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TEACHER EDUCATION IN NIGERIA: A MISFIT IN THE DIGITAL AGE?

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Abstract

The educational system in Nigeria in this 21st century is at crossroads. In recent time, the teacher education has been increasingly lampooned by stakeholders accusing it of not meeting the demands of this century. This informed the researchers to examine if teacher education in Nigeria is on course by looking at the extent 21st century skills are emphasized in teacher education and the extent student teachers perceive themselves to have acquired these skills in the course of their training. The mixed method design was adopted. 194 regular students in Faculties of Education in two state owned universities in Anambra State were sampled using a nonrandom convenience sampling technique. Data were collected using questionnaire and semi-structured interview; and were analyzed. Findings revealed that, to some extent, the 21st century skills were emphasized and were perceived to be possessed by respondents. Data from the interview helped to deepen the understanding of the problem. It was concluded that though these skills are perceived to be emphasized and acquired to some extent; that more complex ones are yet to be properly infused in the teaching and learning process.

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Keywords: 21st century skills; teacher education; technology; digital age.

1. Introduction

The digital age revolution has permeated the classroom and has reoriented stakeholders in new methods with which children are to be handled, the content of instruction and the skill-set to be imparted on the students. Research findings show that in America as far back as 10 years ago that '21% of all

children aged 2 years and younger, 58% of 3- to 4-year-olds, and 77% of 5- to 6-yearolds have had some experience with computers, often on a daily basis' (Calvert, Rideout, Woolard, Barr, &Strouse, 2005 as cited in Shamir, 2013, p. 96). Furthermore, Shamir (2013, p. 96) noted that a survey study by Roberts (2011) 'found that children aged 2–5 years are often more adept at playing video games and downloading computer applications than at tying their shoelaces or riding a bike' [and] that 'these findings are reflected in the marketplace, with iPhones, iPods, and iPads increasingly being sold as gifts for children aged 6–12 years; fake plastic cellphones are sought for toddlers aged about 2 years. On the other hand, the adolescents have been described as being excessively consumed in their technological world engaging in several online discussions almost at the same time and always (Taffel, nd) and, to many teachers are now addicted.

The above scenario has called for a change in the way children are taught and the skills they need to acquire in school so that their interest could be sustained and they will be able to survive in the technological age (Shamir, 2010; Barell, 2010; Dede, 2010; Gardener, 2010). Ledward and Hirata (2011:1) see the 21st Century Skills as encompassing 'several inter-related skill sets: life and career skills; learning and innovation skills; information, media, and technology skills; and core-subject mastery and familiarity with interdisciplinary themes'. Hixson, Ravitz and Whisman (2012) after extensive literature operationalized and developed an inventory to measure technology as tool of learning skills, critical thinking skills, collaborative skills, communication skills, creativity and innovative skills, self-regulated skills, global and local connections skills.

Experts have noted that for educational system to be relevant, there is the need that it moves along and gets adapted to societal changes in such a way that its products will be able to fit into the society. It looks as if the teacher education in Nigeria lags behind in integrating the changes in society to what goes on in the classroom; and little wonder it has been lampooned, criticized and gaps have been picked in its operations (Ijaiya, 2008; Adeyanju, 2008; Ikeotuonye, 2011; Independent commission for Aid Impact (ICAI); 2012). Olibie and Akudolu (2007) identified creativity as a gap in practices inherent in Nigerian universities' classrooms while the study by Nwite (2011) in recognition of the NUC benchmark that ICT literacy should be made integral in teacher education showed that many Faculty members are yet to be computer literate. This is against the backdrop that there are policies geared towards integrating the 21st century skills in the teacher education in Nigeria. Apart from the ICT skills, there has been advocates for new ways of imparting knowledge and skills that will enable students to become efficient workforce in the 21st century. Though there have been studies focused on ICT skills, awareness, and use among teachers, there seems to be a gap in determining the extent teacher trainees perceive their learning experiences to be in compliance with the 21st century demands. The following research questions were asked: (a) To what extent are the 21st century skills emphasized in teacher education programme in Nigeria? (b) To what extent do student teachers perceive themselves to have acquired these skills in the course of their training?

