Assessment of ICT Teachers' Competence To Implement The New ICT Curriculum In North Eastern Nigeria.

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 Abstract

This study assessed the competence of ICT of rural and urban secondary school ICT teachers for the implementation of ICT curriculum in North Eastern Nigeria. The study looked at the competence of applying ICT technical literacy on the six components of teachers work in the secondary schools. All the one thousand, seven hundred and forty four (1,744) secondary school ICT teachers from the six states of the North Eastern Nigeria participated in the study by responding to close ended questionnaire. The instrument sought information on ICT teachers' policy, curriculum, pedagogy, technology, administration, professional development competences and obstacles to ICT teachers' competences. Data was analyzed through grand mean, standard deviation and percentage. Results reveal that the competence of ICT teachers on policy, curriculum, pedagogy, technology, administration and professional development is low. Obstacles to ICT teachers competences were identified as lack of hardware, software, and financial resources, lack of electricity in most rural schools and insufficient information and experience from teachers in ICT applications. It was recommended among others that ICT should be incorporated in the professional development of teachers and ICT curriculum should be robust enough to enhance teachers job performance in schools.

Keywords: ICT Curriculum, Teachers Competences, Curriculum Implementation, Secondary Schools.

Introduction

Modern societies are increasingly based on information and knowledge (Plessis, 2012). Teachers in institutions of learning should be equipped with information and communication technology (ICT) Knowledge and skills to handle information and adopts a problem solving approach in order to generate knowledge in learners (Akudolu, 2006). ICT teachers competence is very trendy theme and ICT curriculum implementation need core competences which are mandatory for secondary schools teachers in order to keep abreast with contemporary technologies (Bukaluga and Mubika, 2011).

The Implementation of ICT curriculum goes beyond a focus on subject knowledge to explicitly include 21st century skills that are needed to construct new knowledge and engage in lifelong learning. The ability to collaborate, communicate, create, innovate and think critically are vital in ICT Curriculum implementation. (Hanney, Harrison and Wamakote, 2010). Similarly, the successful implementation of ICT curriculum depends on the knowledge and skills of ICT teachers to structure their leaning environment (Chapman and Mahlick, 2004). Ict teacher competence is seen as a crucial component here. It also depends on the extent to which ICT competences have been acquired by teachers to implement the curriculum. The federal and state governments of Nigeria have made computer studies compulsory in the entire curriculum (Hooker, Mwiyeria and Verma, 2011). However, despite the inclusion of computer education in all sectors of education from primary to tertiary education, not significant number of secondary schools are offering the subject which is conspicuous of its absence from their timetables (Adeyinka, Adedegi, Majekodunmi, Lawrence and Ayodele, 2010). A number of obstacles affect the implementation of ICT in Nigeria Secondary Schools. Prominent among other obstacles is lack of ICT teacher competencies for the implementation of ICT curriculum in secondary schools. This study was designed to determine ICT teacher competencies for the implementation of the ICT curriculum in secondary schools

Statement of the problem

The introduction of a new curriculum for secondary schools in 2008 by the Nigeria Educational Research and Development council (NERDC) made ICT compulsory to secondary school students. This brought to fore challenges inherent in the implementation of the curriculum. These challenges include lack of qualified teachers with requisite skills, lack of electricity and computer hardware and software. Other challenges are lack of awareness on the implementation of the curriculum and apathy of teachers to new innovation. ICT teachers' incompetence is always a barrier to the implementation of ICT curriculum in developing countries (pelgrum, 2001). Khan, Hassan and Clement (2012) also observed that Lack of knowledge and skill by ICT teachers is the main hindrances to the implementation of ICT curriculum. This study was conducted to determine ICT teachers' competence to implement ICT curriculum in secondary schools in North Eastern Nigeria.

