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Teachers' Level of Awareness of 21st Century Occupational Roles in Rivers State Secondary Schools

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Abstract

This study investigated the teachers' level of awareness of 21st century occupational roles in Rivers state secondary schools. Three research questions and three hypotheses guided the study. The population of study comprised of 247 public secondary schools and 57 private secondary schools in Port Harcourt metropolis of Rivers state which gave a total number of 9413 participants. The sample size for the study was 860 teachers selected by using the stratified random sampling, simple random sampling and the purposive sampling techniques. Instrument used was the questionnaire titled Teachers' level of awareness of 21st century occupational roles questionnaire (TLATCORQ) and personally designed by the researcher using a modified Likert scale of four points. Face and content validities were carried out on the instrument. A reliability test using Cronbach alpha technique which gave an index of 0.80, was also conducted .Mean and rank order statistics were used to answer the research questions while the z-test was used to analyse the hypotheses at 0.05 alpha level. Findings revealed that teachers' level of awareness of 21st century occupational roles is just moderate and not very encouraging, teachers do not use technology in classroom instruction and the 21st century environment has affected the areas of instructional materials, teaching strategies and others. Based on the findings, it was recommended that teachers be allowed to form self-development groups involving more technologically competent colleagues and that professional development programmes organized by the government for teachers should be more strategic and transformative in content and direction focusing more on 21st century skills and ICT based teaching and learning strategies.

Keywords: awareness, 21st century, occupational roles, secondary schools

1. Introduction

Education is the greatest instrument for effecting national development. Okoro (2007) describes education as the process individuals undergo through the acquisition of knowledge, skills, abilities and attitudes that are necessary for effective living in the society. In the era of globalization, educational systems are transforming and changing in the way teaching and learning activities occur in the schools. In the globalization process, schools are required to prepare students to play future social roles, and particularly function effectively in a democratic society and in the workplaces. With the globalization process, the learning needs of students have changed and so has the occupational roles of teachers in the classrooms changed. The 21st century is characterised by definitive themes such as global awareness, multiple literacies- financial, economic, business and entrepreneurship. Others are civic literacies, health, cultural and environmental literacy.

With the multiple literacy requirements of the 21st century environment comes the urgent demand for competencies and for acquisition of 21st century skills needed for survival and to become self- reliant outside the school and globally competitive with the ability to function effectively across local and international boundaries. The 21st century skills as identified by Partnership for 21st century skills, includes critical thinking and problem solving, communication, collaboration, creativity and innovation, information, media and technology skills, life and career, skills, initiative and self- direction, social and cross cultural skills, productivity and accountability, leadership and responsibility. With globalization, it has become necessary that people acquire a high standard of education, such that will make learners to cope and adapt to the changing world. With this, the traditional and prevalent system of education which dominated the 19th and 20th centuries is seen to be rapidly giving way to the new ideals of the 21st century.

Teachers occupy a very strategic role in the achievement of educational objectives. The teacher especially at the

secondary school level is seen as the vehicle for transmitting any innovation and at the fore-front of every education innovation and reform. (European Union, 2008). Teachers, particularly at the secondary level of education, are expected to possess a wide-range of skill and competencies, to be able to impact the necessary skills and prepare the learners for work, citizenship, and life in a globally competitive world. The 21st century learning environment is such that supports learning and teaching by exploiting the use of digital technology as well as Information and Communication Technology.

