Refug Surv*, 24, 9-26.
- Norris, F. H., Friedman, M. J., & Watson, P. J. (2002). 60,000 disaster victims speak: Part II. Summary and implications. *Psychiatry*, 65, 240-260.
- North, C. S. (2001). The toll of refugee status and the state of trauma research. *Archives of General Research*, 58(5), 483-484.
- Schauer, M., Neuner, F., & Elbert, T. (2005). *Narrative Exposure Therapy. A short term intervention for traumatic stress disorders after war, terror or torture*. Germany: Hogrefe & Hub.
- Smith, T (2012). Gender Effects in Massage Therapy. *Journal of Alternative Medicine Research*, 4, 87-96.
- Tarrier, N., Sommerfield, C., Pilgrim, H., & Faragher, B. (2000). Factors associated with outcome of cognitive-behavioural treatment of chronic post-traumatic stress disorder. *Behaviour Research and Therapy*, 38(2), 191–202.  
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## Effect of Sport Imagery on 50 Metres Dash Performance among Selected Secondary School Athletes in Ijebu Igbo, Ogun State, Nigeria

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**Abstract.** Psychological skills are significant practices necessary when identifying valuable activities for improving athlete's performance. Many athletes and coaches recognized the power of imagery in sport performance today and attribute part of their success to their use of imagery in most sports. This study therefore, was carried out to examine the effect of sport imagery on 50m dash on sport performance among selected secondary school athletes in Ijebu Igbo Ogun State. Experimental research design was adopted for the study. A total of 30 participants were drawn from four selected secondary school. The instrument used for the study was a standardised instrument of sport imagery questionnaire. Reliability value of SIQ was 0.75. The data were analysed using the analysis of covariance (ANCOVA). The findings of the study revealed that revealed that sport imagery has a significant effect on the performance on athletes in selected secondary schools in Ijebu-Igbo, Ogun State. Based on the findings of the study, it was recommended among others that school authority should provide a suitable sporting equipment and environment conducive for teaching imagery techniques on the athletes.

**Keywords;** imagery, performance, 50m dash

### 1. Introduction

Psychological skills are an important practice to consider when identifying effective activities for improving athlete's performance (Cumming and Hall, 2002). Beauchamp, Braig and Albinson, (2002) stated that several psychological techniques including the use of imagery are believed to contribute to enhance performance in a number of physical tasks.

Watt, Spittle and Morris (2002) defined imagery use as the manner in which people imagine themselves in ways that can lead to learning and developing skills and can facilitate performance of those skills. It is normally assessed in terms of its cognitive and motivational attributes. Adegbesan (2009) noted that imagery is usually defined as using all senses to construct imagined experience and is a commonly used for mental training for athletes. By using imagery, athletes can evoke the physical characteristics of an object, event, or activity which has been perceived in the past or may occur in the future.

Imagery has been used for several purposes in sports, including specific skill acquisition or rehearsal, strategy mastering or rehearsal, goal-oriented behaviours and the mediation of psychological states such as confidence, arousal and anxiety (Gould, Damarijian, Greenleaf (2002); Hall Mack, Paivio and Hausenblas (1998); Martin, Moritz and Hall (1999); Pavio (1985); Weinberg and Gould, 2007). Munroe, Giacobbi, Hall and Weinberg, (2001) also affirmed that athletes used imagery more in competition than in practice which implies that they may use imagery more to enhance performance than to learn skills. Several studies suggest that elite athletes are more likely to use imagery in practice and competition than non-elite athletes. Hausenblas, Hall, Rodgers and Munroe (1999) specified that both athletes and exercisers use imagery to aid their performance, but not all athletes are able to verbally describe exactly how they use imagery. This fact was supported by Anderson (2000) that imagery system can be used to help person meet some personal or performance goal, but it is most effective when it is used for a specific purpose.

Several literature have demonstrated that imagery can directly enhance performance by improving movement execution (Williams, 2011; Li-Wei, Qi-Wei, Orlick, and Zitzelsberger, 1992; Nordin and Cumming, 2005; Robin et al., 2007; and Short et al., 2002). Imagery can also indirectly affect performance by enhancing motivation, confidence/self-

efficacy, concentration, arousal and anxiety regulation, as well as augmenting emotional control, planning, creative thought processes, and reviewing and evaluating tasks and activities (Bernier and Fournier, 2010, Callow, Hardy, and Hall, 2001, Calmels, Berthoumiex, and d'Arripe-Longueville, 2004, Hale and Whitehouse, 1998, Hanton and Jones, 1999, Munroe, Giacobbi, Hall, and Weinberg, 2000). To explain how these benefits occur, Paivio (1985) developed a 2 x 2 framework identifying cognitive and motivational functions of imagery that operate for a specific action or at a more general level. According to Paivio, imagery has four main functions. They include: cognitive specific (CS), which involves imaging to improve various sport skills; cognitive general (CG), which aids game plans, strategies, and routines; motivational specific (MS), which helps to achieve various specific process, performance, and outcome goals; and motivational general (MG). The MG function was elaborated on by Hall, Mack, Paivio, and Hausenblas (1998) subdividing it into motivational general arousal (MG-A), employed to regulate feelings, mood, and emotion, and motivational general mastery (MG-M), which enhances mastery cognitions such as confidence.

All five of these functions are positively linked with athletic performance and success (Hall et al., 1998), with higher level athletes using the functions more than lower level athletes (Cumming and Hall, 2002b, Hall et al., 1998).

**Terms and definitions of the Sport Imagery Questionnaires (SIQ; Hall et al., 1998)**

Sub-scale	Description
Cognitive Specific (CS)	In this type of imagery, the athlete imagines himself correctly executing specific sport skill during competition.
Cognitive General (CG)	In this type of imagery, the athlete imagines himself reviewing team defensive strategies in sport involves.
Motivation Specific (MS)	In this type of imagery, the athlete imagines himself in a specific setting that is highly motivating.
Motivation General-Arousal (MG_A)	In this type of imagery, the athlete imagines himself in a general sport situation exhibiting the ability to control anxiety.
Motivation General-Mastery (MG_M)	In this type of imagery, the athlete imagines himself in a general sport situation exhibiting the ability to remain focused.

*Source: Adapted from Paivio's two-dimensional model, Hall, Mack, Paivio and Hausenblas (1998),*

In their meta-analysis of the literature, Driskell, Copper, and Moran (1994) determined that imagery use has a moderate and significant

impact on motor skill performance. The frequency of imagery use has been positively linked with athletic performance (Hall et al.,

1998). In addition, various researchers (e.g., Cumming & Hall, 2002; Hall et al., 1998) have found that athletes at higher competitive levels (e.g., varsity, national) use all five functions of imagery to a greater extent in both training and competition than do athletes at lower levels (e.g., local, recreational).

Imagery has also been used as an intervention technique to enhance confidence (Callow, Hardy, & Hall, 2001; Evans, Jones and Mullen, 2004; Garza and Feltz, 1998; Hale and Whitehouse, 1998, Mamassis and Doganis, 2004; McKenzie and Howe, 1997; Short, Bruggeman, Engel, Marback, Wang, Willadsen, &hort, 2002), motivation (Beauchamp et al., 1996; Martin and Hall, 1995), and attentional control (Calmels, Berthoumieux, and d'Arripe-Longueville, 2004) in athletes. Imagery combined with other mental training methods (relaxation, stress inoculation training) has been shown to help athletes decrease or control precompetitive anxiety (Cogan and Petrie, 1995, Kerr and Leith, 1993; Lee and Hewitt, 1987, Ryska, 1998, Savory, 1997). Research has also shown that specific types of imagery are effective in changing athletes' perceptions of anxiety from harmful and negative to facilitative and challenging (Evans et al., 2004, Hale and Whitehouse, 1998; Mamassis and Doganis, 2004; Page, Sime, and Nordell, 1999). Imagery incorporates all of the natural senses in order to create a vivid, lifelike image in an athlete's mind. The purpose of this technique is for athletes to imagine themselves participating in a certain skill or activity and view themselves executing skills properly and achieving the desired outcome. Although nothing is quite as effective as physical practice, imagery training is a good method for Athletes who need to improve their performance or are unable to physically perform due to injury or other circumstances (Newsom, Knight, and Balnave, 2003; Sordoni, Hall, and Forwell, 2000).

## 2. Objective of the study

To examine the effect of sport imagery on 50 m dash on sport performance among selected secondary school athletes in Ijebu-Igbo, Ogun State.

## 3. Statement of the problem

In most of our secondary school today, sport master/mistress learn nothing about some psychological skills that can affect the performance of their athletes such as anxiety, tension, motivation etc. They believe that athletes should go for competitions and come back with trophies, without considering how athletes can imagine their winning. Imagery has been used for different purposes in sports, including specific skills acquisition or rehearsal, goal oriented behaviour and the mediation of psychological states, such as confidence, arousal and anxiety.

The researchers discovered that sport imagery have not been used by the athletes during training for any competition (inter house sport, invited school relay and so on) and the use of sport imagery can be of assistant to the athlete to observe the outcome of the game and prepare them for success. since imagery has been shown to enhance self-confidence in athletes, therefore the purpose of this study is to examine the effect of sport imagery on 50 metres dash on sport performance among selected secondary school athletes in Ijebu Igbo, Ogun State.

## 4. Research Hypothesis

There will be no significant effect of sport imagery on 50 m dash on sport performance among selected secondary school athletes in Ijebu Igbo, Ogun State, Nigeria.

## 5. Methodology

### 5.1 Procedure

Thirty (30) participants were drawn from four selected secondary school in area of the study. Fifteen (15) of the participants were used for the experimental study and the remaining participants were used for control group, after approval was given by the school authority to use the athletes.

The purpose of the study was explained to the athletes by the researcher and his assistants. While doing this, participants who expressed their interest in the study were given the

questionnaire individually to fill and was collected immediately.

**5.2 Measure**

The SIQ, designed by Hall, Mack, Paivio, and Hausenblas (1998), is a 30-item self-report questionnaire for assessing athletes' use of imagery, and has been used to investigate imagery use in various sports (Callow and Hardy, 2001; Evans, Jones, and Mullen, 2004, Short and Short, 2005). The SIQ contains thirty 7-point Likert scale items grouped into five categories, one for each of the five functions of imagery: cognitive general (CG), cognitive

specific (CS), motivational general-arousal (MG-A), motivational general-mastery (MG-M), and motivation specific (MS). The 7-point Likert scale, from 1 (rarely) to 7 (often), is used to report how frequently participants use each of the five functions of imagery. The test items are categorized as follows: cognitive specific (7 items), cognitive general (6 items), motivational specific (5 items), motivational general-arousal (6 items), and motivational general-mastery (6 items). Hall et al. found the SIQ to be a reliable and valid test of athletes with adequate psychometric properties with Cronbach alpha coefficients ranging from 0.70 to 0.88.

**6. Result**

**Table 1: Sex of the Participants**

	Frequency	Percent	Valid percent	Cumulative percent
Valid Male	20	66.7	66.7	66.7
Female	10	33.3	33.3	100.0
	30	100.0	100.0	

The table above shows that 20 participants (66.7%) were male and 10 participants (33.3%) were female.

**Table 2: Age of the Participants**

	Frequency	Percent	Valid percent	Cumulative percent
Valid 12-15	27	90.0	90.0	90.0
16-19	3	10.0	10.0	100.0
Total	30	100.0	100.0	

The table above shows that 27 participants (90%) were between 12-15 years while 3 participants (10%) were between 16-19 years.

**Table 3: Types of Sport of the Participants**

	Frequency	Percent	Valid percent	Cumulative percent
Valid Football	10	33.3	33.3	33.3
Athletics	20	66.7	66.7	100.0
Total	30	100.0	100.0	

The table above shows that 10 participants (33.3%) play football while 20 participants (66.7%) were Athletes.

**Testing of hypotheses**

There will be no significant effect of imagery use in the pre-test and post-test in sport performance among selected secondary school athletes in Ijebu-Igbo

**Table 4:** Table showing the effect of imagery use in the pre-test and post-test in sport performance

Source	Sum of square	DF	Mean square	F	Sig.
Covariates	1896.330	1	1896.330	5.649	.025
Main effect					
Treatment group	1631.259	1	1631.259	4.859	.036
Explained	2403.431	2	3.580	3.580	
Residual	9063.536	27	335.687		
Total	11466.967	29			

The table above presents ANCOVA result on use of imagery techniques on sport performance, following the 4weeks training among selected secondary school athletes in Ijebu-Igbo.

It was observed in the training effect that there is a significant difference in the effect of treatment on sport performance among selected secondary school athletes in ijebu-igbo ( $F(2,27)=4.859, P<.05$ ). Therefore, the null hypothesis which stated that there will be no significant effect of imagery use in the pre-test and post-test in sport performance among selected secondary school athletes in Ijebu-Igbo is not accepted.

## 7. Discussion

The purpose of this study was to examine the effect of sport imagery on 50 m dash on sport performance among selected secondary school athletes in Ijebu Igbo. Ogun State. Weinberg et al. (2003) asserted that there have been many quantitative and qualitative studies that have shown that the systematic use of imagery (under certain conditions) was associated with enhanced performance not only in motor performance and skill acquisition, but improvements were also found in confidence, concentration, and decreased anxiety.

Martin et al. (1999) postulated that sport psychologists encourages and trains athletes to use imagery for a number of purposes, such as enhancing motivation and self-confidence, coping with injury or pain, regulating arousal, and managing stress and anxiety. Orlick (2000) in his own submission view that mental imagery is a means for athletes to get the best out of themselves in both training and competition. He goes on to say that with refined imagery ability, an athlete can use it for such purposes as seeing success, motivation, perfection of skills, familiarization (e.g., with competition site, game plan, opponent, etc.), setting the stage for performance, and for refocusing (Orlick, 1986). He went further to note that, athletes who make the fastest progress and those who ultimately become their best make extensive use of performance imagery. They use it daily as a means of directing what will happen in training, and as a way of pre-experiencing their best

competition performances.” Clearly then, there is support from both research and application that mental imagery is a useful tool and can be employed for many purposes.