Purpose of the study

The main purpose of the study was to determine ICT teachers' competence for the implementation of ICT curriculum in secondary schools. Specifically, the objectives were to determine:

1. ICT teachers' competence on ICT policy in secondary schools.
2. ICT teachers' competence to implement in secondary schools ICT curriculum.
3. ICT teachers' pedagogy competence to implement ICT curriculum in secondary schools
4. The competence of ICT teachers on ICT technology for the implementation of ICT curriculum in secondary schools.
5. ICT teachers' administration competence for the implementation of ICT curriculum in secondary schools.
6. The competence of ICT teachers on professional development for the implementation of ICT curriculum in secondary schools.
7. The obstacles to the implementation of ICT curriculum in secondary schools

Research questions
The following research questions were formulated to guide the study:

1. What is the competence of ICT teachers on ICT policy for the implementation of ICT curriculum in secondary schools?
2. What is the competence of ICT teachers' curriculum for the implementation of ICT curriculum in secondary schools?
3. What is the pedagogy competence of ICT teachers for the implementation of ICT curriculum in secondary schools?
4. What is the technology competence of ICT teachers for the implementation of ICT curriculum in secondary schools?
5. What is the ICT administration competence of ICT teachers for the implementation of ICT curriculum in secondary schools.
6. What is the professional development competence of ICT teachers for the implementation of ICT curriculum in secondary schools?
7. What are the obstacles to ICT teachers' competence for the implementation of ICT curriculum in secondary schools?

Conceptual framework
Olakulehin (2007) identifies four broad approaches from the research literature for developing a model for ICT teacher competence in Nigeria. The adoption model depicts an approach continuum whereby the skill of the teachers flow from emerging to applying to infusing to transforming stages of ICT integration. As teacher move through each stage, they develop increase capability and ability to use ICT as a "natural part of the everyday life of the system" (P6). In the emerging stage, the teacher competence development focus is on the use of ICT as an add-on to the traditional curricula and standardized test systems. Teachers and learners are discovering ICT tools and their general functions and uses, and the emphasis is usually on basic ICT literacy and skills.
In the applying stage, the focus is on the development of digital literacy and how to use ICT for professional improvement in different disciplines. This involves the use of general as well as particular application of ICT. In the infusing stage, the teacher development focus is on the use of ICT to guide students through complex problems and manage dynamic learning environments. Teachers are developing the ability to recognize situations where ICT will be helpful, and choosing the most appropriate tools for a particular task, and using these tools in combination to solve real problems.

In the transforming stage, the learning situation is transformed through the use of ICT. This is a new way of approaching teaching and learning situations with specialized ICT tools. Teachers are themselves master learners and knowledge producers who are constantly engaged in educational experimentation and innovation to produce new knowledge about learning and teaching practice.This study adopted the applying stage of the approach which focus on the development of digital literacy and how to use ICT for professional improvement in different discipline. This stage was adopted because of the extent to ICT integration in Nigeria

Review of Literature
The ICT competency framework for Teachers (ICT-CFT) were designed by UNESCO and launched in 2008 to help educational policy-makers and curriculum developers identify the skills teachers need to harness technology in the service of education. The competency standards were developed in cooperation with Cisco, Intel and Microsoft, as well as the International society for Technology in Education (ISTE). The framework was created by crossing three approaches to ICT integration in education (technology Literacy, knowledge Deeping and knowledge creation) with the six components of the educational system(Policy & Vision, Curriculum & Assessment, Pedagogy, ICT Technology, Organization & Administration, and Teacher Professional Development).

The UNESCO ICT Competency Framework for Teachers is a culmination of the attempts of governments, academia, and the private sector to establish universal standards for ICT integration in professional development. The ICT-CFT is global in scope and any country can localize or contextualize the standard to guide and assess teacher competencies for the implementation of ICT curriculum.

Horker, Mwiyeria and Verma (2011b) study reported that policy, curriculum, pedagogy, technology, administration and professional development are very important ICT teachers competencies for the implementation of ICT curriculum in Colleges of Education in Nigeria Achibong, Ogbiji a Anijaobi – Idem (2010), study found that ICT competence for utilizing

ICT for teaching and learning situation among academic staff in universities in Cross River State, Nigeria, is low. The study also further indicated that staff were either competent or very competent in utilization of ICT in all indices measured was below fifty percent (50%) low. The Competency level of staff as shown by the study is still very low.