The use of information and communication Technology (ICT) in educational activities has become widely accepted in handling the rapid knowledge explosion which has become the order of the day. According to Yusuf (2005), ICTS have potential to accelerate, enrich and deepen skills to motivate and engage student, to help relate school experience to work practices, create economic viability for tomorrow's workers as well as strengthening teaching and bringing change to schools. Students, cutting across all levels, nowadays almost live digitally and on a daily basis, make use of the phones, computer, internet, social network and others-and are very fluid at operating and using them to find and circulate information. Teachers need to acquire skills in using and applying ICT in order to connect with today's learners. The 21st century environment is characterised by learner-centred and inquiry-based teaching and learning. Being globally aware in terms of education, will translate to renewing the curriculum on a regular basis considering new competencies, individualized learning, greatly reduced class sizes, enquiry method of learning, problem-solving and student centred approaches, use of internet and electronic facilities to support teaching and learning (Peretomode & Ikoya, 2010). In order to teach innovative and creative thinking skill, teacher must be aware of these skills, have the skills themselves and be creative thinkers. It is required that the teacher, in modelling 21st century skills, must exhibit creativity, originality, innovativeness and novelty and be able to manipulate available educational resources to achieve educational objectives. Teachers must be able to motivate and engage their students as well as excite their participation in the teaching and learning processes.

The level of efficiency of the teachers and the ability of the educational systems to achieve its set goals is a measure of how productive the teachers are with respect to performing their defined roles because teachers are the fulcra upon which the whole educational system revolves. The major role of the teacher in a school is in the teaching-learning process. How the teacher goes about this role will to a large extent determine how effective and productive the teacher is and how efficient the school organization will become. However, the secondary schools in Nigeria and in River State in particular, although, appears to be theoretically and physically in the 21st century but in actual sense its operation seems to be in the past. The need to know what actually is obtainable in the classroom becomes a serious concern. Most critically is the question about the roles the secondary school teachers are actually playing in the 21st century. The changing roles of teachers is necessitated by the way the educational system, and especially the secondary educational system has performed over the years. Jegede in Obiakor (2010) observes that "our schools, colleges and universities have failed to tap the potentials, talents of every child, and until we are able to do this successfully, we cannot grow as a nation".

With growing inter-connectedness, the schools, especially the secondary education level, are being looked up to in order to address the challenges. For the schools to do this, the curriculum must reflect issues of globalization which should affect the learning, teaching, processes of curriculum development, funding and management of secondary education. Peretomode & Ikoya (2010) asserted that:

> *Globalization has implications for teaching-learning process, assessment and classroom management. The best practices should be adopted. For example, learning should be individualized, class-sizes greatly reduced, critical thinking, the inquiry method, problem-solving and student-centred approaches should be adopted-furthermore; team-teaching and team activities should be emphasized. In this cyber-world, the internet should be introduced into the classroom and electronics should be used to support collaborative teaching and learning and learning.*

The attainment of vision 20:20:20 and MDG necessitated the Nigerian Education research and development council (NERDC) to carry out reforms in the secondary school curriculum. The essence of this exercise was towards the re-engineering of the curriculum and making provisions for issues like entrepreneurship education, information and communication technology skills and civic education. The major thrust of this is for secondary education to impart marketable skills and creative knowledge required to create wealth, generate employment opportunities through self-reliance. The teacher must be able to transform teaching to meet the needs of today's learners. The teacher must be able to engage, learn, and inspire, be able to evoke in the learner's, critical thinking and creative thinking, inquiry, problem-solving, communication, collaborating, building arguments and all the literacy skills. Teachers need to acquire skills in the usage and application of information and communication technology (ICT), skills to tackle the demands of entrepreneurship education, e-learning skills, the use of the internet, social-networks audio visual equipment, video-players, television, projectors, recorders, on time resources, phones, fax and other electronic devices. It is a proven fact that Information and Communication Technology has a tremendous capacity to transform the educational

process as a whole, making it more efficient and effective and recording a high level of productivity. Olibie and Agu (2008) posits that the information revolution and advent of new technologies will continue to open up possibilities for individual and collective empowerment, information exchange and knowledge accumulation. The use of ICT in education has practically transformed the teaching learning processes. Olaniyan and Obadara (2006), noted that the increasing capacity of information and communication technologies has resulted in a rise in new learning opportunities beyond the traditional "book-teacher model".