2. Methodology

The researchers adopted a mixed method which involves a conglomeration of quantitative and qualitative methods as components of a research work which paves way for better understanding of the

research problem (Ponce, & Pagán-Maldonado, 2015). Data collection involved the use of questionnaire and semi-structured interview. The population of the study consisted of student teachers in the Faculties of Education in two state owned universities in Anambra State, Nigeria. These students are trainee teachers in 2014/2015 academic session. The sample size is 194 regular student teachers. A nonrandom convenience sampling technique was adopted given the fact that those who were sampled were students who gave their consent to participate in the study. 35.05% were male, 64.43% female and .52% were unidentified students. 6.70% specialized in science education, 49.48% in social science education and 43.81% in arts education. 5.67% were in year one, 10.31% in year two, 66.50% in year three and 17.53 in year four.

Questionnaire and interview were used. The questionnaire is a modification of that of developed Hixson, Ravitz, and Whisman (2012) used to assess 21st century teaching and learning. Though it was initially used on teachers to assess how their teaching impact on 21st century skills, it was restructured to measure the extent student teachers in Nigeria perceived these skills to be emphasized in the course of their training and the extent they have acquired these skills. The instrument was validated by experts in teacher education and education technology. It consists of 37 items of 3 subscales each subscale is made up 2 subsets. A semi-structured interview was used to get in-depth understanding of the problem under study. Respondents' original names were not used rather they were coded as 1/m/400 (1st interviewee, male student in 4th year), 2/m/400 (2nd interviewee, male student in 4th year), 3/f/300 (3rd interviewee, female student in 3rd year), and 4/f/300 (4th interviewee, female student in 3rd year). Percentage and mean were used in the analysis and the interview was qualitatively analyzed. In order to take decision, the real limits were adopted: Not at all (1-1.44); A little (1.45-2.44); some extent (2.45-3.44); very much extent (3.45-4.00) abbreviated respectively as NA, AL, SE, and VME.

3. Results

Table 1. Mean/Percentage Responses of Student Teachers' Perceived Emphasis on Technology as a Tool for Learning in the Course of their Training.

S/N	My programme emphasizes:	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean score	Remark
1.	Using technology or the internet for self-instruction (e.g., Khan Academy, or other videos, tutorials, self-instructional websites, etc)	15.3	18.4	30.0	36.3	2.87	S/E
2.	Selecting appropriate technology tools or resources for completing a task.	11.6	24.7	33.2	30.5	2.83	S/E
3	Evaluating the credibility and relevance of online resources.	14.7	18.4	32.6	34.2	2.86	S/E
4.	Using technology to analyze information (e.g., database, spreadsheets, graphic programmes)	17.9	25.3	24.2	32.6	2.72	S/E
5	Using technology to share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc)	14.2	21.1	25.3	38.9	2.91	S/E
6	Using technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc)	15.3	21.1	36.3	27.4	2.76	S/E
7	Using technology to interact directly with experts or members of local/global communities	32.3	27.0	18.0	22.8	2.31	A/E

8	Using technology to keep track of your work on extended tasks or assignments.	18.9	20.5	35.3	25.3	2.67	S/E

Table 1 above presented student teachers' mean/percentage responses on the emphasis laid on technology as a tool for learning in the course of their training. All the items in table one, looking at their mean scores, were perceived to be emphasized to some extent with the exception of item 7 which has to do with the use of technology to interact with experts in their field of study. Combining some and very much extent scales in the 8 items, a range of 60 to 64.2% of the respondents agree that they are emphasized except item 7 that recorded 40.8%.

The qualitative data from the interview gave an insight to the direction of emphasis which was mainly on creating awareness and encouraging students to search material for assignment online: *'To a reasonable extent…I would say my field,… have to a greater extent emphasized the use of technology. Most researches, assignments are centered on the use of internet. Even lecturers advocate for the use of internet for further studies'* (1/m/400). *'….We have E-view econometrics, some software in running econometric figures. So there are some kinds of technologies that are being used in getting the knowledge in economics particularly…'* (2/m/400).*'I think great emphasis is laid on the use of technology during our course of training. Most times, lecturers will tell you to go search information in the internet'* (3/f/300).

Furthermore, variety of technology was not emphasized and proper integration into their studies in the classroom may be lacking: *'...but we don't use variety of media* (4/f/300). *'...the Khan academy is alien to me'*(3/f/300). *'…these facilities are found in economics department but the way students are taught there is not encouraging. For example, students who carry out researches go outside to meet experts that run it for them, due to lack of knowledge of what they have been taught in class'* (2/m/400).