In a study carried out by Omoniyi and Quadri (2013), majority of teachers in secondary schools do not have the required competence in the use of ICT. Social studies teachers are not competent in majority of the ICT skills such as word processing (WP), data processing (DP) and Telecommunication (TC) and are not familiar with the micrographic competencies at any level of competence (Iwuamadi and Ajeka, 2010). There is significant difference between the mean rating scores of the competency level of male and female social studies teachers in relation to ICT application in secondary schools in Owerri Zone of Imo State (Iwuamadi and Ajeka, 2010).

Yusufu and Balogun (2011), in their study found that majority of students are competent in the use of few basic ICT tools. There was no significant difference between the competence of male and that of female student teachers in the use of ICT. The finding also show that majority of the student teachers lack the skills in various ICT applications and equipment operations that are important to support and enhance their learning experiences and ICT integration in instruction. Majority of student teachers (over 50%) of the university of Ilorin are not competent in the use of ICT equipment. Generally, the study reveal no significant difference between male and female student – teachers in their competence in the use of ICT competence.

In a study conducted by Obakhume (2010), most of the teachers lack knowledge, competence to use ICT to facilitate teaching learning process. Ololube (2006) study revealed that there are significant differences in the effectiveness between professionally trained teachers and untrained teachers in their ICT instructional actual utilization competences. Jegede Dib-Ojerinde and Ilori (2007) in their study revealed that ICT attitude bears significant relationship with and also predict competence. The level of computer literacy of science teachers in Oyo State is low. Their level of utilization of ICT resources was also low (Onasanya, Shehu, and Adefruye, 2011) Male outperform their Female counterpart in both instances although the level is low. Sam (2009) study asserted that majority of in-service teachers lacked competences in core technology areas. Because ICT teachers possession of competence is a necessary prerequisite to implementation of ICT curriculum of a nation, it was deemed necessary by the authors to determine the extent of competence ICT teachers possess to cope with ICT curriculum implementation

Methodology

This study adopted a descriptive survey design. To collect data from teachers, a questionnaire tagged ICT teachers' Competence for implementation of curriculum determination questionnaire (ICTTCICDQ) was used. The questionnaire solicited for information on the technical literacy of ICT teachers' competence. The 43 items questionnaire consisted of eight sections: location of secondary schools, policy, curriculum, pedagogy, ICT technology, administration, professional development and obstacles. The first item requires response on location of school. The items from the six components of the education system were measured on a five point close ended response scale of "Always" to Never". The items of the last section require a response on five point response Likert scale of "Strongly Agree" to Strongly Disagree". The reliability of the questionnaire was determined through a calculation of Cronbach alpha which gave a satisfactory level of 0.83.

Population and sample

Out of 34,851, secondary school teachers in North Eastern Nigeria, all the 1,744 ICT teachers ((post-primary schools Management Boards of the six states, 2012) was utilized for the study. Secondary schools were divided into two strata, with teachers located outside the state and local government headquarters as rural and within as urban.

Data collection and analysis

Questionnaire was administered by six research assistants responsible for each of the six states of North east zone. Ninety six percent (96%) percent of the questionnaire were completed and returned. Data were analysed using Statistical Package for Social Science (SPSS) version 16 Research questions 1 – 6 were answered using grand mean and standard deviation. The real limits of the five points scale were Always -5, Frequently -4, Occasionally-3, Rarely-2 and Never-1. Occasionally with a scale point of 3 has been accepted to be within the range of a competence. Therefore, 2.5 being the lower limit of 3 is the decision point. This means that any overall mean above 2.5 was regarded as high competence, 2.5 as overall mean indicate moderate competence while those below 2.5 were regarded as low competence. Percentage was used to answer research question -7.

Result

Result of data analysis are presented in table and they follow the order in which the specific themes and research questions are raised.

Table 1: Distribution of Respondents by location of schools

Location	Number	percentage
Rural	698	40
Urban	1,046	60
Total	1744	100

Results from table 1 show that 60% of the respondents are urban ICT teachers while 40% are from rural areas.

Research question 1: What is the competence of ICT teachers' on policy for the implementation of ICT curriculum in secondary schools?