The introduction and integration of ICTs into teaching- learning processes has called for drastic changes in the role of the classroom teacher in the 21st century. The roles of the teachers are evolving as new expectations to be tech-savvy, computer literate and at the cutting edge of technology arises (Flammand, 2012). With ICT facilities in the classroom, teachers must become experts at their usage as well as instruct students on computer usage, internet search, browsing, sending e-mails and receiving, using the computer to prepare-lessons and others. Teachers want to help transform their students into effective critical thinkers and life-long learners. Akudolu (2002) further explained that ICT is not just about applications and systems but also needed skill for life in the society. Acquisition of ICT skill has become a fundamental necessity for living effectively in the modern world of the 21st century. The 21st century is a technology-driven age and for the educational system to thrive towards global competitiveness, both the teachers and the learners must embrace use of ICT in teaching and learning processes in the school. ICTs have shifted the traditional role of the teacher as the only source of knowledge, to that of a facilitator of learning. According to Ifegbo (2005) ICT integration into the teaching and learning activities is described as referring to the process which involves the determination of which products and processes, should be considered appropriate in a given situation in the classroom. Teachers are supposed to be proficient in computer operation programmes and other ICT technologies to enable them effectively integrate ICT in the classroom.

The National policy on Education (FRN, 2004) emphasized that government should provide necessary infrastructure and training sustenance for schools where ICT already exists. This led to the launching of electronic education (e-education) for Nigerian education system which forms part of global initiative for the attainment of education for all (EFA) and Millennium Development Goal (MDG). Yusuf and Yusuf (2009) stated that ICTs are a combination of the potentials of computers, telecommunication and electronic media using digital technology. It encompasses the computer hardware and software, the network and several other devices such as audio, Video, photograph, camera and so on, that convert information and so on into common digital form (Yusuf, 2005). In Adomi (2005), It was stated that ICT-driven project known as School-Net was launched by the Federal government with the intention of equipping all schools in Nigeria with computer and communication technologies. NEPAD in 2003 in South Africa launched the e-school initiative intended to equip all African high schools with ICT equipment including computers, radio and television sets, phones, and fax machines, communication equipment, scanners, digital cameras and copiers among other things (Ogbuechi & Olawolu, 2011). From the fore-going, it is evident that considerable efforts and resources has been invested into making sure that the use of ICTs is integrated into the educational system both in the teaching-learning processes and in the management of educational systems. The implication of this is that teachers and learners at all levels need to embrace new information technologies, education and training in order to keep up with the advances of new technologies (Ogbuechi & Olawolu, 2011).

2. Statement of the Problem

The ever-increasing needs and demands of the 21st century environment compels the educational institutions particularly the secondary schools, to transform in the way learning takes place. The traditional modes of teaching and learning seems to be losing relevance in not been able to adequately cater for the needs of today's learners and in being responsive enough to address the challenges of global competitiveness. The 21st century environment is a digital environment which exploits technology to support learning. There is therefore an urgent need for a shift from traditional learning to ICT based learning. This has placed a lot of demand on the skills and abilities of the teachers which has therefore increased their occupational roles. This is because the needs of the 21st century are different from needs of the 19th and 20th century. However ,performances of students at examinations have remained poor and complaints from parents guardians , the government, corporate organizations and all stakeholders about quality of school leavers and applicants have remained the same with the massive disconnect between what is learnt and what the students actually need to survive in the workplace of the 21st century. This study therefore aim at investigating the types of occupational roles which teacher play in the 21st century, level of awareness of secondary school teachers on what the 21st century occupational roles should be and the areas of their roles affected by the 21st century environment.

3. Aim and Objectives

The aim of this study is to ascertain the level of secondary school teachers' awareness of the 21st century occupational roles in Rivers state. Specifically, the study sought;

1. To identify the types of occupational roles which teachers play in the 21st century environment of Rivers state secondary schools.

2. To determine the level of teachers' awareness of 21st century occupational roles in Rivers state secondary schools.

3. To ascertain the areas in which the 21st century environment affects the occupational roles of teachers in Rivers state secondary schools.

4. Research Questions

1. What are the types of occupational roles which teachers play in the 21st century environment of Rivers state secondary schools?