Morris, Spittle, and Watt (2005) noted that by performing imagery training sessions, athletes will increase their expectations and be more likely to expect success in a given skill. These increases in expectations are more likely to increase the chance of actual successful performances. To use imagery effectively to improve performance in any activity, athletes must perform the activity in their mind as though they are actually performing the activity.

## 8. Conclusion

In conclusion it was revealed that sport imagery has a significant effect on the performance on athletes in selected secondary schools in Ijebu-Igbo, Ogun State.

## 9. Recommendations

Base on the findings, the following recommendations were made:

- School authority should provide a suitable sporting equipment and environment conducive for teaching imagery techniques to the athletes.
- Imagery techniques should be used for athletes, most especially during the major competition such as intra and inter mural sport and invitation school relay.
- Emphasis should be placed by the school authority in the use of imagery by the sport master/mistress to reduce the tension, stress and anxiety of the athletes.
- Sport masters/mistress should pay particular attention to the demands of the tasks and assess which imagery functions would be most effective for the desired outcome.

## References

- Adegbesan O.A (2009) Use of Imagery by Athletes in Nigeria. *Perceptual and Motor Skill* 108,13-50

- Anderson, M.B. (2000). *Doing Sport Psychology*.
- Beauchamp, M. R, Bray,S. and Albinson, J. G. (2002). Pre-competition Imagery, Self-efficacy, and Performance in Collegiate Golfers. *Journal of Sports Sciences*, 20,697-705.
- Bernier, M, & Fournier, J. F. (2010). Functions of Mental Imagery in Expert Golfers.*Psychology of Sport and Exercise*2 (3), 5.
- Callow, N, Hardy, L, and Hall, C. (2001). The Effects of a Motivational General Mastery Season with an Elite Rugby Union Player. *The Sport Psychologist*, 18, 252-271
- Calmels, C., Berthoumieux, C, and d'Arripe-Longueville, F. (2004). Effects of an `Imagery Training Program on Selective Attention of National Softball Players. *The Sport Psychologist*, 18, 272-296.
- Cumming, J. and Hall, C. (2002b). Deliberate imagery practice: the development of imagery skills in competitive athletes. *Journal of Sports Science*, 20, 137-145.
- Cumming, J.and Hall, C. (2002). Athletes' use of imagery in the off-season. *The Sport Psychologist*,16, 160-172
- Driskell, J.E. Copper, C. and Moran, A. (1994). Does Mental Practice Enhance Performance? *Journal of Applied Psychology*, 79, 481-492.
- Evans, L, Jones, L, and Mullen, R. (2004). An Imagery Intervention During the Competitive Season with Elite Rugby Players.*The sport psychologist*, 18,252-271
- Gould, D. Damarjian, N. and Greenleaf, C. (2002). Imagery Training for Peak Performance. In J. L. Van RaalteandB. W. Brewer (Ed.), *Exploring Sport and Exercise Psychology* (pp. 49-75), Washington, DC: *American Psychology Association*.
- Hale, B. D. and Whitehouse, A. (1998). The Effects of Imagery Manipulated Appraisal on Intensity and Direction of Competitive Anxiety. *The Sport Psychologist*, 12, 40-51.
- Hall, C. R.Mack, D. Paivio, A. and Hausenblas, H. (1998). Imagery Use by Athletes:Development of the Sport Imagery Questionnaire. *International Journal of Sport Psychology*, 29, 73-89.
- Haunsenblas, H.A, Hall, C.R,Rodgers,W.M.& Munroe,K.J (1999). Exercise Imagery:Its Nature and Measurement.*Journal of Applied Sport Psychology*, (11),171-180
- Martin, K. A. & Hall, C. (1995). Using Mental Imagery to Enhance Intrinsic Motivation. *Journal of Sport and Exercise Psychology*, 17, 54-69.
- Martin, K. A., Moritz, S. E, and Hall, C. R. (1999). Imagery Use in Sport: A Literature Review and Applied Model. *The Sport Psychologist*, 13, 245-268.
- McKenzie, A. D. & Howe, B. L. (1997). The Effect of Imagery on Self-Efficacy for a Motor Skill. *International Journal of Sport Psychology*, 28, 196-210.
- Munroe, K. J. Giacobbi, P. R. Hall, C, and Weinberg, R. (2000). The four Ws of Imagery Use: Where, When, Why, and What. *The Sport Psychologist*, 14, 119-137.
- Nordin, S.M., & Cumming, J. (2006). Measuring the Content of Dancer's Images: Development of the Dance Imagery Questionnaires (DIQ). *Journal of Dance Medicine and Science*, 3&4, 85-98.
- Orlick, T (1986). *Psyching for Sport: Mental Training for Athletes*. Champaign, IL: Human Kinetics.
- Orlick, T (2000). In Pursuit of Excellence: How to Win in Sport and Life Through Mental Training (3<sup>rd</sup> ed.). Champaign, IL: Human Kinetics.
- Paivio, A. (1985). Cognitive and Motivational Functions of Imagery in Human Performance. *Canadian Journal of Applied Sport Sciences*, 10, 22-28.
- Paivio, A. (1985). Cognitive and Motivational Functions of Imagery in Human Performance. *Canadian Journal of Applied Sport Sciences*, 10, 22-28.
- Short, S.E, Bruggeman, J.M., Engel, S.G, Marback, T.L.,Wang, L.J, and Willadsen, A. (2002). The Effect of Imagery Function and Imagery

- Direction on Self-Efficacy and Performance on a Golf- Putting Task.*The Sport Psychologist, 16*, 48-67
- Watt, A.P. Spittle, M. Jaakkola, T, and Morris, T. (2008) "Adopting Paivio's General Analytic Framework to Examine Imagery Use in Sport," *Journal of Imagery Research in Sport and Physical Activity: 3*(4)
- Weinberg, R. and Gould, D. (2007) *Imagery. Foundations of Sport and Exercise Psychology* pp.295-321. Champaign, IL: Human Kinetics
- Williams, J. (2011). *Applied Sport Psychology: Personal Growth to Peak Performance* (5<sup>th</sup> Ed.).McGrawHill USA



**Part Three**  
**Reading Skills**



## Using Reading Comprehension Strategies to enhance Students' Reading Proficiency in Nigerian Secondary Schools

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**Abstract.** Reading is an active developmental process in which the reader constructs meaning by using information from the text as well as his prior or background knowledge. It is also the ability to make sense of the content of what is read from print. Reading comprehension is a basic tool that enables an individual, particularly students meet the reading demands of their academic discipline. To be able to attain proficiency in one's area of work, one needs reading skills in general and specific knowledge, which keeps one sharp, smart and alert. Researchers have proven that good readers are more productive and efficient than poor readers. Reading is a booster to self-esteem and intelligence and helps one to have firm grips of life and circumstances. It is therefore very imperative for readers particularly students to be strategic in their reading comprehension to enable them attain the level of desired proficiency. This work considered the concepts of reading, causes of poor reading, importance of reading, and reading strategies such as Literary Awareness Program (LAP), News on the Board (NOB), and Language Experience Approach (LEA) at the lower level. At the higher or secondary school level. Strategies such as skimming, scanning, speed reading and a host of others are used to enhance reading comprehension among Nigerian secondary schools students

**Keywords:** Proficiency, Comprehension, Strategies

### 1. Introduction

Reading is a very indispensable skill at every level of learning in school and even outside the school. At school reading is carried out irrespective of the subject area, be it in the arts or sciences. In job carriers, reading is carried to enhance the level of productivity. Using different strategies at the educational sector is therefore very imperative in reading.

### 2. Concept of Reading

According to reading experts, reading is considered the most problematic skill among the four language skills which are listening, speaking, reading and writing. Several researchers have given different definitions of reading and its importance in the area of communication. Nwogu and Nwoke (2010) defined reading as the ability to follow printed or written sequence rapidly for comprehension usually silently, while the eye scans whole groups of words or sentences at a time. Reading is a meaning-searching and meaning-getting activity. The reader is never passive; he is actively constructing information, making use of textual cues in conjunction with the information about language, content of text and knowledge of the world generally stored in his head. This

shows the fact that the reader is a contributor to what he reads as he makes use of the information he has prior to the reading exercise. (Ezeomah, Akpan, & Oyetunde, 1999).

Russell (2013) sees reading as the act of identifying symbols and obtaining meaning from it. The written symbols are used to form words and sentences, which are in turn expected to represent certain information or intention. Reading involves skill in the visual recognition of words and the comprehension of their contents. Nwogu & Nwoke (2010).

Reading is one of the language skills that pose problems to both teachers and students, as great majority of them are failing to learn to read, and many more are unable to read to learn Umolu (1997). Bunza (1997) warned that, 'There are many children at risk and unless we come to their rescue, the age of darkness might recur.' The problem is compounded by teachers' ignorance of what reading is, inadequate preparation by teachers, and poor methodology, and students' apathy to reading. In the larger society, reading level is very low in spite of increasing volumes of materials that surface everyday begging for reading. Ausbeth (2006) revealed that the reading rate of Nigerians is very poor and this affects zealous writers negatively.

Reading ability increases in importance as the society become complex and industrialized. The more technology advances, the more occupation require high levels of education or specialized training in which good reading ability is vital. Many graduates are unemployable today because they do not possess the minimum reading skills required for success in job-training programs. Few realize the level of reading competence they need in various occupations to be able to earn a living. Students who fail to read adequately, are increasingly handicapped as they progress in school. Some of them repeat the same classes while others end up being dropouts without graduation. The effect is the inability to secure gainful desirable employment. To avoid loss of self-esteem and permanent welfare status therefore, reading proficiency is very paramount.

To a large extent those who cannot read, or choose not to read, are cut off from cultural activities and find it difficult to associate with educated people. Reading therefore fulfils emotional and spiritual needs of individuals. According to Oyetunde (2000), there are overwhelming signs that the school system is failing in its critical role of developing efficient reading skills in children. Research evidence as well as the experience of many parents and teachers, show that an appalling high proportion of primary and secondary school children are either outright illiterates or semi-illiterates. Since it is impossible for many of such students to cope with the reading demands of the school curriculum, they drop out and relapse into illiteracy.

### **3. Causes of Poor Reading**

Many reasons are attributed to poor reading or lack of reading comprehension. Some of these reasons are given by Lawal, Abanihe and Ohua (2004) as follows: poor foundations at the early stage of education, lack of reading texts, poor reading environment, certificate-oriented system, general lack of interest as a result of political gains, preference for home video and leisure to the boring stationary reading orientation. Others are the advent of social media such as text messages, twitter, Instagram, Facebook and a host of others. The above reasons have contributed one way or the other to poor reading mostly among students and the end result is the abysmal poor performance of students in examinations.

### **4. Importance of Using Strategies in Reading Comprehension**

The importance of reading to both adult and students cannot be overemphasised. Reading is important to students because they need it to pass their examinations. Adults also need reading in order to perform creditably well in their jobs. Proficient readers constantly make predictions while reading and they continuously anticipate what will come next. Their prior knowledge and experience with texts as well as with the world around them allow them to do this. It is this continuous interactions with the

text that allows readers to make sense of what they are reading (Zare,2012; Zare & Othman, 2013).

For students to be proficient in their reading comprehension, they need to make use of their metacognitive strategies with the different types of reading which includes; intensive reading, extensive reading, scanning, skimming, speed reading silent reading to mention just a few, at the advanced reading level. However, at the lower level, strategies such as Language Experience Approach (LEA), Literary Awareness Program (LAP), News on the Board (NOB), Story-telling, News sharing to mention just a few, can be used for beginning readers to build their reading foundations. Making use of metacognitive strategies is very paramount in reading as it helps the readers to plan, monitor and regulate their reading activities. The knowledge and use of metacognitive strategies at every level of reading also helps the readers to predict, question and evaluate their reading achievement. The reading strategies at the lower levels that can be used by beginning readers as advocated by Oyetunde and Aboki, (1998) are: the Language Experience Approach (LEA), Literary Awareness Approach (LAP) and News on the Board Approach (NOB).

#### **4.1 The Language Experience Approach**

This approach is used to encourage learners to narrate their experiences or stories while the teacher writes it on the chalkboard. The teacher needs to be careful with the use of his vocabulary and sentence construction so as to carry the learners along. The story is read to the learners as narrated and written. It helps the learners to own the story and to associate words with letter which eventually improves reading.

#### **4.2 Literary Awareness Program (LAP)**

This is a language method that is used to enhance reading at the lower reading level by involving an adult to read interesting stories aloud to children every day. LAP helps to extend both the experience and language backgrounds of the children and introduces children to book language. It leads to improvement in children's listening and speaking skills.

#### **4.3 News on the Board (NOB)**

News on the Board is another strategy that is used to teach beginning readers as the teacher asks the children to share their news experiences in the class, while he writes some of the news on the board and reads it with the children.

#### **4.4 Literary Experience Approach (LEA)**

This is similar to News on the Board except that the stories the children dictate follow some particular theme or order. In this approach, children are encouraged to talk about their interests and experiences.

At the higher level of reading, strategies such as skimming, scanning, speed reading, silent reading are used to build student's reading comprehension.

#### **4.5 Skimming**

Reading to identify the main points of text is regarded as skimming. This means paying close attention to items that form the substance to the text. If the main theme is located by the reader, he can easily skim further to locate the sub-theme. Skimming may be done by previewing or overviewing a text for general information. During the process of preview, the reader finds out whether the text is an authentic source of knowledge in the area of reading and if it contains the information that he needs. For the student to discover the purpose and scope of what he reads, he needs to preview the text. On the other hand, if he wants to get the general idea of the reading material, he needs to survey it.