Table 2

Means and standard deviations of responses of rural and urban ICT teachers on the competence of policy for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X_1 $N = 698$ X_1	σ_1	X_2 $N_1 = 1,046$ X_2	σ_2	Grand mean	Remark
1.	Aware of National ICT in education policy.	1.99	0.89	1.99	0.89	1.99	low
2.	Aware of school ICT policy.	1.80	1.03	2.22	1.02	2.01	low
3.	Apply national ICT policy in the classroom.	1.70	0.62	2.04	0.78	1.87	low
4.	Apply school ICT policy in the classroom.	2.84	0.83	2.37	0.94	2.60	high
5.	Contribute to share natural vision.	1.80	1.70	2.29	0.85	2.05	low
6.	Contribute to share school vision	2.54	0.92	2.07	1.01	2.31	low
	Overall mean. 2.13					Low competence	

X_1 – Rural ICT teachers
X_2 – Urban ICT teachers

The data shows that the overall mean (2.13) indicate low policy competence by both groups. This means that the competence of policy of ICT teachers to implement ICT curriculum in secondary schools is low .

Research question 2: What is the competence of ICT teachers' on curriculum for implementation of ICT curriculum in secondary schools?

Table 3: Means and standard deviations of responses of Rural and Urban ICT teachers on the competence of ICT teacher curriculum for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X1 $N = 698$ $\overline{X1}$	$\sigma1$	X2 $N1 = 1,046$ $\overline{X2}$	$\sigma2$	Grand mean	Remark
1.	Use tools for course design and lesson planning.	2.07	0.94	2.44	1.16	2.26	low
2.	Use of ICT tools in design of teaching and learning	2.42	0.54	2.41	0.81	2.42	low
3.	Use ICT tools to support students understanding of subjects concepts and their applications.	2.25	0.95	2.25	0.75	2.25	low
4.	Use ICT for formative and summative assessment and to provide student with feedback on progress.	2.21	0.73	2.01	0.88	2.11	low
5.	Use ICT communication and collaboration tools to access and source information and to connect	2.23	0.55	1.66	0.88	1.95	low

S/N		X_1		X_2		Grand mean	Remark
	student to the world outside the classroom.						
6.	Use ICT resources and assisted technologies	3.46	0.50	3.28	0.90	3.37	low
	Overall mean					2.39	Low competence

X_1 is Rural ICT teachers
X_2 is Urban ICT teachers
The data in table 3 shows that the overall mean (2.39) of all items indicate low competence of ICT curriculum competence by both groups of respondents. This shows that the competence of ICT Curriculum of ICT teachers to implement ICT curriculum in secondary schools is low.

Research question 3: What is the pedagogy competence of ICT teachers for the implementation of ICT curriculum in secondary schools?

Table 4: Means and standard deviations of responses of Rural and Urban ICT teachers on the competence of ICT teachers' pedagogy competence for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X_1 $\underline{N}$ = 698		X_2 $\underline{N}$ = 1,046		Grand mean	Remark
		X_1	σ_1	X_2	σ_2		
1.	Use ICT to design teaching and learning unit plans and activities.	1.50	1.00	1.88	0.99	1.69	low
2.	Use ICT to identify complex real world problems and structure them in a way that incorporates key subject matter concepts and serves as the basis of student projects.	1.54	0.50	1.89	1.02	1.72	low
3.	Use ICT to design and implement collaborative project based unit plans and classroom activities.	2.22	1.10	1.80	0.88	2.01	low
4.	Use project based learning and ICT tools to support student thinking and social interaction.	2.01	1.02	2.19	0.97	2.10	low
5.	Use open-ended tools to support student collaboration.	1.99	1.00	1.53	0.86	1.76	low
6.	Use subject specific application to support students collaboration	1.52	0.78	1.90	0.95	1.71	low
	Overall mean					1.83	Low competence

X_1 – is Rural ICT teachers
X_2 – is Urban ICT teachers

The data in the 4 show that the overall mean (1.83) of all items indicate low competence by the two group of respondents . This indicates that ICT teacher pedagogy competence for the implementation of the curriculum in secondary schools is low.

Research question 4: What is the competence of ICT teachers technology for the implementation of ICT curriculum in secondary school?