2. What is the level of teachers' awareness of 21st century occupational roles in Rivers state secondary schools?

3. What are the areas of teachers' roles affected by the 21st century environment in Rivers state secondary schools?

5. Hypotheses

1. There is no significant difference between male and female teachers on the types of occupational roles which teachers play in the 21st century environment of Rivers state secondary schools.

2. There is no significant difference between the mean ratings of public and private school teachers on the level of awareness of 21st century occupational roles in Rivers state secondary schools.

3. There is no significant difference between the mean ratings of public and private school teachers on the areas of teachers' roles affected by the 21st century environment in Rivers state secondary schools.

6. Methodology

The study was a descriptive survey design guided by three research questions and three hypotheses. The population of the study comprised of 247 public secondary schools and 57 private secondary schools of Rivers state with a total 304 principals and 9413 teachers as participants. The sample size was 860 respondents selected by using the stratified random sampling, simple random sampling, and the purposive sampling techniques. The instrument for the study was the questionnaire titled Teacher level of awareness of 21st century occupational roles in Rivers state secondary schools questionnaire (TLATCORQ) with a modified Likert four-scaled pattern of Strongly agree, Agree, Disagree and Strongly disagree for research questions one and three, while High level, Moderate level, Low level and Not aware for research question two. Face and content validities were conducted on the instrument and a reliability index of 0.80 was obtained using Cronbach alpha technique. The research questions were analysed using the mean and rank order statistics, while the hypotheses were analysed using the z-test statistics.

7. Results and Discussion

7.1 Research Question One: *What are the Types of Occupational Roles Which Teachers Play in the 21st Century Environment of Rivers State Secondary Schools?*

Table 1. Weighted mean and rank order of the types of occupational roles of teachers in the 21st century environment of Rivers State Secondary Schools.

Types of occupational roles variable	**Gender**		**Rank**
Technology Expert	**Male**	**Female**	
Use technology in classroom instructions	2.41	2.38	3rd
Have students use technology to find information	2.48	2.30	4th
Network and chat with learners on social media	2.90	2.37	1st
Give internet- based assignment	2.70	2.28	2nd
Adapt software and hardware into learning tools	2.44	2.27	5th
Incorporate video games to enhance learning	2.48	2.25	5th
Group mean	**2.56**	**2.30**	
Project Manager			
Students work collaboratively on projects	2.51	2.38	2nd
Projects are interdisciplinary	2.43	2.30	5th
Projects relate to real-life situation	2.36	2.37	3rd
Projects require higher order thinking skills	2.49	2.30	3rd
Projects are research-based	2.50	3.27	1st
Group Mean	**2.45**	**2.52**	
Assessor			
E-assessment	2.90	3.17	1st
Uses wide range of assessment strategies	3.16	2.66	3rd
Assessments tailored to the needs of the learner	2.75	2.87	2nd
Performance based assessment	2.76	2.30	4th
Group Mean	**2.89**	**2.74**	
Entrepreneur			
Fosters entrepreneurial mind set	2.42	3.24	1st
Identifies business ideas and opportunities	2.62	2.38	6th
Provides experience that encourage problem solving skills	2.88	2.64	4th
Improvisation	2.59	2.65	3rd
Encourage use of talents	2.75	2.38	5th
Work with students to generate money for school from class projects	2.62	3.10	2nd
Group Mean	**2.69**	**2.73**	
Collaborator			
Encourage effective group interaction	2.50	3.39	5th
Fosters co-operation and team-spirit	2.73	3.25	6th
Encourage student's critical thinking skills	2.79	2.53	1st
Collaborate with other stakeholders	3.15	3.27	2nd
Work with students in small groups	2.65	3.37	4th
Group Mean	**2.80**	**3.36**	
Facilitator			
Facilitates effective communication	2.77	2.64	11th
Create environment that supports expression of ideas	2.37	3.70	10th
Guides in filtering on-line information	3.25	3.40	9th
Guides students in finding and interpreting information.	3.34	3.47	2nd
Facilitates self-directed learning	3.30	3.73	7th
Facilitate student-centred learning	3.34	3.30	5th
Group mean	**3.06**	**3.37**	
Life-long Learner			
Model life-long learning	3.54	3.26	3rd
Model global awareness	3.61	3.18	4th
Encourage student's curiosity	3.36	3.52	1st
Provides hands-on-learning activities involving all the senses	3.37	3.16	8th
Teach the value of learning	3.24	3.33	6th
Group Mean	**3.42**	**3.29**	