#### **4.6 Scanning**

Scanning means quickly glancing or searching through a piece of reading material for a specific information. It can be used as means of finding a name, date or meaning of a word in the dictionary to find an answer to a question in a text. It takes deliberate efforts of practice for one to get the skill of scanning. To get at the needed information, there is need to make use of the eyes quickly moving it to identify the clues and reading the clues for the needed information. To

carryout appropriate scanning, the teacher may involve the students in the following skills: a proper mental attitude, concentration, a purposeful thought, close attention to printed page and awareness of time limit.

#### **4.7 Speed Reading**

According to Aliyu (2010), speed reading is carried out by making great use of expanded eye span or sweep of the eyes with the aim of going over the reading material at a great speed. The material may range from novel, newspaper magazine or journal. Speed reading depends on the purpose of reading and the types of material to be read. It may be used to obtain gist of the main information in a text, while the reader may only slow down when a particular point of interest is observed. The skill can be used in scanning when reading for a particular piece of information.

To perfect training in speed reading, the teacher should drill the students in different kinds of texts, while the reader is timed when reading and his comprehension ability is observed.

### **5. The Importance of Comprehension**

Reading comprehension is an acquired skill that is focused on the understanding of what is read. Oxford English Dictionary (2010) defines comprehension as “the action or fact of comprehending with the mind, understanding, grasping with the mind, power of receiving and containing ideas.” The dictionary of Education defines comprehension as, ‘the act of understanding of the meaning of the printed or spoken language as constructed with the ability to perceive and pronounce words without reference to their meaning.’

Well-developed comprehension abilities involve interactive strategy used to come up with a meaningful understanding of the input (Lin, 2010). Comprehension may not be exclusively devoted to input alone, it may also affect the fluency of a learner’s output. Russell (2013) says, comprehension carries the understanding of words or phrases beyond recognition to the understanding of the meaning intended by the author. The level of understanding of students can be attested to

through their performance in examinations as well as their linguistic competence.

Oyentude (2015) attested to the fact that many educated Nigerians cannot express themselves in writing clearly; that is in ways that are coherent, grammatical and interesting. That is why many graduates of our educational institutions are referred to as educated illiterates. (Brown, 2007, & Grabe, 2010) said, from fluency, the amalgamation of competence (one’s underlying knowledge) and performance (one’s overt, external actions or behaviours) can be identified as an aspect of comprehension. Above all, comprehension can be identified as an interactive, strategic process which, when fully developed, results in reading fluency and proficiency.

There are different levels of reading comprehension. Day and Park (2005) discussed reading comprehension in terms of several different types, most prominent among them are; literal, inferential and critical reading.

#### **5.1 Literal Comprehension**

Literal comprehension is the first level of comprehension. It is the simplest way of locating information in the texts due to the fact that information is clearly and directly stated in the text. Questions are directly asked to assess the students’ ability to understand and identify information that are stated in a text. Chiang (2005) opined that literal questioning can vary on levels of difficulty; based on text length, the order in which the questions are asked and how they match the order of the text. The use of pronouns is also considered, since it is needed to be identified before information in the text can be understood. In applying or employing literal comprehension skill, there is no need of applying interpretation since the information is explicitly stated in the text.

#### **5.2 Inferential or Interpretation comprehension**

Inference requires learners to go a step beyond literal understanding and to combine and use their own knowledge in order to come up with answers to implicitly stated information (Day &

Park, 2005). Inferential comprehension involves teaching students to read more strategically. This is derived from the teaching model that learners develop understanding through the process of interpreting new information in light of past experiences, rethinking and past knowledge that is based on new information. Using inferential comprehension involves teaching students to read more strategically. Inferences are the conclusions that are drawn on the bases of what is known and the judgements made on given information (Scott, Bonnie, & Russell, 2002).

### **5.3 Critical or Evaluative comprehension**

Evaluation requires a learner to have a general knowledge of the topic under examination and an understanding of the reading material in order to give judgment or opinion about the text (Day & Park, 2005).

## **6. Causes of Inefficiency in Reading Comprehension**

For readers to attain proficiency and fluency in reading comprehension, they have to guide against the following reading obstacles such as vocalization, word-by-word reading, finger pointing, regression, head movement, and daydreaming.

### **6.1 Vocalization**

Vocalization is an act of pronouncing or sounding out words when reading. Vocalization may be in different forms such as, movement of lips, whispering, and mental pronunciation. Using any or all of these habits by a reader leads to reduction of speed in reading. For fast reading to be possible, the reader needs to engage both the eyes and mind by concentrating on the task, since the eyes move faster than the lips. The reader can discipline himself/herself by holding the lips together till he/she overcomes the problem.

### **6.2 Word -by-Word Reading**

Some readers concentrate on individual words instead of concentrating on ideas to make meanings from what is read. Reading by looking at one word at a time leads to focusing attention

on words instead of sentences or paragraphs which hinders the communication of important information. To overcome such a habit, the reader needs to give attention to key words and less attention to supporting words.

### **6.3 Finger Pointing**

This is the practice of using finger, pencil, biro, stick or ruler to point at words line by line. This is a very bad reading habits as it delays fast reading. This is bad because nothing can move faster than the eyes in reading. To overcome this habit, the reader should train the eyes to follow the words in a text rather than using any other object to point at words.

### **6.4 Regression**

Regression is that habit of going back to re-read words or phrases again and again, it can also be referred to as back tracking. When back tracking or regression is done once in a while in the cause of reading, it may not be bad. But when it becomes a habit, it slows down reading and prevents the reader from gaining full understanding of what is read. This habit can be overcome by stopping once in a while to reflect on what has been read to be able to understand the text instead of going back to re-read words or phrases several times.

### **6.5 Head Movement**

Head movement is a situation whereby the reader keeps moving his head from side to side instead of moving his eyes from left to right. It is a bad habit because it slows down reading and exhausts the reader easily. It takes the reader efforts to move the head as he dissipates energy. This habit can be remedied by firmly holding the head in place to stop it from moving while reading and then make use of the eyes.

### **6.6 Daydreaming**

A daydreaming reader is someone whose mind wanders away from what he is reading. He lacks concentration and it hinders him from giving a coherent account of what he reads. A daydreaming reader wastes a lot of time on

reading thereby giving a false sense of having read as he stays long on reading. This problem can be tackled by taking note or underlining important points while reading.

## **7. Strategies for Attaining Reading Proficiency**

For students to attain proficiency in reading, researchers have indicated that teachers need to adopt innovative teaching strategies in students' reading comprehension. Many students as well as teachers have no knowledge of metacognitive strategies and its application in reading comprehension. Muodumogu, in Ebibi (2018) evaluated students' awareness and application of metacognitive strategies to reading and found that most of the students had limited knowledge of metacognitive strategies and that maturity did not guarantee the application of metacognitive strategies. There was a further observation that readers do not spontaneously acquire metacognitive knowledge and control as they grow. They should be taught certain cognitive skills or strategies to enable them process what they read to attain proficiency in their reading comprehension. On the part of the teachers, they lack the methodology in teaching reading comprehension.

Stahl in Ebibi (2018) studied the effect of three metacognitive strategies on beginning readers engaging them with informational texts. using the five instructional practices of Survey, Correct, Read, Outline and Look-back (SCROL) which is similar to SQ4R and found that learners' comprehension of the texts was greater under the SCROL than in the control conditions. He further discovered that students were not differently affected by the treatment in the way they integrate textual information with prior knowledge. The conclusion was that, a teacher is responsible for aiding the students in pulling out deeper meaning from reading by assisting them to form mental representations from informational text, by asking questions that encourage the students to apply prior knowledge to the context of the reading and getting the students to critically think about what is going on to be able to make relevant and practical predictions.

The following strategies have been identified by reading experts to aid students in gaining proficiency in reading.

- Purpose setting
- Self-Monitoring
- SQ4R OR SQ3R
- Evaluating text
- Note taking/annotating
- Activation of prior or background knowledge

### **7.1 Purpose Setting**

Purpose is the foundation of effective reading (Oyetunde 2015.p.2). it is very important to define the reason for reading a given material before reading. If the purpose is not defined, the reader may find it difficult to understand what he has read and much of what is read may be forgotten.

One's purpose of reading may be to gain information, verify existing knowledge, or to critique a write up. A person's purpose of reading may be for enjoyment or to enhance knowledge of what is read. A person reading poetry for enjoyment needs to recognize poetic language and devices.

Some purpose-setting questions may be helpful in guiding students. For instance, questions such as; why am I reading this book? Why did the author write this book? What new information do I expect to get from reading this book? If a student has these questions in mind and is able to answer them, he will be able to establish the purpose of his reading and will end up achieving his purpose.

### **7.2 Self-Monitoring**

This is a strategy that helps the student to stop and think over what he reads. It is more or less a self-evaluation strategy that enables the student to test himself to know the extent of his understanding of what he has read. This can be done by summarizing what is read either orally or written. It is a way of monitoring comprehension, correcting misunderstanding and consolidating what is learnt. This system of pausing to reread to gain full understanding is a

means of relaxing the eyes and it is to the reader's advantage.

### 7.3 SQ4R OR SQ3R

This is used to guide the students to read a text with ease.

**Survey:** a text can be surveyed from the title, headings, subheadings, maps, pictures, sidebars, bold marks, italic and print before reading.

**Question:** the students may turn a heading or title of a text to questions and tries to answer them. This enhances understanding of what is read as the answers can only be given when the passage is understood.

**Read:** reading brings about enlightenment and information. It leads to answering questions correctly.

**Recite:** reciting enables the reader to remember what he read and it enhances comprehension.

**Review:** reviewing a text leads to remembering important details of a text and brings a recollection of facts.

**Reflect:** Reflecting of a text helps the student generate questions and gives accurate answers as well.

## 8. Conclusion

It has been established that the purpose of reading is comprehension. That is, getting meaning from print. Without comprehension, reading according to is a frustrating, pointless exercise in word calling. It is therefore no exaggeration to say that how well students develop the ability to comprehend what they read has a great effect on their entire lives. This implies that learners' acquisition of good reading comprehension skills or strategies will not only guarantee their success in their academics but will also ensure their accomplishment in their professions at adulthood.

## 9. Recommendations

It has been established that reading is problematic to both adult and students generally since many fail to learn to read, while others fail

to read to learn. To be able to learn to read, and to read to learn therefore:

- The teachers should be metacognitive to help the students have knowledge of themselves, the tasks and the strategies.
- Students should be guided by the teacher to predict, question, and evaluate their reading activities.
- They should be introduced to the different methods of reading both at the lower level as well as the higher level of reading comprehension.

## References

- Aliyu, J. S. (2010). *Upgrading English Achievement*. Zaria: Tamaza Publishing Company Networks Ltd.
- Arua, E.A. (2009). *Reading Comprehension Skills for Colleges and University Students*. Ibadan: Dalang Printing Press.
- Brown, H. D. (2007). *Principles of Language Learning and Teaching*. New York: Pearson Education. Retrieved January, 2019 from [http://www.eric.ed.gov/fulltext/ED500000/reading/what\\_can\\_Teachers\\_do\\_to\\_improve\\_Reading\\_Comprehens.pdf](http://www.eric.ed.gov/fulltext/ED500000/reading/what_can_Teachers_do_to_improve_Reading_Comprehens.pdf)
- Chiang, C. (2005). *The Effects of Graphic Organizers on Taiwanese Tertiary Students' EFL Reading Comprehension and Attitudes towards Reading in English*. An M.Ed thesis in Education, Faculty of Education, Australian Catholic University. Retrieved from [http://www.eric.ed.gov](http://www.eric.ed.gov/fulltext/ED500000/reading/what_can_Teachers_do_to_improve_Reading_Comprehens.pdf) September, 2016
- Day, R. R., & Park, J. S. (2005). *Developing Reading Comprehension Questions*. *Reading in a Foreign Language*, 17(1), 60-73 Retrieved January, 2019 from [http://www.eric.ed.gov/fulltext/ED500000/reading/what\\_can\\_Teachers\\_do\\_to\\_improve\\_Reading\\_Comprehens.pdf](http://www.eric.ed.gov/fulltext/ED500000/reading/what_can_Teachers_do_to_improve_Reading_Comprehens.pdf)
- Ebibi, J. O. (2018). *Teachers' Assessment and Senior Secondary Students' Achievement and Retention in Reading Comprehension in Education Zone B of Benue State*. An unpublished Ph.D Thesis, Department of Curriculum and Teaching, University of Makurdi

- Ezeomah, C., Akpan, E.U.U., & Oyetunde, T.O. (1999). Innovative approaches to education and human development Vol. 4. Jos: LECAPS Publishers
- Grabe, W. (2010). Fluency in reading—Thirty-five years later. *Reading in a Foreign Language*, 22(1), 71-82.
- Lawal, A., Abanihe, I.I. & Ohua, I.N. (2004). Perspectives on applied Linguistics in Language Literature: Sterling Horden Publishers Nig.Ltd.
- Lin, L. (2010). The impact of the retelling technique on Chinese students' English Reading Comprehension. *Asian EFL Journal*, 12(2), 163-191. Retrieved February, 2019 from [http://online.168%Asian.EFL.journal/reading\\_comprehension/2010%30\\_/02%](http://online.168%Asian.EFL.journal/reading_comprehension/2010%30_/02%)
- Nwogu, K. & Nwoke, A. (2002). A Handbook on the Teaching of English language in Nigeria secondary schools. Jos: YA-BYANGS Publishers.
- Oxford English Dictionary (2<sup>nd</sup> ed.). (2010). Oxford, UK: Oxford UP.
- Oyetunde, T. O. (2000). Helping children to become good readers: Guide for parents and teachers. Jos.
- Oyetunde, T. O. (2015). Becoming a Good Reader. Inaugural Lecture. Jos: Empowerment Initiatives for Vulnerable Populations (EIVP).
- Oyetunde, T. O., & Muodumogu, C. A. (1999). Effective English Teaching in Primary and secondary schools: some basic considerations and strategies. Jos: Conference on Educational Improvement.
- Russell, C. (2013). Four decades of informal reading inventories. *Review of Higher Education and Self-learning*, 6(22), 1-12.
- Scott, K. B., Bonnie, G. & Russell M. G. (2002). Intervention for students with reading comprehension problems. Retrieved January, 2019 from [https://researchgate.net/publication/242\\_%08](https://researchgate.net/publication/242_%08)
- Zare, P. & Othman, M. (2013). The relationship between reading and comprehension and reading strategy. *International Journal of Humanities and Social Science*, 3 (13), 1-7.