Table 5: Means and standard deviations of responses of Rural and Urban ICT teachers on the competence of ICT teachers' technology competence for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X_1 = 698		X_2 = 1,046		μ	Remark
		$\overline{X_1}$	σ_1	$\overline{X_2}$	σ_2		
1.	Use open ended software packages appropriate to subject	1.84	0.82	2.03	1.07	1.94	low
2.	Use an authorizing environment or tools to design offline/ or wed resources.	2.00	0.51	1.87	0.79	1.94	low
3.	Used wed resources in support of project/problem based learning.	2.04	1.06	0.97	0.97	1.51	low
4.	Used search engines, social media website and e-mail to find people and resources for collaborative projects.	2.04	0.98	1.29	0.98	1.67	low
5.	Use of ICT to manage monitor and assess progress of students' project and progress.	2.25	1.02	1.51	0.70	1.88	low
6.	Use ICT to enable student, peers and the wider community.	2.78	0.77	1.77	0.80	2.28	low
	Overall mean					1.87	Low competence

X_1 – is Rural ICT teachers

X_2 – is Urban ICT teachers

The data in table 5 shows that the overall mean (1.87) of all items indicate low competence by the two groups of respondents. Thus, ICT teachers' technology competence for the implementation of ICT curriculum in secondary schools was low.

Research question 5:   What is the ICT teachers' administration competence for the implementation of ICT curriculum in secondary schools?

Table 6: Means and standard deviations of responses of Rural and Urban ICT teachers on the ICT teachers' administration competence for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X_1 N = 698		X_2 N = 1,046		Grand mean	Remark
		$\overline{X_1}$	σ_1	$\overline{X_2}$	σ_2		
1.	Use computers radio, television with the classroom and/or the school so as to support and reinforce learning activities and social interactions.	3.88	1.38	1.87	0.99	2.87	low
2.	Use other digital resources within the classroom and/or the school so as to support and reinforce learning activities and social interactions.	2.32	1.06	1.79	1.02	2.06	low
3.	Play a leadership role in supporting innovation and continuous learning in the school community.	2.05	0.91	1.50	0.78	1.78	low
4.	Identify the appropriate social arrangements (whole class, small groups and individual activities) to use with various technologies.	2.13	0.88	1.62	0.82	1.88	low
5.	Develop procedure for ethical responsibilities and appropriate use of ICT to support teaching and learning.	1.83	1.00	1.66	0.80	1.75	low

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| 6. | Develop policies for ethical responsible and appropriate use of ICT to support teaching and learning. | 1.96 | 0.87 | 1.22 0.56 | 1.59 | low |
| | Overall mean | | | | 1.99 | Low competence |

X$_1$ – is Rural ICT teachers
X$_2$ – is Urban ICT teachers

The data in table 6 shows that the overall mean (1.99) of all items indicate low competence by the two group of respondents. This indicates that the competence of ICT teachers' administration competence for the implementation of ICT curriculum in secondary schools was low.

Research question 6: What is the competence of ICT teachers professional development for the implementation of ICT curriculum in secondary schools?

Table 7
Means and standard deviations of responses of Rural and Urban ICT teachers on the competence of ICT teachers professional development competence for the implementation of ICT curriculum in secondary schools.

S/N	Competencies	X$_1$ N = 698		X$_2$ N$_1$ = 1,046		Grand mean	Remark
		$\overline{X}_1$	σ_1	$\overline{X}_2$	σ_2		
1.	Use ICT to enable staff access to e-learning courses for professional development.	2.10	0.95	1.65	0.94	1.88	low
2.	Using virtual learning environment to link staff to external experts.	2.12	0.95	1.49	0.72	1.81	low
3.	Use virtual learning environments to link staff to communities .	2.03	0.94	1.62	0.96	1.83	low
4.	Use ICT to enable staff to actively contribute knowledge that can be used to support classroom practices research and professional development.	3.65	0.70	1.83	0.97	1.94	low
5.	Use ICT to enable staff to share information that can be used to support classroom practices, research and professional development	2.42	1.02	1.33	0.56	1.88	low
6.	Use ICT to enable staff to actively share resources that can be used to support classroom practices research and professional development	1.76	0.97	1.74	0.88	1.75	low
	Overall mean					1.85	Low Competence

X$_1$ is Rural ICT teachers
X$_2$ is Urban ICT teachers

The data in table 7 shows that the overall mean (1.85) of all items indicate low competence by the two group of respondents. This, indicate that the competence of the ICT teachers professional development the implementation of ICT curriculum in secondary schools was low.

