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MATHEMATICS TEACHERS' PERCEPTIONS OF UTILIZATION OF ICT FOR TEACHING JUNIOR SECONDARY SCHOOL STUDENTS IN ILORIN, NIGERIA

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ABSTRACT
The utilization of ICT in the classroom has been assumed as the lurking strength of the new technological tools to transform an outmoded educational system. Thus, educational reforms to utilize ICT in the classroom need acceptance and assistance coming from teachers and administrators. This study therefore examined mathematics teachers' perceptions of utilization of ICT for teaching Junior Secondary School Students in Ilorin, Nigeria. This study was a descriptive research of the survey type. A total of 240 mathematics teachers both from public and private junior secondary schools were randomly sampled for the study. A researcher-designed questionnaire was used for data collection. The instrument was duly validated and the reliability index was found to be 0.71 using split half method. The research questions were answered using the frequency and the percentage, while the research hypotheses were subjected to the Chi-square analysis at 0.05 level of significance. Findings revealed that: Mathematics teachers perceived utilization of ICT for teaching Junior secondary school students' mathematics to be positive and influence students' performance; there is significant difference in the perceptions of male and female mathematics teachers on utilization of ICT for teaching Junior Secondary School Students, there is significant difference in the perceptions of Qualified and Not Qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students, there is significant difference in the perceptions of Experienced, Moderately Experienced and Less Experienced mathematics teachers on utilization of ICT for teaching Junior Secondary School Students. Based on the findings from the study, it was recommended among others that provision of adequate ICT tools for mathematics teaching in Junior Secondary Schools should be prioritized for enhanced teachers' perceptions and students' performance in the subject.

Keywords: ICT, Mathematics, Perception, Teachers, Utilization.

INTRODUCTION
Mathematics is of great value in the fields of science and technology, the knowledge of mathematics as a tool for everyday life is important for the existence of any individual and the society at large (Gibbs & Mutunga, 2009). Mathematics can be defined as the science of numbers and space; the language of science and technology (Yusta, Karugu, Muthee, & Tekle, 2016). It is an essential requirement in every field of intellectual endeavour and human development to cope with the challenges of life. It can also be seen as the queen and servant of the school subjects since it cuts across the school curriculum (Yusta, Karugu, Muthee, & Tekle, 2016).

Fajemidagba and Adegoke (2008) defined mathematics as a logical development which is made up of undefined terms, principles of logic and logical conclusions that follow from the hypothesis. According to these scholars, the logical conclusions make no claims concerning absolute truth or falsity. Salman and Adeniyi (2012) regarded mathematics as a foundation on which the whole essence of living revolves and the platform for scientific and technological innovations. Mathematics is much more than a collection of definitions, theories and proofs. It is a richly woven fabric of connections that involves visualizing, imagining, manipulating, analyzing, abstracting and associating idea (Gbolagade, Waheed &Sangoniyi, 2013).

Perception of Mathematics teachers towards the integration and utilization of Information and Communication Technology for teaching will give clues about its essentiality in teaching-learning process. The word perception is a process of translating sensory idea into an integrated analysis of the world around with the present situation based on incomplete and unverified information, perception is equated with reality for most practical purposes and guides human behavior in general (Daramola, 2011). The researcher further stressed that Perception can be seen as a way of understanding issues and the psychological ability to process or use information received.

The study reviewed literature on the importance of ICT utilization and the impact of utilization of ICT on academic performance of secondary schools students. Such studies include that of Al Balawi (2010), Rendall (2001) and Ezekoka (2007). Also, the study reviewed the influence of gender, teaching experience and teachers' qualification on their level of utilization of ICT. Such studies include those of Onasanya, Shehu, Ogunlade and Adefuye (2011) and Tezci (2009) reported that gender plays a role in teachers' use of ICT in teaching. However, Rahimi and Yadollahi (2011) and Oniga and Lai (2008) reported that there is no relationship between ICT use and gender.

On ICT and teachers' experiences, Olagunju and Abiona (2008) revealed that qualified teachers' perception of utilization of ICT in teaching is higher than those of the less qualified teachers. Abdul-Salaam (2010) found that teachers' experience has a significant positive influence on their level of utilization of ICT for teaching as most of the experienced teachers do not know how to integrate ICT into their classroom activities, since experienced teachers result to use of traditional chalk-talk method. From all the studies available to the researcher, there have not been many studies concerning teachers' perception of integration and utilization of ICT on junior school students' performance in mathematics in Ilorin. Hence the study investigated teachers' perception of integration and utilization of ICT on junior school students' performance in mathematics in Ilorin, while variables such as teachers' gender, qualifications and teaching experiences were considered as well.