## **An Evaluation of Primary One Pupils' Performance in Basic Reading Skills in Government Schools in Jos Metropolis, Plateau State**

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**Abstract.** Strong reading skills are one of the most important educational outcomes that predict future success. Many different skills must work together when reading a text, including oral language, print awareness, phonemic awareness, reading fluency, and comprehension. The purpose of this study was to evaluate the reading skills of pupils in government schools in Jos Metropolis. In a descriptive study, 185 primary one pupils completed an individually administered reading assessment in each reading skill. The results showed that pupils were proficient in oral language and aspects of print awareness. However, performance in phonemic awareness, reading fluency, and listening comprehension was very low. Knowledge of the reading skills that pupils have mastered is important so that teachers in early childhood classrooms can target instruction for those particular skills that are still weak. This study shows that additional instruction is needed in phonemic awareness, reading fluency and listening comprehension.

**Keywords:** Evaluation, primary one pupils, academic performance, and Basic Reading Skills

### **1. Introduction**

One of the most important skills that young children must develop for future success in school and in society is strong reading skills (Strickland, 2010). Success in all school subjects

rely on the foundational skill of reading (Chris-Okafor, 2014). A pupil who cannot read well will not be able to succeed in English, social studies, science, religious education, or even mathematics because all of these subjects require the ability to read in order to learn from the textbook and class notes. Therefore, fostering strong reading skills is perhaps the most important goal for education in the nursery and lower primary grades.

Strong reading skills are also important for longer-term social and economic outcomes. Children who cannot read well in primary three are very unlikely to graduate secondary school (Snow, Burns, & Griffin, 1998). Individuals with good reading abilities are more likely to get a job, have a higher salary, and are less likely to be involved in criminal activities (National Institute for Literacy, 2008). Research has even shown that children who have strong reading abilities by age seven have higher salaries, better houses, and better jobs

at age 40 (Ritchie & Bates, 2013). In addition to being successful professionally, the ability to read is necessary to get information about important issues in health, society, and politics (Greaney, 1996). Reading can also be a source of enrichment and pleasure. At the societal level, strong reading skills are important to improve the national economy, civic participation, and national development (Wagner, 2000). In summary, the most important outcome of a good

education is the development of reading skills (Greaney, 1996).

Reading is defined as the ability to obtain information from print (Oyetunde, 2009). Reading is not just the ability to pronounce words in a text, but more importantly includes the ability to understand what is being read. Recent research has provided substantial evidence about two critical aspects of learning how to read in childhood. First, the foundation for learning how to read begins very early in life, starting from infancy (Snow et al., 1998). This is called *emergent literacy*. Even though young children may not be able to read a text, they are developing foundational skills that will prepare them to read in the future. One of these prerequisite skills for reading is oral language (Roskos, Tabors, & Lenhart, 2009). Young children who can speak and understand language well will be better readers in the future. A second critical aspect of learning to read is that there are many different skills that must work together when reading a text. The National Reading Panel (2000) and National Institute for Literacy (2008) have identified many skills that are necessary for children to be good readers, including oral language skills, print awareness, phonemic awareness, reading fluency, and comprehension.

Oral language consists of speaking and listening skills (Roskos et al., 2009). There are two aspects of oral language that are important for future reading skills. First, young children need to develop their understanding of a wide range of vocabulary words (Roth, Speece, & Cooper, 2002). Young children should be exposed to at least two new words every day in order to develop competency in oral language (Roskos et al., 2009). Second, young children must learn to understand what they are listening to (Hoover & Gough, 1990). The primary method for developing strong oral language skills is exposure to language in children's daily lives through participation in language-rich conversations with adults and other children. However, structured activities such as storytelling, discussions about stories, shared reading, dramatic play, and word plays can also help children develop their oral language skills (Roskos et al., 2009).

Print awareness consists of knowledge about the nature of print (Enz & Morrow, 2009). For example, children need to know how to hold a book properly, understand that the text is read (as opposed to pictures), and identify the important

elements of a book such as the title and author. Furthermore, children should understand that text is read from left to right and top to bottom, a book is read from front to back, and know the names of letters. Much of print awareness is developed naturally as children are exposed to adults and older children reading texts. However, parents and teachers can also purposefully teach concepts of print awareness by pointing out key concepts of print as they are reading with children.

Phonemic awareness is the skill of being able to identify the sounds in spoken words. For example, the word *dog* is made up of the sounds /d/ /o/ and /g/. Phonemic awareness helps children recognize that it possible to break words into smaller units of sound. Phonemic awareness is the basis for reading because each sound identified through phonemic awareness is represented by a letter or letter combination (Morrow, 2005; Pang, Muaka, Berhendt, & Kamil, 2003). Thus, the skill of phonemic awareness is a prerequisite skill for learning sound-symbol correspondence – called phonics – that is necessary for reading (Morrow, 2005). Phonemic awareness can be taught by short five-minute group discussions using a playful game format where teachers guide children to identify the first and last sounds in words, manipulate sounds in words by adding or removing sounds, or rhyming words (Tompkins, 2010).

Reading fluency is the ability to read a text accurately, quickly, and with expression (National Reading Panel, 2000). This means that a reader can recognize familiar words automatically and without conscious thought, and can quickly identify unfamiliar words (Tompkins, 2011). Reading fluency is important because quickly and accurately reading words allows the reader to spend more attention on understanding what is being read instead of spending time to decode each word in a text (Pang et al., 2003). A reader is identified as fluent if he or she can read at least 100 words per minute (Tompkins, 2011). Reading fluency can be taught by helping children learn to automatically recognize high-frequency words, also called sight words. These are the most common words that appear in texts, such as *the*, *and*, and *a* (Umolu & Mallam, 1985). Additionally, reading fluency is developed by practice reading and re-reading a text.

Comprehension is defined as extracting and constructing meaning from a text (RAND

Reading Study Group, 2002). Simply put, this means understanding the message of a text (Pang et al., 2003). Comprehension is the essence of reading (National Reading Panel, 2000). Indeed, correctly pronouncing words in a sentence does not mean that a reader understands the meaning that is communicated by that sentence. Comprehension is an active process that requires the reader to use his or her knowledge of vocabulary words as well as think and reason about the overall message that the text is communicating (Pang et al., 2003). This study was conducted with primary one pupils who had not yet developed reading fluency. Therefore, listening comprehension, which requires individuals to understand a message communicated orally, was used to measure comprehension in this study.

In summary, the two critical aspects of learning to read, that children begin to learn to read very early in life and that there are many different skills working together when reading a text, have implications for instruction in early childhood classrooms. First, even before children are considered “ready” to learn how to formally read text, teachers can be providing strategic instruction in emergent literacy skills as a foundation for future reading success. Second, the teaching of reading requires purposeful, planned instruction in a variety of skills, particularly the skills of oral language, print awareness, phonemic awareness, reading fluency, and comprehension.

## 2. Purpose of Study

The purpose of this study was to evaluate the reading skills of pupils in primary one in government schools in Jos Metropolis. It is important to know which reading skills young pupils have mastered and which reading skills still need improvement so that teachers in early childhood classrooms can target instruction in those particular areas that are still weak. Specific objectives of the study include the following:

- Identify the level of performance in oral language of primary one pupils in Jos Metropolis government schools.
- Identify the level of performance in print awareness of primary one pupils in Jos Metropolis government schools.
- Identify the level of performance in phonemic awareness of primary one pupils in Jos

- Metropolis government schools.
- Identify the level of performance in reading fluency of primary one pupils in Jos Metropolis government schools.
- Identify the level of performance in listening comprehension of primary one pupils in Jos Metropolis government schools.

## 3. Research Questions

The research questions that guide the study are as follows:

- What is the level of performance in oral language by primary one pupils in Jos Metropolis government schools?
- What is the level of performance in print awareness by primary one pupils in Jos Metropolis government schools?
- What is the level of performance in phonemic awareness by primary one pupils in Jos Metropolis government schools?
- What is the level of performance in reading fluency by primary one pupils in Jos Metropolis government schools?
- What is the level of performance in listening comprehension by primary one pupils in Jos Metropolis government schools?

## 4. Methods

### 4.1 Research Design

This study used a descriptive research design. Descriptive designs are used to develop careful descriptions of educational phenomenon (Gall, Gall, & Borg, 2003). This research study was designed to describe the level of performance of primary one pupil in Jos Metropolis government schools on five key foundational skills for reading: oral language, print awareness, phonemic awareness, reading fluency, and listening comprehension. The data for this study were taken from the pre-test results of a larger experimental research study that examined the effect of a whole-language approach intervention on primary one pupils’ reading skills.

### 4.2 Participants

The target population for this study included pupils in primary one at government schools in

Jos Metropolis. In the first stage of sampling, five government schools in Jos were selected. At the second stage of sampling, a target of 40 pupils in each school were selected to participate in the study, but not all pupils in every school completed the pre-test, so the total sample size for this study was 185 pupils. There were slightly more female (58%) than male (42%) pupils in the study and the average age was 7.50 years (SD = 1.59).

### 4.3 Instruments

A one-on-one reading assessment was developed by the researchers to measure each of the five foundational reading skills. Oral language was measured by one subtest with ten simple questions that pupils had to answer. Because fluency in any language, not just English, has been found to improve reading skills (Edele & Stanat, 2016), pupils were allowed to respond either in English or Hausa. For example, one question was, "How old are you?" Any reasonable answer was marked correct.

Print awareness was measured by three subtests. For the first subtest entitled Print Awareness, the teacher presented a book to the pupil, and the pupil was asked ten questions to demonstrate their awareness of print conventions. For example, the pupil was first asked to point to the title of the book. Another item asked the pupil to demonstrate knowledge of reading text from left to right. The other two subtests, Upper Case Letters and Lower Case Letters, asked pupils to correctly identify the 26 letters of the alphabet. Letters were printed on small pieces of cardboard and were randomly shuffled. Pupils received one point for each letter they correctly identified.

Phonemic awareness was measured by one subtest with ten items that asked pupils to identify sounds within words. For example, pupils were asked, "What is the first sound in the word dog?" Pupils were scored as correct if they identified the correct sound.

Reading fluency was measured by two subtests. In the first subtest, the pupil was given a list of the 100 high frequency words in English (Umolu & Mallam, 1985). Each pupil was then given 60 seconds to read as many words as they could. In the second subtest, the pupil was given a reading passage with 118 simple words. They were given three minutes to read as many words as they could. The final score reflected the number of words correctly read in the given timeframe.

Listening comprehension was measured by two subtests with ten items each. For both subtests, pupils were asked to answer questions based on their understanding of a simple story. In the first subtest, Comprehension During Reading, pupils were read one or two sentences at a time of a traditional story about a rat who helped a lion. After one or two sentences, the pupil was asked a question to test their understanding of those few sentences.

In the second subtest, Comprehension After Reading, the teacher read half of a story about a city and village mouse who each visited the other in their home. Halfway through the passage, pupils were asked five questions to assess their understanding of the passage. At the end of the passage, five more questions were asked for a total of ten questions.

### 4.4 Procedure for Data Collection

Each pupil was tested individually in a quiet location in April, at the start of the third term of the academic year. The teacher first introduced him or herself to the pupil, and engaged in a small conversation to make the pupil feel comfortable. Then the teacher said that he or she wanted to play a game with the pupil. Once the pupil was ready, then the assessment began.

In order to avoid the fatigue effect, the reading assessment was administered on two separate days. On the first day, pupils completed the following subtests: Oral Language, Print Awareness, Upper Case Letters, Phonemic Awareness, and both Reading Fluency subtests. On the second day, pupils completed the Lower Case Letters and both listening comprehension tests. To ensure that low performing pupils did not get frustrated, the teachers stopped each subtest after a pupil answered three items incorrectly and then moved to the next subtest.

### 4.5 Method of Data Analysis

To answer the research questions, the overall performance was calculated through mean scores for each subtest. These mean scores were then divided by the maximum possible score for that subtest to get the average percentage of items correct. This percent correct was then converted to a letter grade based on the typical scoring scale of 70% and above as an A, 60-69% as a B, 50-59% as a C, 45-49% as a D, 40-44% as an E, and 39% and below as an F.

A second way to analyse the performance of pupils on reading skills is to consider how many pupils would have passed each subtest. As such, 40% was considered a passing score on each subtest. The frequency and percentage of pupils who passed each subtest was calculated. Furthermore, the frequency and percentage of pupils who earned an A grade (scored 70% or higher on the subtest) was also calculated.

**5. Results**

The first research question asked, what is the level of performance in oral language by primary one pupils in Jos Metropolis government schools. The results are presented in Table 1. As can be seen from Table 1, pupils performed quite well on oral language, which corresponds to the average grade of a strong A. This means that the

pupils in primary one government schools in Jos can communicate well using oral language. As seen from Table 2, almost all of the pupils passed the oral language test, and 90% scored an A grade.