Table 1 revealed that items 9 – 14 and 11 – 19 have group means of 2.39 and 2.48 respectively below the criterion mean of 2.50. Also, items 20 – 23 (group mean of 2.83), 24 – 29 (2.71), 30 – 34 (3.16) and 35 – 45 (3.28), all have their means above the criterion mean of 2.50. Therefore, from the results obtained, the types of occupational roles of teachers

in the 21st century classroom of Rivers State Secondary School as agreed by both male and female teachers are facilitator and life-long learner, collaborator, Assessor and an entrepreneur while the roles as project manager and technology expert are not types of occupational roles of teachers in the 21st century environment .However, the male teachers seems to be playing the roles of technology expert and assessor more than their female counterpart, while the female teachers, from the group means, seems to be playing the role of project manager, collaborator, facilitator more than the males.

7.2 Research Question Two: *What is the Level of Teachers' Awareness of 21st Century Occupational Roles in Rivers State Secondary Schools?*

Table 2. Weighted mean and rank order of teachers' level of awareness of 21st century occupational roles in Rivers State Secondary Schools.

Level of awareness of occupational role variable.	**School Type**		**Rank**
	Private	**Public**	
Technology Expert			
Use technology in classroom instructions	2.41	2.38	3rd
Have students use technology to find information	2.48	2.30	4th
Network and chat with learners on social media	2.90	2.37	1st
Give internet- based assignment	2.70	2.28	2nd
Adapt software and hardware into learning tools	2.44	2.27	5th
Incorporate video games to enhance learning	2.48	2.25	5th
Group mean	**2.56**	**2.30**	
Project Manager			
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Projects are interdisciplinary	2.43	2.30	5th
Projects relate to real-life situation	2.36	2.37	3rd
Projects require higher order thinking skills	2.49	2.30	3rd
Projects are research-based	2.50	3.27	1st
Group Mean	**2.45**	**2.52**	
Assessor			
E-assessment	2.90	3.17	1st
Uses wide range of assessment strategies	3.16	2.66	3rd
Assessments tailored to the needs of the learner	2.75	2.87	2nd
Performance based assessment	2.76	2.30	4th
Group Mean	**2.89**	**2.74**	
Entrepreneur			
Fosters entrepreneurial mind set	2.42	3.24	1st
Identifies business ideas and opportunities	2.62	2.38	6th
Provides experience that encourage problem solving skills	2.88	2.64	4th
Improvisation	2.59	2.65	3rd
Encourage use of talents	2.75	2.38	5th
Work with students to generate money for school from class projects	2.62	3.10	2nd
Group Mean	**2.69**	**2.73**	
Collaborator			
Encourage effective group interaction	2.50	3.39	5th
Fosters co-operation and team-spirit	2.73	3.25	6th
Encourage student's critical thinking skills	2.79	2.53	1st
Collaborate with other stakeholders	3.15	3.27	2nd
Work with students in small groups	2.65	3.37	4th
Group Mean	**2.80**	**3.36**	
Facilitator			
Facilitates effective communication	2.77	2.64	11th
Create environment that supports expression of ideas	2.37	3.7	10th
Guides in filtering on-line information	3.25	3.40	9th
Guides students in finding and interpreting information.	3.34	3.47	2nd
Facilitates self-directed learning	3.30	3.73	7th
Facilitates student-centered learning	3.34	3.30	5th
Group Mean	**3.06**	**3.37**	
Life-Long Learner			
Model life-long learning	3.54	3.26	3rd
Model global awareness	3.61	3.18	4th
Encourage student's curiosity	3.36	3.52	1st
Provides hands-on-learning activities involving all the senses	3.37	3.16	8th
Teach the value of learning.	3.24	3.33	6th
Group Mean	**3.42**	**3.29**	