Table 2. Mean/Percentage Responses of Student Teachers' Perceived Acquisition of Skills on Technology as a Tool for Learning During their Training.

	To what extent have you acquired the following skills in the course of your training?	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean score	Remark
9	using technology or the internet for self-instruction (e.g., Khan Academy, or other videos, tutorials, self-instructional websites, etc)	19.5	23.7	30.0	26.8	2.64	S/E
10	selecting appropriate technology tools or resources for completing a task	14.2	26.8	33.2	25.8	2.71	S/E
11	evaluating the credibility and relevance of online resources	16.3	26.3	37.4	20.0	2.61	S/E
12	using technology to analyze information(e.g., database, spreadsheets, graphic programmes)	15.3	27.9	25.3	31.6	2.73	S/E
13	using technology to share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc)	13.7	27.9	29.5	28.9	2.74	S/E
14	using technology to interact directly with experts or members of local/global communities	22.6	26.8	25.8	24.7	2.29	S/E
15	using technology to keep track of your work on extended tasks or assignment	25.8	16.3	33.2	24.7	2.53	S/E
16	using technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc)	30.5	30.0	18.9	20.5	2.57	S/E

Table 2 above shows the mean indicated that to some extent, student teachers perceived themselves as possessing these skills. When the 'some and very much extent scales' are added together, a range of 50.5 to 58.4% of the respondents agree that they have acquired the skills.

Though, data from the interview revealed that students perceived themselves as having acquired the skill of technology as tool for learning, it indicated that it may be a mixture of the emphasis and extra efforts made by them outside what obtains in the course of their learning: *'There is no encouragement on the acquisition of knowledge in technology. There is no kind of encouragement on the use of technology'* (2/m/400). *'No ... because the environment is not enabling. Though, recently part of assignment entailed burning information gathered in a disc that is converted to software…. the training alone is not enough. It requires extra work on your own'* (3/f/300).

Table 3. Mean/Percentage Responses of Student Teachers' Perceived Emphasis on Collaborative Skills in the Course of their Training.

S/N	My programme emphasizes:	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean scores	Remark
17	skills for working in groups to complete a task together is emphasized.	14.2	16.3	33.2	36.3	2.92	S/E
18	skills to work with other students to set goal and to create a plan is emphasized.	5.8	25.3	33.2	35.8	2.99	S/E
19	creating joint products using contributions from each students.	11.6	20.5	34.7	33.2	2.89	S/E
20	presenting our work to the class, the teacher, or others.	8.9	12.1	30.5	48.4	3.18	S/E
21	assessing other students' work.	18.9	35.8	24.7	20.5	2.47	S/E
22	giving feedback to our peers on their work.	13.7	27.9	33.7	24.7	2.69	S/E

Table 3 above shows the mean/percentage responses of student teachers on their perceived emphasis on collaborative skills in the course of their programme. Analysis of the data using mean indicated that to some extent these skills are emphasized in the course of their training. Percentage responses range between 45.2 and 78.9% when the some extent and very much extent are summed together.

Furthermore, data from the interview revealed that emphasis were in the areas of completing a task jointly, working together to set a plan and create a planning, creation of joint products, and joint presentations of work. Responses were, however, silent on peer assessment and feedback: *'Yes, my program has emphasized greatly on this because, we learn more when we do collaborative work… For instance, our project was not an individual task. We shared ideas and combined them to produce a work… Microteaching where we were asked to create some things…was a group project. We joined hands together, our money and produced something'* (1/m/400). *'That is the part my department has done classically well. For example, our projects are done in pairs just to ascertain how you relate and coordinate and come up with solutions'* (2/m/400). *'Yes,… Most of our assignments are done in groups and it entails brainstorming with your group and present it in groups, generate information and ideas. Most times, even though grades are individualized they are also graded based on the overall performance of the group. So I … applaud … that'* (3/f/300). *'Very well…, you have to be outstanding… outspoken, work in groups in order to bring out an output. Most times, individuals work in a groups. When we do, students will be able to learn from each other'* (4/f/300).

Table 4. Mean/Percentage Responses of Student Teachers' Perceived Acquisition of Skills on Collaborative Skills During their Training.