The second research question asked, what is the level of performance in print awareness by primary one pupils in Jos Metropolis government schools. This question was answered by the subtests Print Awareness, Upper Case Letters, and Lower Case Letters. As can be seen from Table 1, pupils performed quite well on the Print Awareness subtest, scoring an average of a B. Table 2 shows that over half of the pupils scored an A grade on Print Awareness. Performance on Upper Case and Lower Case Letters was slightly lower, averaging a C grade on both subtests (see Table 1). From Table 2, slightly more than half of

Table 1. Average Performance on Reading Skills.  
Maximum

Subtest	Score	Mean	Standard Deviation	Mean Percent Correct	Mean Grade
Oral Language	10	8.71	1.58	87.14%	A
Print Awareness	10	6.72	3.48	67.24%	B
Upper Case Letters	26	14.64	9.53	56.30%	C
Lower Case Letters	26	13.52	9.83	51.99%	C
Phonemic Awareness	10	2.41	3.49	24.11%	F
Fluency: Sight Words	100	2.20	3.74	2.20%	F
Fluency: Passage	118	2.69	5.61	2.28%	F
Comprehension During Reading	10	3.64	3.81	36.39%	F
Comprehension After Reading	10	2.87	3.35	28.72%	F

Table 2. Frequency and Percentage of Pupils Who Performed Well

Subtest	Passed		A Grade	
	Frequency	Percent	Frequency	Percent
Oral Language	182	98.38%	168	90.81%
Print Awareness	135	72.97%	116	62.70%
Upper Case Letters	110	59.46%	83	44.86%
Lower Case Letters	104	56.22%	74	40.00%
Phonemic Awareness	47	25.41%	28	15.14%
Fluency: Sight Words	0	0.00%	0	0.00%
Fluency: Passage	0	0.00%	0	0.00%
Comprehension During Reading	76	41.08%	50	27.03%
Comprehension After Reading	60	32.43%	36	19.46%

The pupils passed the two sub-tests on letters, and slightly under half earned an A. Thus, pupils are quite familiar with the conventions of print, but still have room for improvement on knowledge of letters.

The third research question asked, what is the level of performance in phonemic awareness by primary one pupils in Jos Metropolis government schools. The data in Table 1 demonstrate that pupils performed quite poorly, averaging only about two out of ten items correct on phonemic awareness. In Table 2, only one out of four pupils passed the phonemic awareness subtest.

The fourth research question asked, what is the level of performance in reading fluency of primary one pupils in Jos Metropolis government schools. This research question was answered by two sub-tests that measured the ability to read high-frequency sight words and the ability to read a passage. Table 1 demonstrates very low performance in reading fluency, whereby most pupils could only correctly identify two high frequency sight words out of 100 and only read two words in a passage. Table 2 supports this

conclusion with no pupils passing the two reading fluency subtests.

The final research question asked, what is the level of performance in listening comprehension by primary one pupils in Jos Metropolis government schools. This research question was answered by performance on two sub-tests: comprehension during reading and comprehension after reading. Performance on listening comprehension was also very poor, with pupils answering only three or four items correct on both subtests. Only 41% of pupils passed the comprehension during listening subtest and only 32% passed the comprehension after listening subtest.

**6. Discussion**

The purpose of this study was to evaluate the reading skills of pupils in primary one in government schools in Jos Metropolis. The results demonstrated that the pupils were proficient in oral language and conventions of print. Many pupils also performed well in knowledge of upper case and lower case

letters. However, performance in phonemic awareness, reading fluency, and listening comprehension was appallingly low.

Research has shown that the ability to successfully read requires children to integrate many different skills, particularly those skills evaluated in this paper (National Institute for Literacy, 2008; National Reading Panel, 2000). Because the children evaluated in this paper demonstrated very poor performance on three of the five important reading skills, these children are at high risk for reading failure and, as a result, poor academic performance, lower paying jobs, and higher risk for criminal activities (National Institute for Literacy, 2008; Ritchie & Bates, 2013; Snow et al., 1998). Even though pupils in primary one at government schools currently demonstrate low performance on reading skills, there is still hope because reading skills are quite receptive to instruction. Indeed, Oyetunde, Ojo, Korb, and Babudoh (2016) found that a simple eight week literacy intervention program can greatly enhance these pupils' reading skills.

## 7. Recommendations

This study found that pupils in primary one government schools in Jos Metropolis need considerable improvement in the reading skills of phonemic awareness, reading fluency, and listening comprehension and, to a lesser extent, recognition of letters. As such, the following recommendations are made:

- Phonemic awareness can be improved by short five to ten minute playful discussions with the pupils. Phonemic awareness activities include asking pupils to identify sounds in words (e.g., "What is the first sound in the word *mango*?"), categorize sounds in words (e.g., "What word does not start with the same sound as the others: *mama*, *mango*, *orange*, and *man*?"), and substituting sounds (e.g., "If I add the /b/ sound to the word *and*, what word do I get?") (Tompkins, 2011). Every
- day, teachers in early childhood classrooms should lead group
- discussions that require pupils to identify sounds in words to foster their phonemic awareness skills.
- Reading fluency can be developed by teaching children to quickly identify high- frequency words. Researchers report that there are 100 words that are used most frequently in reading, accounting for more than half of the words that children write (Tompkins, 2011). Therefore, teaching children to quickly identify high frequency words will foster reading fluency. One strategy to improve children's ability to quickly recognize sight words is to post the high frequency words on the wall of the classroom, called a "Word Wall," and frequently ask children to identify the words throughout the day.
- Children improve their comprehension skills by listening to and discussing stories. Therefore, parents and teachers should frequently tell children stories, and then engage in a lively discussion about the characters, setting, plot, and theme after the story. Dialogic reading is another strategy to help children improve comprehension skills. In this teaching method, a parent or teacher reads a storybook out loud to a child, but the reading reflects a dialogue more than a simple storytelling (Whitehurst, Arnold, Epstein, Angell, Smith, & Fischel, 1994). The parent or teacher asks the child open-ended questions about the characters or plots in the story to help the child participate in the story. In this way, the parent or teacher enables the child to tell the story, which improves the child's understanding of the story.
- Children can learn their letters when teachers present one letter a week throughout the school year. Children can practice identifying and writing both the lower case and capital letter, as well as identifying words that start with the sound of that letter.

## 8. Conclusion

Reading is a complex process that requires many skills to work together. Children start learning the foundational skills necessary for reading before they are able to recognize words from a text. This study found that pupils in primary one government schools in Jos Metropolis were proficient in oral language and conventions of print. Many pupils also performed well in knowledge of upper case and lower case letters. However, performance in phonemic awareness, reading fluency, and listening comprehension was appallingly low. Therefore, teachers need to intentionally engage in instructional activities that foster phonemic awareness, reading fluency, and listening comprehension.

## References

- Chris-Okafor, J. (2014, February). *Read-Aloud*. Paper presented at the Foundations Academy Teachers Conference, Jos, Nigeria.
- Edele, A., & Stanat, P. (2016). The role of first-language listening comprehension in second-language reading comprehension. *Journal of Educational Psychology, 108*, 163-180.
- Enz, B. J., & Morrow, L. M. (2009). *Assessing preschool literacy development: Informal and formal measures to guide instruction*. Newark, DE: International Reading Association.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). Boston: Allyn and Bacon.
- Greaney, V. (1996). Introduction. In V. Greaney (Ed.), *Promoting reading in developing countries: Views on making reading materials accessible to increase literacy levels* (pp. 1-4). Newark, DE: International Reading Association.
- Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and Writing, 2*, 127-160.
- Morrow, L.M. (2005). *Literacy development in the early years: Helping children read and write*. Boston: Pearson Education.
- National Institute for Literacy. (2008). *Developing early literacy: A scientific synthesis of early literacy development and implications for intervention*. Jessup, MA: Author. Retrieved from <http://lincs.ed.gov/publications/pdf/NELPReport09.pdf>
- National Reading Panel. (2000). *Teaching children to read*. Washington, DC: National Institute of Child Health and Human Development.
- Oyetunde, T. O. (2009). *Beginning reading scheme: Empowering teachers to help their pupils become good readers*. Jos, Nigeria: LECAPS.
- Oyetunde, T. O., Ojo, G., Korb, K. A., & Babudoh, G. (2016, June). *Enhancing reading and literacy instructional practices of primary school pupils for improved quality of education in Jos, Plateau State, Nigeria*. Paper presented at the Canada International Conference on Education (CICE-2016), Toronto, Canada.
- Pang, E. S., Muaka, A., Bernhardt, E. B., & Kamil, M. L. (2003). *Teaching reading*. Brussels, Belgium: International Academy of Education.
- RAND Reading Study Group. (2002). *Reading for Understanding: Toward an R&D program in reading comprehension*. Santa Monica, CA: RAND.
- Ritchie, S. J., & Bates, T. C. (2013). Enduring links from childhood mathematics and reading achievement to adult socioeconomic status. *Psychological Science, 24*, 1301-1308.
- Roskos, K.A., Tabors. P.O., & Lenhart, L.A. (2009). *Oral language and early literacy in preschool: Talking, reading and writing*. Newark, DE: International reading Association.
- Roth, F. P., Speece, D. L., & Cooper, D. H. (2002). A longitudinal analysis of the connection between oral language and early reading. *The Journal of Educational Research, 95*, 259-272.
- Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Strickland, D. S. (2010). Introduction. In D. S. Strickland (Ed), *Essential readings on*

- early literacy* (pp. 1-9). Newark, DE: International Reading Association.
- Tompkins, G. E. (2010). *Literacy for the 21st century: A balanced approach* (5<sup>th</sup> ed.) Boston: Pearson Education Inc.
- Tompkins, G. E. (2011). *Literacy in the early grades* (3<sup>rd</sup> ed.). Boston: Pearson Education Inc.
- Umolu, J. J., & Mallam, W. (1985). Use of an informal reading inventory for reading assignment of primary school children in Nigeria. *Journal of U. K. Reading*, 19, 173-176.
- Wagner, D. A. (2000). *Literacy and Adult Education*. Thematic study for the World Education Forum, Education for All 2000 Assessment. Paris: UNESCO.
- Whitehurst, G. J., Arnold, D. S., Epstein, J. N., Angell, A. L., Smith, M. & Fischel, J. F. (1994). A picture book reading intervention in day care and home for children from low-income families. *Developmental Psychology*, 30, 679-689.



**Part Four**  
**Creative Thinking**





## Critical Thinking Motivation Strategies as Innovative Classroom Practices for Sustainable Environmental Development in South Western Nigeria

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**Abstract.** Developing countries such as Nigeria started experiencing serious and complex environmental problems in the 1980s. Some of these problems include: over-population, pollution, unchecked industrialization, abuse of natural resources, flooding, erosion, solid waste disposal, desertification and drought. Thus, research in science education has continued to seek for more effective ways of teaching science in order to ensure environmental sustainability. Therefore, this study examined critical thinking motivation strategies as innovative classroom practices for sustainable environmental development in Southwestern Nigeria. The study adopted pretest-posttest control group quasi-experimental design. Four hundred and fifty one (451) SS2 students from six purposively selected senior secondary schools in southwestern Nigeria were used for the study. The schools were randomly assigned to critical thinking motivation strategies (Pre-theoretic Intuition Quiz and Puzzle Based Learning) and control. Instruments used included: Instructional Guides for Teachers; Students' Environmental Practices Scale ( $r=0.82$ ), and Assessment Sheet for Evaluating Research Assistants. Two null hypotheses were tested at 0.05 level of

significance. Data collected were analysed using ANCOVA and Scheffe post hoc test. Treatment had significant main effect on students' environmental practices ( $F_{(2,438)} = 363.48$ ;  $p<0.05$ ). Pre-Theoretic intuition quiz enhanced practices scores ( $\bar{x} = 65.34$ ) than PBL ( $\bar{x} = 59.18$ ) and Control ( $\bar{x} = 48.33$ ). Pre-theoretic intuition quiz and Puzzle-based learning strategies improved students' practices towards sustainable environmental development in Southwestern Nigeria. Based on the findings, the study recommended that Pre-Theoretic Intuition Quiz and Puzzle-Based learning strategies should be adopted as viable strategies for the study of environmental pollution and conservation of natural resources.

**Keywords:** Pre-theoretic intuition quiz, Puzzle-based learning, sustainable environmental development, Southwestern Nigeria

### 1. Introduction

Environmental challenges grow in complexity, intensity and severity as a result of increasing ecological disturbance. The air around is laden with dangerous chemicals arising from industrial

activities. Vast lands have been devastated by indiscriminate dumping of refuse, sewage disposal including application of pesticides on agricultural lands.

Developing countries such as Nigeria in 1980 started experiencing serious and complex environmental problems which include over-population, pollution, unchecked industrialization, over-use of natural resources, flooding, erosion, solid waste disposal problem, desertification and drought (Ajitoni, 2009). The biosphere on which all organisms depend for survival are deteriorating rapidly as a result of the activities of human beings (Gbamanja, 2001). The Ogunpa flood disaster that occurred in Ibadan in 1980 due to the incident of the dumping of waste on streams, ditches, rivers brought environmental degradation into limelight, while concerted efforts about the prevention of environmental problem started in 1988 following the unfortunate incident of the dumping of toxic hazardous wastes at Koko Port in the Delta State of Nigeria (Oduwaye, 2009). This led to the establishment of the Federal Environmental Protection Agency (FEPA) through Decree No 58 of 1988 as amended by Decree 59 of 1992. In 1989, FEPA formulated a National Policy on Environment with an overall goal of achieving sustainable development.