Table 2 revealed that items 9 – 14 and 11 – 19 have group means of 2.39 and 2.48 respectively below the criterion mean of 2.50. Also, items 20 – 23 (group mean of 2.83), 24 – 29 (2.71), 30 – 34 (3.16) and 35 – 45 (3.28), all have their means above the criterion mean of 2.50. Therefore, from the results obtained, the teachers' level of awareness of 21st century occupational roles as agreed by both public and private school teachers for the roles of facilitator, life-long learner, collaborator, assessor and an entrepreneur were moderate while that of project manager and technology expert were quite low. However, on closer observation, the private school teachers seems to be more aware of the 21st century roles than their counterparts in the public schools as shown by the slight differences in their mean scores.

7.3 Research Question Three: *What Are the Areas of Teachers' Roles Affected by the 21st Century Environment in Rivers State Secondary Schools?*

Table 3. Weighted mean and Rank order of the areas the 21st century environment affects the types of occupational roles of teachers in Rivers State Secondary Schools

Item Statement	School Type		Rank
	Public	Private	
Instructional strategies	2.63	2.72	9th
Learning resources	2.64	2.73	7th
Classroom management	2.45	3.37	2nd
Content coverage	3.10	3.25	4th
Stakeholder relationship	2.56	2.69	11th
Professional development	3.45	3.36	3rd
Commitment	3.34	3.55	1st
Workload	2.71	3.12	6th
Technical competency	3.08	3.20	5th
Networking with peers	2.69	2.67	7th
Motivation	2.54	2.69	10th
Aggregate Mean	**2.92**	**3.03**	

Results from table 3 showed that all the items have their mean score values to be above the criterion mean score of 2.50. The area of commitment ranked 1st with mean score of 3.44, closely followed by classroom management (2nd), professional development (3rd). Therefore, the areas of teacher roles affected by the 21st century environment are commitment, classroom management, professional development, learning resources, technical competence, workload, content coverage and instructional strategies. However slight differences occurred between the public and private school teachers as the private school teachers seems to agree more on the areas of classroom management, commitment and technical competency while the public school teachers agreed more on the area of professional development, thus the aggregate mean scores of private schools of 3.03 was slightly higher than that of public schools of 2.92.

7.4 Hypotheses One: *There is No Significant Difference between Male and Female Teachers on the Types Occupational Roles Which Teachers Play in The 21st Century Environment of Rivers State Secondary Schools*

Table 4. z-test difference between the mean ratings of male and female teachers on the types of occupational roles they play in the 21st century environment of Rivers State Secondary Schools.

Variables	N	$\overline{X}$	S.D	Df	z-cal	z-crit	Remark
Male teachers	300	2.69	0.88				
Female teachers	560	2.64	0.92	858	0.78	1.96	Accepted

Table 4 shows that male teachers have mean and standard deviation scores of 2.69 and 0.88 while female teachers have mean and standard deviation scores of 2.64 and 0.92. At an alpha level of 0.05 with a degree of freedom of 858, the z-calculated value of 0.78 is less than the z-critical value of 1.96 ($P < 0.05$). Therefore, the null hypothesis of no significant difference is accepted and the alternative rejected. There is no significant difference in the mean ratings of male and female teachers on the types of occupational roles they play in the 21st century classroom environment of Rivers State Secondary Schools.

7.5 Hypothesis Two: There is no Significant Difference between the Mean Ratings of Public and Private School Teachers on the Level of Awareness of 21st Century Occupational Roles in Rivers State Secondary Schools

Table 5. z-test difference between the mean ratings of public and private school teachers on the level of awareness of 21st century occupational roles in Rivers State Secondary Schools.

