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Correlation of Teacher Gender and Adoption of Information and Communication Technology for Instructional Delivery in South East, Nigeria

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Abstract: *The integration of information and communication technology (ICT) in teaching across levels has become an issue of major concern. Despite efforts of education authority for increase use of ICT among teachers, slow pace of integration has been observed in Nigeria. One of the factors often put forward as the cause is gender. The present study investigated the relationship between teacher gender and ICT adoption for instructional delivery in secondary schools in South East, Nigeria. One research question and two hypotheses guided the study. The study adopted correlation survey design. The area for the study was South-East, Nigeria. The population was 25,556 teachers in 1251 public-owned secondary schools in South-East, Nigeria. The sample for the study was 400 teachers. The instrument for data collection was Teacher ICT Adoption Questionnaire (TIAQ). A total of 355 copies of TIAQ was collected back and used for analysis. Pearson Product Moment Correlation Co-efficient (r) was used to answer the research question and test hypotheses. The findings showed that that teachers' gender has negative low relationship with adoption of ICT for instructional delivery; and there is no significant difference in the strength of relationship between teacher gender and teachers' adoption of ICT for instructional delivery in secondary schools. The study recommended among others, that conferences, workshops, seminars, symposia should be organized by Ministry of Education to facilitate teachers' adoption of ICT for instructional delivery in secondary schools.*

Keywords: *Teacher gender, ICT, Instructional delivery*

INTRODUCTION

Teachers have realized that the adoption of information and communication technology (ICT) for instructional delivery is no longer a matter of choice. It is either they key in or be dismissed as irrelevant in the 21st century pedagogy. Thus, Nigerian teachers, irrespective of their content knowledge and pedagogical competence, are increasingly under pressure to adopt this curriculum innovation and use ICT for effective teaching and other educational activities (Okoli, 2019). In response to this, Nigeria and Tanzania in collaboration with some international agencies adapted the UNESCO ICT framework which provides standards for what teachers should know and do with the ICT (Hooker, Mwiyeria &Verma, 2011).

It has been observed however that low level of ICT adoption characterizes Nigeria's education system at various levels (Aduwa-Ogiegbaen & Iyamu, 2005; Tella, Tella, Toyobo, Aduka & Adeyinka, 2008; Adomi & Kpangban, 2010). Hence, there has been concern to locate the cause and improve ICT integration in the school system. Certain teacher variables like gender have been considered as factors likely to impede teachers' ICT integration for instructional

delivery. Gender refers to the socially and historically constructed relations between men and women, as opposed to their biological differences (Pereira, 2006). It prescribes roles for the sexes and shapes attitudes and perceptions. In developing countries like Nigeria, gender exerts major influence on people's perception of reality and behavior. It is assumed therefore that teacher gender may constitute a barrier to ICT integration in the school system. The suggestion is that men are more receptive to ICT use than women which may mean that male teachers could be more receptive to ICT use than female teachers (Alampay, 2006). Thus, secondary education environment (as in Nigeria) in which female teachers dominate, ICT integration could be slow.

The question however, is whether the position on gender influence on ICT adoption is a mere opinion or backed by empirical evidence. Previous studies on gender differences in ICT usage have produced divergent results. Yusuf and Balogun (2011) and Obi (2015) found no significant difference in ICT use between male and female teachers. Suki and Suki (2011) moreover found that the two definite beliefs of perceived usefulness and perceived ease of use identified in the technology acceptance model to describe technology adoption, to a large extent have direct links to the attitudes that determine the use of technology irrespective of gender. Adebo, Adekunmi & Daramola (2013) however found significant gender difference in teachers' ICT adoption in secondary schools.

In view of the discrepancies in research findings and the need for accelerated integration of ICT in Nigeria's education system, there is the need to inquire further into the place of teacher gender in ICT adoption for instructional delivery. This study therefore is poised to determine the relationship between teacher gender and adoption of ICT for instructional delivery in secondary schools in South East, Nigeria.

Statement of the Problem

In the 21st century teaching and learning, the ICT remains central for improved learning. It is expected that teachers should adopt the ICT to complement different phases of teaching activities in line with global best practices. Unfortunately, there is a very slow pace of ICT integration in Nigeria's secondary education system. Teachers still hold tenaciously to their old practices and show little or no regard for the deployment of ICT for instructional delivery. Although this has been attributed to different factors, the influence of gender on teacher ICT adoption appears controversial. The problem therefore is: does teacher gender relate to the adoption of ICT for instructional delivery?

Research Question

- What is the relationship between teacher gender and adoption of ICT for instructional delivery?