The establishment of the Federal Environmental Protection Agency (FEPA) did not help the situation because of the recent flood disaster that occurred in Lagos on 9<sup>th</sup> of July, 2011 including that of Ibadan on 26<sup>th</sup> of August, 2011 that led to further degradation to the environment. In Ebonyi state, Nigeria, a family of eight died through poisonous gas released from electricity generating set was reported on July 9, 2012 and in Ibadan, loss of life and property after long periods of heavy rainfall that occurred in the first half of 2012 have been reported in prints and electronic media. These occurrence are due to the negative attitude and the practices of releasing carbon monoxide from exhaust of electricity generating set, dumping refuse into streams, ditches, rivers and building of houses and structures along drainages and waterways necessitate the need for our environment to be safe and allows all living things to have good

access to air and water that maintain as well as promote good health (Moronkola, 2003).

Knapp & Benton (2006) noted that education is supposed to communicate effectively to the public including the nature and magnitude of the environmental problems, and array of alternatives available for their solution and sufficient insight towards the right attitude and sustainable use of environmental resources must be emphasized in environmental education. Adebile (2002) was of the opinion that teachers who wish to impact the knowledge including magnitude of these environmental problems must employ metacognitive (ability to monitor, use and control thinking skills) teaching strategies.

It has also been observed by researchers like Olagunju, (2002) and Youssef (2004) that the foundations of pre-adult behaviour are formed during childhood and this govern behaviour throughout adult life. At Secondary school level, it is necessary to develop the right environmental knowledge that will improve achievement in environmental concepts including the right attitude and practices for maintaining and promoting sustainable environment.

The National Policy on Education (2013) makes it compulsory for all students to offer at least a science subject at the senior secondary school. Biology is the most preferred subject and chosen by many science and non science students (Abubakar, 2001).

There seems to be consensus of opinions among science educators concerning the important role played by instructional strategy adopted as a classroom variable in affecting students' practices towards environmental concept in Biology (Ige, 2001), Nwozu, (2003) and (Olagunju, (2002). It is therefore necessary to consider the effects of critical motivation strategies (Pre-Theoretic Intuitions Quiz and Puzzle-Based learning) on student's practices towards Environmental Education concepts in Biology

The Pre-Theoretic Intuitions Quiz strategy may be used by an instructor to ask questions in order

to excite feedback aimed at getting students to both identify and assess their own views on a concept thereby correcting the misconceptions on the concept in order to allow new information to be learnt. The strategy has not occurred on any regular basis in most middle, junior high, and senior high schools due to lack of teacher knowledge, lack of materials, class size and competing demands such as emphasis of tests, cover. Many Environmental Education concepts such as ecology, pollution, conservation techniques and population are found in Biology of the West African Senior Secondary Certificate Examination /National Examination Council/ Senior Secondary Certificate Examination syllabuses. age of textbook content, and required academic content (Kirschner, Sweller & Clark, 2006).

The Pre-Theoretic Intuitions Quiz sometimes called Concept inventories have been developed in physics (Ding, Chabay ,Sherwood & Beichner, 2006, Chemistry, (Wright,1998), Astronomy (Hake,1998), Basic-biology (D'Avanzo,2008),(D'Avanzo, Anderson, Griffith,& Merrill, 2010),Natural selection (Nehm & Schonfeld,2008,2010) Genetics (D'Avanzo,2008), Engineering.(Klymkowsky, Underwood, & Garvin-Doxas, 2010) and Geosciences (Nehm & Schonfeld ,2008 , 2010).

Kendall, Parks & Spencer (2008) noted that Puzzles are important resources to introduce new ideas to pupils and a great way to get pupils excited about learning new ideas and concepts. Scott,(2006) recognize the following ways to use Puzzles-based instructional strategy in Education which include Classroom resources, Arts and craft,, introducing new ideas, illustrating strategies, physical manipulation, public event, skill testing, problem posing and original research. Evidence abounds that Puzzle-based instructional strategy in teaching and learning of science education in Korean Universities improved understanding of abstract concepts and develop problem-solving abilities in students (Anany& Mary 2002).According to Kendall et al (2008), Puzzle-based learning engages students with materials more than passive review and its use made learning more

exciting thereby leading to the achievement of desired learning outcomes.

It has also been observed by Youssef (2004) that the foundations of pre-adult practices toward the environment are formed during childhood and that these practices govern behaviour throughout adult life. Olagunju (2002) supported this view when asserting that any strategy in Environmental Education that will be successful should aim at developing positive environmental actions among people, seek to stimulate people's awareness about their behavioural patterns and how best to get involved in pollution management activities and a development of a training programme that goes beyond theory but incorporates practical activities.

It has been suggested that a consideration for practical solutions for the conservation of all environmental resources in a sustainable manner will be of national interest because the majority of Nigerians will benefit from an improved environment (Ajiboye & Olatundun, 2010).To this end, good environmental practices is necessary because environmental degradation, if not checked, can have great impact on natural resources, human health and ecosystems with adverse consequences for the present and future generations of Nigerians (Oduwaye,2009).

Researchers have come up with different findings on the effect of gender on learning outcomes. While some found no significant differences based on gender (Chukwuka (2005). They individually reported that males perform better than their female counterparts in science subjects. Aremu (2005) also reported significant effect of gender on learning outcomes in favour of the male students.

## 2. Statement of the Problem

The prevailing poor environmental practices for sustainable development suggests that critical thinking is necessary to approach these environmental problem encounter in our environment However, it is necessary to carry out a study using critical thinking motivational strategies where students will be equipped with the instructional materials they needed for thinking activities as they engage in thought that can ascertain its effect on sustainable environmental development in the country..

Literature did not indicate that a study that employed two modes of critical thinking strategies in teaching Environmental Education concepts in biology that will expose students to a higher thinking order to promote in them right environmental practices for sustainable development in Nigeria.

This study examine critical thinking motivation strategies as innovative classroom practices for sustainable environmental development in southwestern Nigeria It also examined the moderating effect of gender of the students on environmental practices for sustainable development in Nigeria.

### 3. Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

H<sub>01</sub>: There is no significant main effect of treatment on students' Environmental practices

H<sub>02</sub>: There is no significant main effect of gender on students' Environmental practices.

### 4. Theoretical Framework

Constructivist, as a learning theory, the roots of which can be found in the works of Piaget and Vygotsky, can be traced back to decades, while the actual application of the theory is relatively new (Richardson, 2003). Research shows that good pedagogical practices are more likely when including a constructivist approach as compared to a mere traditional approach to education (DiEnno & Hilton (2005); Muller, Sharma & Reimann, 2006). Constructivist teaching methods are based on constructivist learning theory. Along with John Dewey, Jean Piaget (1954) researched childhood development and education. Their theories are now encompassed in the broader movement of progressive education. . Most of these methods rely on some form of guided discovery where the teacher avoids most direct instruction and attempts to lead the student through questions and activities to discover, discuss, appreciate and verbalize the new knowledge. Constructivist learning theory asserts that knowledge is constructed from a base of prior knowledge. Children are not a

blank slate and knowledge cannot be imparted without the child making sense of it according to his or her current conceptions. Therefore children learn best when they are allowed to construct a personal understanding based on experiencing things and reflecting on those experiences.

The implication of cognitive constructivism, according to Kato & Kammi (2001) is that the child becomes very autonomous and docile, refusing to be governed by reward and punishment. The Pre Theoretic Intuition Quiz and Puzzle-Based learning obtain their roots from this theory.

Questions lead to understanding. Many students typically have no questions. They might sit in silence with their minds inactive as well. Sometimes the questions students have tend to be shallow and nebulous which might demonstrate that they are not thinking through the content they are expected to be learning. If we, as educators, want students to think, we must stimulate and cultivate thinking with questions .By engaging students in The Pre Theoretic Intuition Quiz and variety of questioning that relates to the idea or content being studied, students develop and apply critical thinking skills.

It has also been discovered that children's sense of reality is based on their interactions with the environment and material in it (Piaget, 1954),that is why the use of puzzle-Based learning in which materials and objects from the children's environment enable them to recognize, verify and store experiences for later use.

While the importance of acquisition and recall of basic knowledge remains important, the development of Pre Theoretic Intuition Quiz and Puzzle-Based learning have emerged as equally important, the strategies find balance to facilitate the acquisition of basic knowledge in order to develop and nurture critical thinking in education which is important in the acquisition of great practices towards environmental sustainability.

**5. Methodology**

This study adopts pretest, posttest, control group, quasi-experimental design. It examined possible effects of the Pre-Theoretic Intuition Quiz and Puzzle-Based learning and gender on students’ practices on selected environmental concepts in biology.

**5.1 Selection of Participants**

Four hundred and fifty one Senior Secondary two (SS II) biology students (189 male and 262 females) participated in the study. The subjects were drawn from nine intact classes used for the study. Random sampling technique was used to select the six purposively selected co-educational secondary schools in Ibadan, Osogbo, Lagos, Akure, Ado Ekiti and Abeokuta in Southwestern Nigeria. The selections of schools are based on the following criteria:

- Evidence of presenting students for SSCE Biology examination for at least ten (10) years co-education schools
- Availability of experienced Biology teachers with at least three years teaching experience
- Evidence of SS II students of the schools having been exposed to basic pre-requisite concepts necessary for the understanding of the concepts of the study accessibility of the school

**5.2 Selection of Environmental Education Concepts for the Study**

The two concepts of study were: Pollution and Conservation Techniques. For this study they were subdivided into sub-concepts. (i) Air pollution (ii) water pollution (iii) land pollution (iv) conservation techniques.

The selection of these concepts was based on Senior Secondary Certificate Education Biology syllabus.

**5.3 Research Instruments**

Five instruments constructed by the researcher were used in this study to collect data:

- Students Environmental Practices Scale.(SEPS)
- Teachers Instructional Guide (TIG) on Pre-theoretic Intuition Quiz on Environmental Concepts in Biology (TIGPT)
- Teachers Instructional Guide (TIG) on Puzzle-Based learning on Environmental Concepts in Biology (TIGPB)
- Teachers Instructional Guide (TIG) on Modified Conventional Method on Environmental Concepts in Biology (TIGCM)
- Evaluation Sheet for Assessing Teachers Performance on the use of the Strategies (ESAT) on Pre-theoretic Intuition Quiz in Environmental Concepts in Biology, Puzzle-Based learning in Environmental Concepts in Biology .and Modified Conventional Strategy in Environmental Concepts in Biology.

**5.4 Student Environmental Practices Scale (SEPS)**

The instrument is a property of George Street Research Limited, Edinburgh (2006). It was modified to suit the measurement of practices of senior secondary school students towards environmental pollution and conservation techniques.

**Table 1: Table of Specification for SEPS**

S/N	Concepts/Topics	(+) Positive	(-) Negative	Total No
1	Air pollution	3, 4,5	(2) 1, 2	5
2	Water pollution	(2) 6, 7	(3) 8, 9, 10	5
3	Land pollution	(3)11, 12, 15	(2) 13, 14	5
4	Conservation techniques	(2) 18, 19	(3)16, 17, 20	5
	Total	10	10	20

Cronbach alpha measure after trial testing gave 0.82.

### **5.5 Teachers' Instructional Guides (TIG)**

These are teaching guides prepared by the researcher for the teachers on Critical Thinking Motivation strategies (Pre-Theoretic Intuition Quiz and Puzzle-Based learning) and Conventional strategy. These were used during the training period for the experimental and control groups.

### **5.6 Teachers Instructional Guide on Pre-Theoretic Intuition Quiz Strategy in Environmental Concept. (TIGPT)**

Steps involved in Teachers' Instruction Guide on Pre-theoretic intuition quiz in environmental pollution (TIGPT)

Introduction attracts student's attention and activates their background knowledge through the first tier lower level quiz that reviews prerequisite knowledge or skills.

Presentation involves:

- Teacher asks second-tier higher level quiz to activate students thinking before answering the questions.
- Students think independently between four to six seconds before answering the questions.
- More second-tier upper cognitive level quiz asked generate additional source of information based on answers provided by the students to the quiz.

Evaluation involves:

- Teacher clarifies students view on the concept by assessing students for more critical analysis by allowing students to try out the new concept or skill in class.
- Homework or assignment given for more assessment of the skills developed.

TIGPT was given to two University lecturers in Teacher Education Department to reconstruct some of the guide. The recommendations given were used to reconstruct the guide.

### **5.7 Teachers Instructional Guide on Puzzle-Based Learning Strategy in Environment Concept (TIGPB)**

This is a teaching strategy designed to break down the concept environmental pollution into

sub-topics such as air pollution, water pollution, and land pollution including the conservation techniques.

The puzzle clues and the key used in this research were adapted from [www.TheTeachercorner.net](http://www.TheTeachercorner.net). In this stimulus instrument, the teacher introduces and demonstrate new puzzle. The steps include:

Introduction involves

Attraction of students' attention and activates their background knowledge.

Presentation involves:

- Students identify the key words and sub-concepts using environmental puzzles clues.
- More question posed with the aid of the environmental puzzle clues generate additional source of information based on answers provided by the students.
- Teacher clarifying students view on the concept using the environmental puzzle as basis for clarification.

Evaluation involves:

Assessing students for more critical analysis on the content using the environmental puzzle clues in order to help students to practice individually and develop a deep understanding of the topics they study and improve their thinking abilities.

-Teacher gives homework or assignment for more assessment of the skills developed.

Conceptual framework for developing and evaluating puzzle in Science Education according to Maldonado (2005) was utilized. TIGPB was given to experienced Biology teachers in senior Secondary School and University lecturers in Department of Teacher Education and Science unit to examine its content and face validity. The recommendations given were used to reconstruct the guide.

### **5.8 Teacher's Instructional Guide on Modified Conventional Strategy in Environmental Concept. (TIGCS)**

Steps involved in conventional strategy in environmental pollution including the conservation techniques.