Research question 7: What are the obstacles to ICT teachers competence for the implementation of ICT curriculum in secondary schools?

Table 8
Percentage of responses of Rural and Urban ICT teacher on obstacle to ICT teacher competence for the implementation of ICT curriculum in secondary schools.

S/N	Obstacles	Number	Percentage
1.	Awareness of the country support for implementation on ICT Curriculum	238	13.6
2.	Insufficient information and experience of teachers in ICT application	343	19.7
3.	Lack of suitable or desirable tools, connectivity problems and software unavailable in language of instruction	120	6.9
4.	Lack of hardware, software and financial resources	433	24.8
5.	Lack of electricity in most Rural schools	361	20.7
6.	Fear of technological equipment	249	14.3
	Total	1,744	100%

Discussion of findings

Results from table 1 show that urban ICT teachers were the majority. They are made up of 60% of the total respondents. This was as a result of proportional representation.

The finding in Table 2 reveal that the competence of policy awareness   of ICT teachers for the implementation of ICT curriculum in secondary schools was low. The grand mean show low competence. This is in disagreement with UNESCO (2008) competence for teachers which states that teachers must be aware of policy and be able to articulate in consciously skilled ways, how their classroom practices correspond to and support policy. Hooker, Mwiyeria and Verma (2011b) report that teachers ranked policy domain for raising awareness of national and institutional ICT in education policy as one of most important competency standard for teachers is not consistent with the findings. Yusufu (2005) agreed with the finding that ICT policy awareness is inadequate to impact positively on the Nigerian education system.

 The findings from table 3 show that there was low competence of ICT teachers in curriculum to implement ICT curriculum in secondary schools. This differ from Hooker, Mwiyeri and Verma (2011a) study which asserted that teachers ranked curriculum assessment competences as high. Acuna (2008) teacher competence framework specified that teacher must have excellent knowledge of the curriculum standards for their subject, as well as knowledge of standard assessment strategies. In addition, teachers must be able to integrate the use of technology into the curriculum. Iwuamadi and Ajeka (2010) is consistent with the findings that social studies teachers do not possess adequate competency in ICT curriculum applications.

The findings in table 4 reveal low competence of ICT teachers pedagogy for implementation of ICT curriculum in secondary schools. This did not concur with UNESCO (2008) ICT teacher competence framework which states that teacher must know where, with whom, when (as well as not) and how to use ICT for classroom activities and presentations. The findings is also not supported by Hooker, Mwiyeri and Verma(2011c) which states that pedagogy domain competences must be use by ICT teachers to design teaching and leaving unit plans and activities. Akudolu (2006) study corroborates the finding by indicating that pedagogical competences of ICT teachers are inadequate for ICT application.

 The finding with regard to the competence of ICT teachers technology competence for the implementation of ICT curriculum in secondary schools indicate that ICT teachers technology competence is low (Table 5) as overall mean show low competence. This did not corroborate UNESCO (2005) ICT teacher competence framework which pointed out that teachers competence must have basic hardware and hardware operations as well as productivity application software, a web browser communications, software presentation, software and management applications. Titilayo (2010) study concur with the fact that the number of ICT teachers who have basic technological skill in the use of ICT is low, In comparison Hooker, Mwiyeri and Verma (2011a) reported that ICT technology domain such as the ability to use ICT open ended software packages appropriate to subject matter areas, the ability to use an authorizing environment or tools to design offline and/ or web resources is low.

Finding of the study in table 6 indicate that competence of ICT teachers administration for the implementation of ICT curriculum in secondary schools is low. This finding is not consistent with the assertion of UNESCO (2008) teacher competency framework which show that teacher administration competency must be able to use technology with the whole class small groups and individual activities and ensure equitable access is provided to all student. This finding is supported by the assertion of Hooker,Mwiyeri and Verma (2011c) that organization and administration is low by teachers. Adeyinka, Adedji, Majekodum, Lawrence and Ayodele (2005) corroborated that ICT teachers expertise in administration of ICT is lacking.