Hypotheses

- There is no significant relationship between teacher gender and adoption of ICT for instructional delivery ($P>0.05$)
- There is no significant difference in the strength of relationship between teacher gender and adoption of ICT for instructional delivery

METHOD

The study adopted correlation survey design. A correlation survey seeks to establish a relation/association/correlation between two or more variables that do not readily lend

themselves to experimental manipulation (Smiley, 2011). The area for the study was South-East, Nigeria. The area is one of the six geopolitical zones of Nigeria and comprises five states, namely, Abia, Anambra, Ebonyi, Enugu and Imo. The population was 25,556 teachers in 1251 public-owned secondary schools in South-East, Nigeria (Abia, Anambra, Ebonyi, Enugu & Imo) (Universal Basic Education Commission, 2019). The sample for the study was 400 teachers. The sample size was determined using Taro-Yamane (1967) formula. The instrument for data collection was the Teacher ICT Adoption Questionnaire (TIAQ) adapted from Okoli (2019). The TIAQ was administered on teachers by researcher with assistance of principals in sampled schools. A total of 355 copies of TIAQ was collected back and used for analysis. Pearson Product Moment Correlation Co-efficient (r) was used to answer the research question and test hypotheses. The strength or direction of the relationship of the variables was interpreted using Creswell (2009) correlation coefficient scale.

Table 1: Creswell's correlation coefficient scale

Correlation Coefficient	Strength of Relationship
±.70-1.00	Strong/High
±.30-.69	Moderate/Medium
±.00-.29	None (.00) to Weak/Low

RESULTS

Table 2: Correlation matrix of the significance of relationship between teachers' gender and adoption of ICT for instructional delivery

Correlations

		Gender	ICT Adoption
Gender	Pearson Correlation	1	-.150
	Sig. (2-tailed)		.347
	N	355	355
ICT Adoption	Pearson Correlation	-.150	1
	Sig. (2-tailed)	.347	
	N	355	355

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

Table 2 indicates a correlation coefficient of -.15 which is negative and within .00 to .29 correlation coefficient scale of Creswell (2009). This indicates that teachers' gender has negative low relationship with adoption of ICT for instructional delivery in secondary schools. The table also shows a p-value of .35 which is greater than the alpha value of .05. This means that teachers' gender has no significant relationship with teachers' adoption of ICT for instructional delivery in secondary schools. Therefore, the hypothesis that teachers' gender has significant relationship with teachers' adoption of ICT for instructional delivery in secondary schools was accepted.

Table 3: Regression matrix of strength of relationship between teacher gender and adoption of ICT for instructional delivery

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2631.399	2	1315.699	7.376	.061[b]
Residual	62790.359	352	178.382		
Total	65421.758	354			

a. Dependent Variable: Teachers Adoption of ICT
b. Predictors: (Constant), Male, Female

Table 3 indicates a p-value of .61 which is higher than the alpha value of .05. This means that there is no significant difference in the strength of relationship between teacher gender and teachers' adoption of ICT in secondary schools. Therefore, the hypothesis that there is no significant difference in the strength of relationship between teacher gender and teachers' adoption of ICT for instructional delivery in secondary schools was accepted.

DISCUSSION

Teacher gender has non-significant negative low relationship with adoption of ICT for instructional delivery. In other words, gender does not moderate teachers' ICT adoption for instructional delivery. The finding agreed with Yusuf and Balogun (2011) and Obi (2015) who found no significant difference based on teacher gender. This also applies to Suki and Suki (2011) who found that the two definite beliefs of Perceived Usefulness and Perceived Ease of Use identified in technology acceptance model to a large extent have direct links to the attitudes that determine the use of technology. These beliefs apply to every individual irrespective of gender.

The low ICT penetration and integration in the secondary school system in Nigeria therefore is not as a result of female dominance of the teaching profession at that level. While gender may exert some influence on male and female perception of the world and subsequent responses to environmental stimuli, such cannot be said of the adoption of ICT for instructional delivery.

RECOMMENDATIONS

1. Conferences, workshops, seminars, symposia should be organized by Ministry of Education to facilitate teachers' adoption of ICT for instructional delivery in secondary schools.
2. Students should adjust their learning abilities to cope with the teachers' adoption of ICT for instructional delivery in secondary schools.
3. School authorities should provide motivational strategies to encourage teachers' adoption of ICT for instructional delivery in secondary schools.

4. The government through the Ministry of Education should provide relevant ICT facilities that could be adopted by teachers for effective instructional delivery in secondary schools.

Conclusion

The development of ICT competency framework for teachers across the world and in Nigeria particularly, has sent a strong signal that the adoption of ICT for instructional delivery is a matter of necessity for teachers at all levels of education in Nigeria, in line with global best practices. The study has shown that teachers' gender has no significant relationship with adoption of ICT for instructional delivery in secondary schools. As such, other factors likely to impede ICT integration in secondary schools should be explored.

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