The main features of the guide are general information which consist of subject, topic, the procedure, the teacher, general objective, contents for each week and specific treatment package for each week. The instructional guide

was given to two senior secondary school Biology teachers for review and all their suggestions were incorporated in the guide

### **5.9 Evaluation Sheet for Assessing Teachers' Performance on the use of the Strategies (ESAT)**

This is the guidelines for evaluating performance of the trained teachers on the effective use of these strategies: Pre-theoretic Intuition Quiz (PRESAT), Puzzle-Based learning (PESAT) and Modified Conventional Strategy (MESAT).

## **6. Research Procedure for the Study**

The following time schedule was adopted:

- The first week for visitation to schools to be used for the treatment.
- The next two (2) weeks for training of research assistants
- One (1) week for scrutiny of research assistants to ensure that they are ready to do what they are supposed to do. (During demonstration lesson).
- One (1) week for pre-test (Administration of SEAS, SEAT and SEPS)
- Eight (8) weeks for treatment using the trained research assistants on the listed strategies. These take place simultaneously in all the schools selected.
- One (1) week Posttest (Administration of SEPS)

This makes a total of fourteen (14) weeks.

### **6.1 Training of Research Assistants.**

## **7. Results**

**Ho 1:** There is no significant main effect of treatment on students' Environmental Practices.

Training was done step by step through the explanation on the teaching guides Pre-theoretic Intuition Quiz, Puzzle-Based learning and Modified Conventional strategy.

### **6.2 Administration of Pretest.**

All the 451 students (SSII) in all the nine representative schools used for the experimental and control groups were given pretest on all the evaluative instruments. The pre-test lasted for one week as Students Environmental Practices Scale.(SEPS).

### **6.3 Treatment Procedure**

The treatments were carried out on all the SSII students in all the nine representative schools on the experimental and control groups. During this period, students were taught various aspects of the environmental concepts (air, water, land pollution and conservation of natural resources by the research assistants using the three strategies.

### **6.4 Administration of Posttest**

All the SSII students in the nine representative schools used for the experimental and control groups were given Posttests on all the evaluative instruments. The Posttests was Students Environmental Practices Scale.(SEPS) .

### **6.5 Procedure for Data Analysis**

The data was analyzed using Analysis of Covariance (ANCOVA) of the posttest scores with the pretest scores as the covariates. Multiple classification analysis (Sidak Approach) was used to determine estimated marginal means of different groups. Scheffe post hoc test was used where significant main effects were obtained.

**Table 2: Summary of ANCOVA of Post-Test Practices by Treatment and Gender**

Source	Type II Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	25972.465 <sup>a</sup>	12	2164.374	79.674	.000	.686
Intercept	8119.007	1	8119.007	298.872	.000	.406
PRE-ENVIRONMENTAL-PRACTICES-SCALE	1863.824	1	1863.924	68.614	.000	.135
TREATMENT	19748.129	2.	9874.064	363.478	.000*	.135
GENDER	80.684	1	80.684	2.970	.086	.007
Error	11898	438	27.165			
Total	1518142.000	451				
Corrected Total	37870.949	450				

R Squared = .686 (Adjusted R Squared = .677) \*Significant of P < 0.05.

Table 2 revealed that there was significant main effect of treatment on students’ environmental practices ( $F_{(2,450)} = 363.478$ ;  $p < 0.05$ ; partial eta squared = .135). The effect size of 13.5% was fair. Hypothesis 1c was therefore rejected. This implies that there was significant difference in the environmental practices of students exposed to the treatment.

**Table 3: Estimated Marginal Means of Posttest Practices Score by Treatment and Control Group**

Grand Mean= 57.512

Treatment	Mean	Std Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1.Pretheoretic	65.337	.502	64.350	66.325
2. Puzzle	59.183	.466	58.268	60.098
3.Conventional	48.326	.414	47.512	49.139

Table 3 revealed students in the Pre-Theoretic Intuition Quiz treatment group had the highest adjusted post test mean environmental practices score ( $\bar{X} = 65.337$ ) followed by the Puzzle-Based learning treatment group ( $\bar{X} = 59.183$ ) while students in the Modified Conventional strategy group had the least adjusted mean environmental practices score ( $\bar{X} = 48.326$ ). The grand mean being 57.512. Further, the source of the significant difference obtained in Table 4.9 was traced using Scheffe post-hoc test in Table 4

**Table 4: Scheffe Post-hoc tests Analysis of Post-test Practices Score According to Treatment Group**

Treatment	N	Mean	1.Pretheoretic	2. Puzzle	3 Conventional
1.Pretheoretic	145	65.337		*	*
2. Puzzle	140	59.183	*		*
3.Conventional	166	48.326	*	*	

\*Pairs of group significantly different at P<.05

The result from post-hoc analysis in Table 4 shows that group 1 (Pre-Theoretic Intuition Quiz) was significantly different from Puzzle-Based learning and Modified Conventional strategy strategies in their practices score. Puzzle-Based learning was significantly different from Pre-Theoretic Intuition Quiz and Modified Conventional strategy in practices score, these revealed that the direction of increasing effect of instructional strategy (treatment) on environmental practices was

:Modified Conventional strategy < Puzzle-Based learning < Pre-Theoretic Intuition Quiz.

**Ho 2:** There is no significant main effect of gender on students’ Environmental practice.

From Table 2, there was no significant effect of gender on participants’ environmental practices ( $F_{(1,450)} = 2.970$ ;  $p < .05$ ; partial eta squared = .007) The effect size of 0.7% was negligible.. Hence, hypothesis 3 was not rejected.

## 8. Discussion

This study also revealed higher environmental practice scores for the learners exposed to the Pre-Theoretic Intuition Quiz and Puzzle-Based learning than those in the Modified Conventional Strategy. This implies that those in the Pre-Theoretic Intuition Quiz and Puzzle-Based learning acquired better environmental practices than their counterparts in the control group. This is likely to be as a result of the nature of the critical thinking and evaluation programme developed and implemented in the study which emphasized active learner participation. This corroborates the findings of UNESCO (1998,2001), UNESCO (2004), WWF (2008), Ngothor, Fincham and Quinn (2004), who reported significantly high environmental practices of adults and adolescent learners exposed to their non-formal participatory EE programmes.

## 9. Implications for Findings.

The exposure of the learners to Pre-Theoretic Intuition Quiz and Puzzle-Based learning strategies have been found to positively affects the enhancement of students' environmental Practices. The findings have therefore revealed importance of using teaching strategies that are participatory and learner centered where learners are trained to take control and direct their learning processes and necessary practices needed to solve various environmental problems prevalent in our surroundings.

## 10. Recommendations

In the light of the results and discussion, the following recommendations are made:

- Pre-Theoretic Intuition Quiz and Puzzle-Based learning strategies should be adapted as viable strategies for the study of environmental pollution and conservation of natural resources as they involve the students in monitoring their learning process. These are viable teaching methods for raising achievement, attitude and necessary

practices needed by students in our secondary schools.

- Teachers of biology must endeavour to match teaching strategies with the manner in which students receive and process information. for necessary practices toward resolving environmental problems that may arise from time to time in our country for a sustainable development. Understanding and utilizing the core principles of Critical Motivation Strategies to inculcate in Nigerian youths becomes inevitable because students will be very critical in their thinking and will be able to formulate their own ideas and provide additional source of information from their background and this may have enhanced their attitude towards environment.

## 11. Conclusion

This study is in line with the work of researchers who believe that strategy learning improves content learning and to develop strategies for resolving environmental problems leading to sustainable development in our country, thus as practicing teachers and would-be teachers were trained and became competent in the use of Pre-Theoretic Intuition Quiz and Puzzle-Based learning strategies in learning environmental concepts, their students' practices towards environmental pollution will improved positively, thus making students more critical in their thinking when compared with the traditional conventional teaching method which emphasized teacher activity over pupil involvement.

## References

- Abubakar .M.M. (2001) The Impact of Information Technology on the Biological Science: Journal of Science Education 5(1 and 2)16-20.
- Adegbile, J.A. (2002). Advance Organizers and Secondary School Teacher, Teaching Strategies for Nigerian Secondary Schools. Unpublished Ph.D Thesis, University of Ibadan.

- Ajiboye, J. O. & Olatundun, S. A. 2010. Impact of Some Environmental Education Outdoor Activities on Nigerian Primary School Pupils' Environmental Knowledge. Published in *Applied Environmental Education & Communication*. (9), Issue 3 July 2010, pages 149 – 158.
- Ajitoni, S.O. (2009), The effect of environmental pollution on neighborhood security in Ibadan, Oyo state, Nigeria. Being a paper delivered at the Social Studies Association National Conference, Epe, Lagos, Nigeria.
- Anany, L & Mary, A.P. (2002). Using Puzzles in teaching algorithms. Proceeding of 23 SIGLSE technical symposium on computer science education Antinatti, Kentucky
- Aremu, Ayotola (2005). Gender implications of the use of Video Drama in Environmental Education in Issues in language, Communication and Education. A. Dada, A. Abimbade and O.O. Kolawole eds. 342 – 352.
- Chukwuka.C.N.(2005).The effects of moral dilemma and problem-solving strategies on secondary school students' environmental knowledge, problem-solving achievement and attitudes in selected EE concepts in biology. Unpublished PhD Thesis. University of Ibadan.
- D'Avanzo. C. (2008). Biology Concept Inventories: Overview, Status, and Next Steps. *BioScience* 58: 1079-85
- D'Avanzo C, Anderson CW, Griffith A,& Merrill J. (2010). Thinking like a biologist: Using diagnostic questions help students reason with biological principles. [www.biodqc.org/](http://www.biodqc.org/).
- Ding, L, Chabay, R, Sherwood, B, & Beichner, R (2006). Evaluating an electricity and magnetism assessment tool: Brief electricity and magnetism assessment Brief Electricity and Magnetism Assessment (BEMA). *Phys. Rev. ST Physics Ed. Research* 2, 7 pages.
- DiEnno, C., & Hilton, S. Fall, (2005). High School Students' Knowledge, Attitudes, and Levels of Enjoyment of an Environmental Education Unit on Nonnative Plants. *Journal of Environmental Education*, 37(1), 13-25.
- Gbamanja S.P.T. (2001). Strategies for Teaching Waste Management to Higher Education Students. (P. Okebukola and B.B. Akpan eds) *Strategies for Teaching Waste Management STAN E.E. Project Series* (5). 73-85.
- Ige T.A.,(2001). A Concept Mapping and Problem Solving teaching Strategies as Determinates of Achievement in secondary school Ecology: Ibadan. *Journal of Educational Studies* Volume 1-(1) May 2001.
- Kato Y & Kami .C. (2001). Piaget Constructivism and Childhood Education in Japan, *Prospect*, XXXI(2) 161 - 173
- Kendalls, G., Parks, A & Spoerer (2008). A Survey of NP – complete puzzles, *International Computer Games Association Journal*, 31 (1) pp. 13-84
- Kirschner, P. A., Sweller, J., and Clark, R. E. (2006). "Why minimal guidance during instruction does not work: an analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist* 41 (2): 75–86. doi:10.1207/s15326985ep4102\_1
- Klymkowsky, Underwood, & Garvin-Doxas, (2010) in D'Avanzo C, Anderson CW, Griffith A, Merrill J. 2010. Thinking like a biologist: Using diagnostic questions to help students reason with biological principles. [www.biodqc.org/](http://www.biodqc.org/)
- Maldonado .M.2005 Model for Development, Using and Evaluating Puzzles for Teaching Puzzles: A pathetically neglected, commonly available resource. *Young children* 51 (4) .
- Moronkola, O.A. (2003). Essays on issues in Health. Royal People Nigeria Ltd.
- Muller, D, Sharma, M., & Reimann, P. (2008). Raising cognitive load with linear multimedia to promote conceptual change. *Science Education*, 92(2), 278-296.
- Nehm R & Schonfeld I.S. (2010). The future of natural selection knowledge measurement: A reply to Anderson et

- al. 2010. *Journal of Research in Science Teaching*, 47, 358-362.
- Ngothor, Fincham & Quinn (2004). *Government, Business and Public: The role of EE in creating sustainable Places: EE Research* 10 (3) August; p 318- 319.
- Nwozu, A.A. (2003). *Constructivism as an Innovative Model for Science Teaching: Importance and Extent of use in Secondary schools: Journal of STAN* 38 (1 & 2)
- Oduwaiye, J.O. (2009). *Impact of Computer-Assisted and Programmed Instructions on Pre-service Teachers Learning Outcomes in some Environmental Education Concept in Biology. Unpublished Doctoral Thesis to the Faculty of Education, University of Ibadan, Nigeria.*
- Olagunju A.M (2002). *Environment Education for Sustainable Development in Nigeria. Implication for Biological. Conference Proceeding of STAN on difficult concepts in STM Abeokuta.*
- Piaget, J: (1954). *The Theory of Stages in cognitive development in Green D, Ford M. and Tamed (Ed) 1971. Measurement and Piaget. New York; McGraw*
- Richardson, V. (2003). *Constructivist Pedagogy. Teachers College Record*, 105(9), 1623-1640. Retrieved May 10, 2009, doi:10.1046/j.1467-9620.2003.00303.x
- UNESCO, (2001). *Women and Management in Higher Education: A Good Practice Handbook. (Follow up to the World Conference on Higher Education (Paris 5-9 October 1998).*  
<http://www.unesco.org/education/pdf/singh.pdf>
- UNESCO, (2004). *United Nations Population Fund and Literacy..*  
<http://www.who.ch/whr/>
- Wright J, (1998). *Chem. Ed. 75: 986-992.in*  
 Beichner, R. *Testing student interpretation of Kinematics graphs, Am. J. Phys., 62, 750-762.*
- WWF, (2008). *Education for Sustainable Societies. WWF – Brazil*
- Youssef, R. (2004). *The Effect of Teaching an Environmentally-oriented Science Unit on Students' Attitude and Achievement Science Education International,(1) 15-17.*



## Teaching Moral Character and Creative Thinking in Primary and Secondary Schools for National Development

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**Abstract.** Philosophy as an activity is laden with the inculcation of moral character and creative thinking in the younger one, most especially at the primary and secondary levels of Nigeria Education. If we are to go by the submissions of the various schools of thought, one would realize that their implications on Nigeria Education are geared towards the development of moral character and creative thinking so that the Pupils/students of both the Primary and Secondary may be useful for themselves and the society in which they meet themselves for national development (Bamisaye, 1989). Nevertheless, the teachers who are supposed to be guide to these students seemed not to have lived up to expectation of the society as one can presently observe pupils/students involvement in social vices and uncreative activities like boycotting of lessons, watching and practicing pornography, lies telling, violence, dishonesty, disobedient to the constituted authority and other social vices. All these behaviours according to Fasuyi and Adeleye (2013) could be attributed to lack of moral education and creative thinking on the parts of the pupils/student. Based on this, the paper examines the teaching of moral character and creative thinking in primary and secondary schools for national development. This is looked into from the perspective if Pragmatism.