Purpose of the Study

The main purpose of this study was to investigate mathematics teachers' perceptions of utilization of ICT for teaching junior secondary school students in Ilorin, Nigeria. Specifically, the study investigated:

(i) The perception of male and female mathematics teachers on utilization of ICT for teaching Junior Secondary School Students;
(ii) The perception of Qualified and Not Qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students; and

(iii) The perception of mathematics teachers on utilization of ICT for teaching Junior Secondary School Students based on teaching experiences.

Research Questions

The following research questions were raised and answered in this study:

i. Is there any relationship in the perception of male and female mathematics teachers on the utilization of ICT for teaching Junior Secondary School Students?
ii. Is there any relationship in the perception of Qualified and Not Qualified mathematics teachers on the utilization of ICT for teaching Junior Secondary School Students? and
iii. Is there any relationship in the perception of mathematics teachers on the utilization of ICT for teaching Junior Secondary School Students based on teaching experiences?

Research Hypotheses

The following null hypotheses were formulated in this study:

HO1: There is no significant difference in the perception of male and female mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics.

HO2: There is no significant difference in the perception of Qualified and Not Qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics.

HO3: There is no significant difference in the perception of Experienced, Moderately Experienced and Less Experienced mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics.

METHODOLOGY

The study focused on investigating mathematics teachers' perception of ICT for teaching Junior Secondary School students. The study is a descriptive research of a survey type. The research type was selected as it enables information to be gathered from the selected sample. This type of research involves collecting data based on the opinion, views, available resources, personnel involved and decisions of the respondents based on their gender, qualification and experience. A total of two hundred and forty (240) Mathematics teachers were randomly selected for the study in both public and private Junior Secondary schools in Ilorin, Nigeria. The instrument used for data collection was researchers-designed questionnaire. It was rated on four likert scale of; Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument has two sections: A and B. Section A elicited information on teachers' bio data such as school type, teachers' gender, qualification and years of teaching experience. Section B investigates how mathematics teachers' perceptions of utilization of ICT for teaching Junior Secondary School Students. The three formulated hypotheses were tested using Chi-square statistical package at 0.05 level of significance.

RESULTS

Three research hypotheses were formulated and tested using chi-square at 0.05 significance level. The justification for using chi-square is because the variables are categorical data.

HO1: There is no significant difference in the perceptions of male and female mathematics teachers on the utilization of ICT for teaching Junior Secondary School Students.

Table 1:
Chi-Square analysis of the perceptions of male and female mathematics teachers on the utilization of ICT for teaching

Variable Gender	Agreed Obs (Exp)	Disagreed Obs (Exp)	N	x^2_{Cal}	x^2_{Crit}	df	Sig Value	Remark
Male	128(129.3)	28(26.7)						
			240	189.5	3.84	1	0.05	S
Female	70(69.8)	14(14.2)						

Table 1 shows chi-square analysis of the perceptions of male and female mathematics teachers on the utilization of ICT for teaching. The result shows that chi-square calculated value (x2 Cal=189.5) is greater than chi-square critical value (x2Crit=3.84), which implies that the null hypothesis is rejected. Therefore, there is significant difference in the perceptions of male and female mathematics teachers on utilization of ICT for teaching Junior Secondary School Students.

Ho2: There is no significant difference in the perceptions of Qualified and Not Qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students.

Table 2:
Chi-Square analysis of perceptions of Mathematics Teachers on utilization of ICT for teaching based on Qualification

Variable Qualification	Agreed Obs (Exp)	Disagreed Obs (Exp)	N	x^2_{Cal}	x^2_{Crit}	df	Sig Value	Remark
Qualified	123(125.6)	60(57.4)						
			240	139.95	**3.84**	1	0.05	S
Not Qualified	42(46.3)	15(10.7)						

Table 2 shows chi-square analysis of perceptions of mathematics teachers on utilization of ICT for teaching based on qualification. The result shows that chi-square calculated value (x2 Cal=139.95) is greater than chi-square critical value (x2Crit=3.84), which implies that the null hypothesis is rejected. Therefore, there is significant difference in the perceptions of Qualified and Not Qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students.