The finding in table 7 revealed low competence of ICT teachers professional development for the implementation of ICT curriculum. The overall mean show low competence. This finding is consistent with current observation and opinions of educationist. Roddun (2010) and Naugue (2011) among orders indicate that the competence of ICT teachers professional development is low. Information gathered from the secondary schools through discussions with teachers who are not respondents however tend to support the finding of the study. Regina (2013) maintains that there is significant relationship

between ICT   and professional Development. Further   information gathered, confirm that ICT teacher professional development is low, UNESCO (2008) on the other hand supported the finding that ICT teacher competence on professional development must have the technological skill and knowledge of web resource necessary to use technology to acquire additional subject matter and pedagogical knowledge in support of their own professional learning. Hooker, Mweri and Verma(2011a) report was not consistent with the finding which reported that teacher professional development domain competences for using ICT to enable staff to actively contribute knowledge is high.

 The data in table 8 shows that a number of obstacles were identified as impeding ICT teachers' competence for the implementation of ICT curriculum in secondary schools. As depicted in the table 8:238 (13.66%) indicated lack of awareness of the country support for implementation of ICT curriculum. Furthermore, insufficient information and experience of teachers in ICT application at secondary school level was identified as another obstacle by 345 (19.7%) as confirmed by Khan, Hassan and Clement(2012)that lack of government and school vision and planning is an obstacle to ICT teachers competence for the implementation of ICT curriculum in developing countries. Lau and Sim (2008) established that the main obstacles hindering ICT competence is limited knowledge and understanding of how to integrate ICT into teaching. The result also reveal that 120 (6.9%) indicated lack of suitable or desirable tools connecting problems and software unavailability in language of instruction as obstacle to ICT curriculum implementation. Lack of hardware, software and financial resources was an obstacle to 433 (24.8%) ICT teacher competence. Some 361 (20.7%) indicate fear of technology equipment. Nwosu and Ogbonna, (2013) replicate the findings by establishing that lack of reliable access to electricity, limited technology infrastructure, language of instruction and available software as obstacles to ICT teachers competencies for the implementation of ICT curriculum. Adomi and Kpargan (2013) further corroborated that teacher lack of technological competence is an obstacle to ICT teachers competence for the implementation of ICT curriculum on secondary schools.

Conclusion

This study concluded that there was low competence of policy awareness, curriculum, pedagogy, technology, administration and professional development of ICT teachers for the implementation of ICT curriculum in secondary schools. Similarly, lack of policy and vision, hardware and software knowledge and unavailability of infrastructure are some of the obstacles to ICT teachers competencies for the implementation of ICT curriculum.

Recommendations

The following recommendations are made based on the finding of the study:

1. Federal and state ministries of education should put a national and state ICT policy to make ICT teachers to be aware of the policies, so that they can specify how classroom practices correspond to and support policy for implementing the curriculum in secondary schools.
2. The federal and state governments should make the development of ICT teacher curriculum competence, a priority, so that they can have a firm knowledge of the curriculum standards for their subject assessment procedures for implementing the curriculum in secondary schools.
3. The federal and state ministries of education should set target when all ICT teachers pedagogy competence should be acquired so that they can know where with whom, when and how to use ICT for classroom activities and presentations for implementing the curriculum in secondary schools.
4. The national policy on education should include the acquisition of ICT technology mandatory by ICT teacher so that they can know basic hardware and software operations, productivity applications web browser, communications, presentation, software and management applications in secondary schools.
5. ICT teachers' administration course should become compulsory in all pre- service and in-service teacher preparation so that they can use technology with the whole class small groups and individual activities and assure equitable access in secondary schools.
6. ICT teachers professional development providers should include elements of ICT competencies so that they can have the technological skill and knowledge of web resources necessary to use technology to acquire additional subject matter and pedagogical knowledge for implementing the curriculum in secondary schools.
7. ICT facilities should be made available in Secondary schools to overcome obstacles to teachers' competence for the implementation of ICT curriculum in secondary schools.

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