Variables	N	$\overline{X}$	S.D	df	z-cal	z-crit	Remark
Private School Teachers	400	2.69	0.89	858	5.93	1.96	Accepted
Public School Teachers	460	2.81	0.85				

Table 5 shows that the calculated z-value of 1.618 at degree of freedom of 858 at the 0.05 alpha level was not significant. The public school teachers had a mean and standard deviation scores of 2.81 and 0.93 while the private school teachers had a mean and standard deviation scores of 2.69 and 0.88 at 858 degree of freedom. The calculated z-value of 5.93 is greater than the critical value of 1.96. Therefore, there is a significant difference between the mean scores of public and private school teachers on the level of awareness of 21st century occupational roles in Rivers State Secondary Schools.

7.6 Hypothesis Three

There is no significant difference between the mean ratings of public and private school teachers on the areas of teachers' occupational roles affected by the 21st century environment in Rivers state secondary schools.

Table 6. z-test difference between the mean ratings of public and private school teachers on the areas which the 21st century environment affects their occupational roles in Rivers State Secondary Schools.

Variables	N	$\overline{X}$	S.D	df	z-cal	z-crit	Remark
Public School teachers	460	2.93	0.93				
Private School teachers	400	3.03	0.88	858	1.615	1.96	Accepted

Table 6 shows that the calculated z-value of 1.618 at degree of freedom of 858 at the 0.05 alpha level was not significant. The mean and standard deviation scores for public school were 2.93 and 0.93 respectively while that of private schools were 3.03 and 0.88 at 858 degree of freedom. The calculated z-value of 1.618 is less than the critical value of 1.96. Therefore, there is no significant difference between mean scores of public and private school teachers on the areas of their occupational roles affected by the 21st century environment of Rivers state secondary schools.

8. Discussion

From the findings of this study, it was revealed that the types of occupational roles of teachers in the 21st century are facilitators, life-long learner, collaborator, assessor and entrepreneur. It was also revealed that two of the critical roles needed in the 21st century classroom which are the roles of technology expert and a project manager are lacking, as shown by their relatively low mean scores. The 21st century classroom is a unique one with peculiar demands which necessitated that teachers play roles which were not part of their roles previously. The demand to train students into being productive members of the society where they find themselves locally and globally is a very pressing one. Information and communication technology usage in class instruction generally has been found to be the key instrument that drives 21st century learning. Awotua-Efebo (2015) in his induction lecture, identified 4 critical elements or skills otherwise tagged the 4C's of Education in the 21st century, to be collaboration, effective communication, critical thinking and creativity. This is however, consistent with the findings of this study. The views of Nwaka (2011) who observed that although with information and communication technology usage, the teacher becomes a facilitator, supervisor and a guide for classroom instruction, he noted that teachers unfortunately neglect it thinking that their work is threatened especially with the use of ICT in learning, hence they oppose it. In the same vein, Okebukola (1997) cited in Aduwa-Ogiegbefun and Iyamu (2005) maintained that the computer is not part of classroom technology in more than ninety percent of public schools in Nigeria. Nwufor (2009) concludes that ICT penetration and usage in school remain very low. These findings are consistent with the result of this study which showed that although the schools are in the 21st century, the age of globalization, and recognizing the fact that ICT is the vehicle that drives 21st century learning, secondary school teachers are still struggling to incorporate ICT into teaching and learning activities in the classrooms. Asodike (2009), earlier noted regrettably that the Nigerian educational system (including the secondary schools) and our educators, may not exactly be among the most entrepreneurial. Her opinion however, did not tally with the results of this study as it was revealed that teachers play the role of an entrepreneur. Also there is no significant difference between the opinions of male and female teachers on the types of occupational roles they play in the 21st century.

The study revealed that the level of awareness of the types of occupational roles which the secondary school teachers should be playing in the 21st century is just moderate on the average while teachers level of awareness of the roles of a technology expert and project manager was found to be low. This is a surprising discovery because it is expected that the level of teacher awareness of the 21st century occupational roles should be high, with the heavy presence of various types of technological gadgets, ranging from cell-phones of different complexities, ready availability of loads of information almost accessible to anyone on demand through the internet, the ability to connect instantly with people across the world and so many other features of the 21st century workplace.