HO3: There is no significant difference in the perceptions of experienced, moderately experienced and less experienced mathematics teachers on utilization of ICT for teaching Junior Secondary School Students.

Table 3:

Chi-Square analysis of perceptions of Mathematics Teachers on utilization of ICT for teaching based on Teaching Experience

Variable Teaching Experience	Agreed Obs (Exp)	Disagreed Obs (Exp)	N	x^2_{Cal}	x^2_{Crit}	df	Sig Value	Remark
Highly Exp.	109(110.4)	20(18.6)						
Moderately Exp.	72(68.8)	12(15.2)	240	103.98	5.99	2	0.05	S
Less Exp.	17(13.8)	10(13.2)						

Table 3 shows chi-square analysis of perceptions of mathematics teachers on utilization of ICT for teaching based on teaching experience. The result shows that chi-square calculated value (x2Cal=103.98) is greater than chi-square critical value (x2Crit=5.99), which implies that the null hypothesis is rejected. Therefore, there is significant difference in the perceptions of experienced, moderately experienced and less experienced mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics.

DISCUSSION

The result revealed that mathematics teachers perceived utilization of ICT for teaching junior secondary school students' mathematics to be positive and influence students' better academic performance in the subject. The finding is in disagreement with the finding of Harrison and Rainer (2012) who found out that many of the science teachers were less skilled in computer use and therefore had a negative attitude about it, but the study agreed with the findings of Albirini (2016) who investigated the science teachers' perceptions about ICT integration in teaching and learning in Syrian high schools. The results for the study indicated that science teachers had a positive attitude towards integration of ICT in teaching and learning process. Albirini (2016) also found out that a large number of teachers at the high schools level in Syria show interest in developing their ICT skills and knowledge

The finding of the study also revealed that there is significant difference in the perceptions of male and female mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics. The finding agreed with Oniga and Lai (2008) who reported that males had more positive attitudes towards e-learning than females. They found significant gender variations where males' ratings of perceptions towards computer self-efficacy, perceive usefulness and ease of use and behavioral intention to use e-learning were all higher than those of females. Also, it agreed with the findings of Tezci (2009) and Cooper (2006) who also reported that gender plays a role in teachers' use of ICT in teaching and learning processes. However, the study disagreed with the finding from the study carried out by Rahimi and Yadollahi (2010) that reported no relationship between ICT use and gender.

The finding also revealed that there is significant difference in the perceptions of qualified and not qualified mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics. The finding agreed with the study carried out by Olagunju and Abiona (2008) which

revealed that qualified teachers' perceptions of utilization of ICT in teaching is higher than that of the less qualified teachers. Therefore, teachers' qualification influences their perceptions of utilization and integration of ICT for teaching junior secondary school mathematics.

The finding also revealed that there is significant difference in the perceptions of Experienced, Moderately Experienced and Less Experienced mathematics teachers on utilization of ICT for teaching Junior Secondary School Students' mathematics. This finding from the study did agree with the study carried out by Abdul-Salaam (2010) found that teachers' experience has a significant positive influence on their level of utilization of ICT for teaching as most of the experienced teachers do not know how to integrate ICT into their classroom activities, since experienced teachers result to use of traditional chalk-talk method. Also, Baek, Jong and Kim (2008) claimed that experienced teachers are less ready to integrate ICT into their teaching. Niederhauser and Stoddart (2001) however found no difference between highly experienced and less experienced teachers in the use of ICT in the learning environment.

CONCLUSION

Based on the findings of this study, it could therefore be concluded that mathematics teachers held positive perceptions of the use of ICT in teaching of the subject. Male teachers held more positive perception of the use of ICT in teaching of mathematics than their female counterparts. Also, the less experienced teachers held more positive perception of the use of ICT in teaching of mathematics than the moderately experienced teachers, while the moderately experienced teachers held more positive perceptions of the use of ICT in the teaching of mathematics than the well experienced teachers.

RECOMMENDATIONS

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

i. School authorities should provide adequate ICT tools for mathematics teaching in junior secondary schools in order to enhance students' performance in the subject.

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