**Keywords:** Teaching, Moral Character, Creative Thinking Pragmatism and National Development.

### 1. Introduction

Colonization of Nigeria by the British did more havocs than good to this country. It is a fact that before the advent of the colonial masters, Nigeria had its system of education though informally but through this means, knowledge of values, culture, norms, creative thinking were pass from one generation to the others. The method of education the colonial masters adopted for educating our children had the three Rs for reading, writing and arithmetic but the most essential 4<sup>th</sup> R- critical thinking seemed to have been deliberately taken away from the curriculum for teaching the black men especially Nigerians. Students were only taught to read and not to reason.

We are therefore challenged by our British education which, for dubious reasons, educated our children along the lines of reading, writing and arithmetic excluding development of moral character which can be gotten when teaching is morally acceptable to the learners as against memorization and regurgitation of facts and figures introduced by the colonial masters which only reduced children to automations and hindered the national development.

### 2. Teaching of Moral Education in Primary and Secondary Schools for National Development

Teaching is subject to various definitions and interpretations. Classical definitions state that

teaching is imparting of knowledge, training in skill, giving instruction these are among others. Van Dalen and Brittle defined teaching as the guidance of pupils through planned activities so that they may acquire the richest possible from their experience. From the definitions, we could see teacher as, a person who gives instruction, guide and assist students to learn.

The earliest teaching processes or methods involved sharing information about gathering food, providing shelters, making weapons and other tools necessary for their survival, acquiring the values, behaviour and religion rites and practices of a given culture for their development. Parents, elders among others in the society were the earliest teachers since they taught children through instruction, guidance and assistance, the skills and roles they would need as adults. What they taught eventually formed the moral codes that governed behaviour. Majasan (1995) buttressed this statements when he viewed teacher as somebody who has a genuine calling to facilitate the educational process as well as implement policies and reforms which are aimed at moral values and creative thinking among the students.

Teaching involves methods that are morally sound and acceptable to the pupils/student. Moral acceptability in this sense entails that learners must be given freedom to learn since nobody can learn for him (2003). The teacher takes note of this and in doing so, recognizes that learning is a voluntary activity on the part of the learner. All what a teacher need to do is to put the learner in a conducive atmosphere so the he(learner) may learn from what he can experience. This naturally rules out an impression of teaching as drumming knowledge into the brain of the pupils students in the way that one put water into an empty vessel. When something new is taught, the learner assimilates it by himself. It also rules out the possibility of seeing teaching as an activity whereby it is the teacher that moulds the child without the child contributing to the activity. Teaching is a participatory activity in which the learner is free to ask question when necessary. Not only this, teacher should also be ready to give rational explanation to all the statement made during this

interaction. The morally acceptable aspect of teaching is not to force some learning task down a learner's throat, neither is it to cajore him, to use drugs on him or hypnotize him. All such methods have no regard for the person of the learner and do not take into consideration the voluntaries and willingness on the part of the learner. This is because teaching is not the imposition of one person ideas on the other, but rather a product of interaction between the teacher and the learner to share knowledge for natural development.

### **3. Teaching Of Creative Thinking In Primary And Secondary School for National Development**

Isreal Scheffler (1973) conceived teaching as the exercise that involve mental power, engaging in receiving and processing incoming ideas especially to develop the power of perception, discrimination, retention, combination, abstraction and representation. Teaching is expression of any statement made by the teacher in the classroom. In teaching, the contents of the curriculum will be those that involve the pupils/students in exploring and discovering knowledge by themselves for national development.

Of recent, Nigeria librated herself from the bondage of imperialism in teaching and developed the spirit of reflection and inquiring. The policy of education (2004) states the objectives of primary education which is also the foundation of secondary level of education as include:

- (i) To lay a sound basis for scientific and reflective thinking.
- (ii) To give the child opportunities for developing manipulative skills that will enable the child to function effectively in the society within the limits of the child's capacity.
- (iii) Ability to adapt to the child changing environment.
- (iv) Provide the child with basic tools for further educational advancement, including preparation

for trades and craft of the locality, these among other objectives.

All the above formed the foundation upon which the secondary school education rest on. Despite the absence of critical thinking in the Nigeria primary and secondary school curriculum, virtually all the manuals for teaching subjects designed by the National Teachers institute (2006-2008) recommend critical thinking, discussion and openness as the best teaching strategies. Lipman (1988) averred that every subject seems easier to learn when its teaching is infused with open critical spirit and logical vigour. It is observed that at every stage philosophy is being taught as an autonomous and independent discipline. students and teachers never lose sight of it as a model of creative, yet discipline intellectual inquiry.

The National Teacher Institute (2006) maintains that changes in educational goals demand that schools should not only equip the learner with basic knowledge contained in the scheme of work but also ensure 'higher cognitive skills such as self-development and continuous learning skills. If the emphasis is on thinking and reasoning skills then it might be necessary to lay the foundation of education on their discipline which proper subject matter is thinking. One may ask, what is this discipline under discussion? Lipman (1988) writes that philosophy prepares one to think in that the disciplines and it concentrates on the logical conditions that apply generically to thinking in the languages of the discipline in addition to motivating one to think, philosophy makes one to think better by strengthening one's inquiry and concept formation skills.

To arrive at the aforementioned improved reasoning inquiry and concept formation skills, philosophy favours the existence of shared inquiry and dialectical pedagogy between teachers and learners in the classrooms. With this approach, philosophy keeps other disciplines alive by re-animating the thinking that go into their various inception and subsequent formations. The present day exploring and expression of knowledge are quite constructive and recommendable.

To develop critical thinking in the pupils /students, Socrates approaches to teaching in line with the constructivism theory will be our guide. Constructivism as an educational theory is the view that learners construct meaning as he or she learns. The view has consequences that are all two – fold.

We have to focus on the learners in thinking about learning and also that there is no knowledge independent of the meaning attributed to experience constructed by the learners or community of the learners (Adeniyi, 2005). Thus, Socrates as a constructivist, holds that knowledge is not mechanically acquired but actively constructed within the constraints and offerings of the learning environment. Teaching should develop the ability to generate ideas.

#### **4. Evaluation of the Teaching of Moral Character and Critical Thinking in Nigeria Schools from The pragmatists' Perspectives**

Pragmatists generally believe that experience is the source of all knowledge. In this same way, they define teaching in terms of experience. Education comes as a result of experience, it is a lesson learnt from experience. But it is not every experience that is education. The experience that is educative is the type that breads other possible experiences in future. (experience that aid critical thinking). The experience must be productive and must not be a limiting experience. An experience is limiting if it hinders or does not in any way generate a new idea. For example, mere exposition of a fact to a learner without a clear idea of what use to make of this fact could be regarded as a waste of time since that experience cannot generate a new idea for him. Also, showing a photograph of a street in London to a child or a learner just for admiration is a wasteful one since the learner does not know the use to make of the experience. This could be the reason John Dewey cited by Akinpelu (1981) defined education as the continuous reconstruction or reorganization of experience which adds to the meaning of experience, and which increases the ability to direct the course of subsequent

experience. Since knowledge comes through the processing of experience by intelligence using the problem – solving method, the aim of teaching is therefore the development of learner’s ability to deal with future problems. Teaching is the process of developing the habit of problem-solving and there is no limit to the development of this ability. The more varied and the complex the problems that he solves, the greater the growth of his intelligence. Hence teacher must develop this in the learner for national development. Since the problems to be solved arise in the course of daily living, it means that the child is learning as he lives from day to day, and each day’s experience, if it is educative, increases his power of critical thinking. Learning in this is not an activity that should take place in a secluded spot or isolation from the child environment.

Kilpatrick a disciple of Dewey prefaced his own recommendations on teaching with a stringent criticism of many aspects of the formal education of his days. First, the traditional school (which is somehow seems to be in practice in Nigeria education system during the colonial period), treats the immature experience of the youngster as something to be quickly passed over so that he may quickly grow up as an adult. In the traditional school, education becomes a preparation for a future adult life: the child is to be equipped with the skills of an adult, he is given ‘a set of promissory note’ as Dewey graphically described it, which he is to redeem when he reaches maturity, but which unfortunately he may not live long enough to Redeem. He is being educated for the future, being equipped for the life he will live as an adult, while he misses the joy of learning, and the skills of coping with his present problems. Teacher, according to the pragmatists, ought to prepare his student to solve the present problem.

Pragmatists attacked also the content of curriculum that is traditionally the same for every child. It is their believe that the children are all massed together and uniformly taught as though they want the same things and are learning at the same rate. What is more, they are all fed on dead information which, being remote from their life experience, has to be memorized and absorbed. The dead information is parceled

out in little bits of knowledge in the name of disciplines. The relevance of these disciplines and life are not clear to the children. The result is what Akinkuotu(1996) described as little bits of knowledge from which nothing follows. Thus, the experience of the children which is normally an integrated unit is fragmented for him as he changes from one unrelated subject to another unrelated subject and switches his thinking from religion to mathematics at the sound of the bell. Another point is that in that type of school, knowledge is taught to the pupils as the finished product of other people’s experience and students are not allowed to realize that they too can produce knowledge from processing their own experience. The method of the teaching itself is not such as can motivate the pupils. The children learn more from the fear of the teacher who talks down to the students rather than with the students. Since the teacher towers so much above the students and exercises so great an authority, the pupils have no option but to sit quietly, listen passively and absorb the facts passively as a sponge absorbs water. What is most important to the teacher in such a school is the presentation of subject-matter, the psychological conditions of learning, in terms of the child’s interest, ability and stage of development and the sociological factors in terms of the relevance of the subject for the social life of the child and the community are of secondary importance. The child is supposed to see the relevance for his life at some future date, and integrate the fragmented pieces of learning all on his own.

This type of teaching cannot develop moral character of the students. It naturally breeds a type of attitude and disposition that is anti-social. This is because the child is made to learn in isolation and to achieve results only through individual efforts (efforts of the teacher alone) rather than group learning or co-operative efforts, only his individualistic rather than social nature is fostered. Dewey believes that mere absorption of facts and truths is so exclusively individual, an affair that can naturally pass into selfishness.

## 5. Conclusion

The National Policy of Education in Nigeria sees teaching as that process that helps to develop the whole man physically, mentally, morally among others to enable him function in the society in which he finds himself. If this conception of teaching is true then teachers as facilitators need to be morally and creatively developed with emphasis on character and attitudinal uprightness in their handling of educational resources and other critical concerns of teaching profession. Teachers should as well develop critical thinking in the pupils since they (pupils) learn very fast from what they can experience going by the definition given to teaching by Van Dalen and Brittle, cited by Ayeni (2003). Teaching is about nurturing and developing minds and talents so that learners may be useful for themselves and as well contribute to the development of their society. Teacher should know that critical thinking is an effective resources resides in all pupils and students that needs to be nurtured and enhanced through the use of deliberate tools, techniques and strategies without imposing his own ideas in the learners. Creative thinking can also be improved by encouraging the pupils and students to embark on the projects and activities that provide opportunities for the pupils/students while they are learning useful principles and thereby enhance national development.

## References

- Akinkuotu, Y.A (1996). *Modern Approaches to Philosophical Foundations of Education*. Lagos: Goal Educational Publisher.
- Adeniyi, O.R. (2005) constructivism in Education the relevance of kents Epistemology, journal of Philosophy & Nature. University of Cape Coast. Ghana.
- Bamisaye, O. (1998) A Practical Approach to Philosophy of Education. Ibadan : A.M.D. Publisher.
- Fusuyi, A.O and Adeleye, J.O (2013) *Fundamental of philosophy of Education*. Ikere Ekiti. Frank Ayo Press.
- Ayeni, M.A. (2003) *Philosophy of Education: An Introduction*. Ado-Ekiti: Petoa Educational Publishers.
- Majasan, J .A. 1995) *The Teachers Profession. A Manual for Professional Excellence*. Ibadan: Spectrum Book Limited.
- Dewey, J. (1903). *The Child and the Curriculum*. Chicaco: Chicago University Press. Published later in 2001 by Dover Publication.
- Lipna, M. (1988) *Philosophy Goes to School*. VSA Temple University Press
- Federal Republic of Nigeria (2004). *National Policy of Education 4<sup>th</sup> Edition*, Lagos NERDC.
- National Teacher's Institute (2006-2007) *Manual for the Re-Training of Primary School Teachers – English Language*, Kaduna: NTI
- Scheffler, I. (1973) *Reason and Teaching*. New York: Routledge and Kegan Paul.