Smerdon (2000) in Nzokurum, Amaeze and Awah (2011), noted that the use of the internet has kept the teachers versatile and as well enhanced their professional development. This is not in agreement with the findings of this study. Oyedeji, Salau and Oluwalola (2008), explained that because of the increasing popularity of information and communication technology, courses enrolment has been on the rise as computer schools and training continue to grow.

This indicates that the use of ICT which is the vehicle that drives globalization and the 21st century is very popular. From the fore-going, and from the views of these authors, it is evident that awareness of the use of technology to enhance instruction dates back a long time, this to some extent disagrees with the findings of this study. The level of awareness of the teachers on the possible benefits of the use of technology in classroom instruction will go a long way in affecting the decisions they make about strategies, procedures and materials for instruction. For our educational system to remain relevant in the 21stcentury, it is very important that the teachers be aware of what their roles should be as demanded by the changes in the learning needs of students and the expectations of the workplace. However, the private school teachers differ significantly in their level of awareness of the 21st century occupational roles. Private schools are fee-paying institutions that must endeavour to satisfy their customers and this may put pressure on the teachers to find out new ways and strategies conforming to what is demanded by the 21st century.

The results of this study revealed that the 21st century learning environment, due to its peculiar characteristics, affected all the identified areas giving an aggregate mean of 2.98. The implication of this is that due to the demands of the 21st century, there are remarkable changes in various areas which have direct influence on the roles of the teacher in the classroom. Areas like commitment, classroom management, professional development, content coverage and technical competency ranked highly amongst others. The findings of this study are consistent with the views of Okorodudu (2011) who emphasized that the traditional classroom conditions often equipped with inadequate facilities to provide teaching and learning effectiveness are outdated and hence can no longer meet the current global educational needs and scientific growth and development. The results of the research carried out by Ekeh and Oladayo (2011) also revealed that ICT emergence in education is gradually eliminating the traditional teachers' didactic instructional strategy, while projecting and promoting a modern system of instruction that lays emphasis on print. This is however, in agreement with the findings of this research. With the introduction of ICT in teaching and learning, and its enrichment potentials it became needful that teachers must acquire skills and competencies in handling and using digital devices in the classroom. Notable changes appeared in the workload of the teacher who will have to prepare lessons, browse for information, give assignment, relate with both peers and parents, added to the other duties in the school. Private school teachers did not differ significantly from their public schools counterparts in their opinions on the areas of their occupational roles affected by the 21st century environment according to the findings of this study.

9. Conclusion

The 21st century environment is laden with a lot of demands on the processes of teaching and learning. Teacher classroom roles have therefore changed in order to adequately address the needs of the learner, in preparing them to become self-reliant and globally competitive individuals able to survive and fit into the 21st century workplace. The awareness level of secondary school teachers is not yet very encouraging inspite of the various areas of their occupational roles that has been affected by the 21st century environment.

10. Recommendation

1. Teachers should be allowed to form and organize self-professional development programmes on the use of ICT in teaching and learning involving other very technologically literate and competent teachers so they can learn from one another. This will form part of personal initiatives by the teachers themselves to acquire competency.

2. Policy makers and educational planners should put up a policy demanding that new teachers acquire ICT certification or competence before they are employed. The old serving teachers can also be made to go and train and acquire ICT competence within a stipulated time. This will encourage teachers to identify and appreciate the purpose and the urgent need of ICT integration in the teaching learning process thereby enhancing awareness.

3. Professional development programmes for teachers organized by the ministry of education should be transformative, focusing more on making the teacher acquire 21st century teaching skills, master the art of teaching in the 21st century using ICT. The programmes should be strategic and very involving

4. The school administrators should ensure that teachers compulsorily attend seminars, workshops training programmes organized by the ministry of education on the use of ICT in the classroom. This will help teachers to train and acquire competence in ICT as it also helps to create awareness of what the teachers' roles should be. They should also ensure that teachers apply the knowledge acquired from the training programmes in the classroom. There should be strict monitoring and supervision.

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