S/N	To what extent have you acquired the following skills in the course of your training?	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean scores	Remark
23	collaborative skills to work in a team to complete a task	9.5	24.7	31.1	34.7	2.91	S/E
24	collaborative skills to set goal and create a plan in a team	15.3	28.9	25.8	30.0	2.71	S/E
25	skills to create joint products using contributions from other students	15.3	28.9	32.6	23.2	2.64	S/E
26	skills of assessing other students' work	17.4	25.8	34.2	22.6	2.62	S/E
27	skills of giving feedback to my peers on their work	17.4	25.3	33.7	23.7	2.64	S/E

Table 4 above shows student teachers' mean/percentage responses on their perceived acquisition of skills on collaborative skills during the course of their training. Analysis of the data, using mean statistic, shows that student teachers to some extent perceived themselves to have acquired collaborative skills in the course of their training. Percentage responses of students who agreed that they have acquired these skills range between 65.8% and 56.8% when the some extent and very much extent scales are summed together.

Concerning the acquisition of collaborative skills, qualitative data showed that students perceive themselves to have acquired those skills, more especially skills that make it possible people to work as a team: *'...being democratic in working in groups'* (2/m/400) *'Ability to express myself in public, in gatherings, which entail being able to communicate with people, sustaining people's interest while talking to them'* (3/f/300). *'I can say I ... able to be confident without having to fidget in a group because we have been doing it with my lecturers and course mates'* (4/f/300).

Table 5. Mean/Percentage Responses of Student Teachers' Perceived Emphasis on Creativity and Innovation Skills in the Course of their Training.

S/N	My programme emphasizes:	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean score	Remark
28	Using idea creation techniques such as brainstorming or concept mapping in our study	16.3	24.2	32.6	26.8	2.70	S/E
29	Generating our own ideas about how to confront a problem or question	6.3	26.8	31.6	35.3	2.96	S/E
30	Testing out different ideas and work to improve them when learning	11.1	18.5	40.2	30.2	2.89	S/E
31	Inventing a solution to a complex, open-ended question or problem	8.9	24.2	39.5	27.4	2.85	S/E
32	Creating an original product or performance to express our ideas studies.	16.4	29.6	41.3	12.7	2.50	S/E

Table 5 showed the mean/percentage responses of student teachers on the perceived emphasis on creativity and innovation skills in the course of their training. Mean response scores indicated that all the five items are emphasized to some extent. Percentage of agreement ranges from 54.0 to 66.9%.

Data from the interview showed that although the skills were emphasized they were not taught as explicit as they ought to be and depended on lecturers' ability: *'....have got to come up with variety of new methods. For instance if you want to teach students about certain crisis happening in a particular environment, you don't just start that by telling them stories of such crisis. You can also think about an idea, like how to present this in a pictorial view'* (1/m/400). '*Yes… but not like it should. Like in a course we did, we were grouped…to produce something. Though the program is there, it did not convey the concept of creativity and innovation'* (2/m/400). *'My program [emphasized] these skills to an extent. Due to the fact that lecturers have varying degrees of asking questions, it tends to be limited. Some of them will ask you questions that do not have definite answers. Through that you will be able to express your thoughts, think out, and be creative'* (3/m/300). *'Yes, most times in class when a question is asked, the lecturers do not expect one person to answer the question. They expect everyone to think and bring up their different ideas'* (4/m/300).

Table 6. Mean/Percentage Responses of Student Teachers' Perceived Acquisition of Skills on Creativity and Innovation During their Training.

S/N	To what extent have you acquired the following skills in the course of your training?	Not at all (%)	A little (%)	Some (%)	Very much (%)	Mean score	Remark
33	skills of using idea creation techniques such as brainstorming or concept mapping.	11.6	24.7	36.3	27.4	2.79	S/E
34	skills of generating your own ideas about how to confront a problem or question	10.0	25.3	33.7	31.1	2.86	S/E
35	skills for testing out different ideas and work to improve them when learning	9.5	21.1	43.2	26.3	2.86	S/E
36	skills for inventing a solution to a complex, open-ended question or problem	10	32.6	37.9	19.5	2.67	S/E
37	skills for creating an original product or performance to express ideas.	13.2	28.9	38.5	22.1	2.67	S/E

Table 6 showed that mean responses of the students indicated that they perceived themselves to have acquired the skills of creativity and innovation to some extent. Percentage agreement ranges from 60.6 and 69.5%.

Students, through the analysis of the qualitative data, perceived themselves to have acquired these skills to some extent, especially in creating their own products and solution to open ended questions: *'....the ability to bring to life, whatever I am communicating to my students, not just making them hear it but visualizing it and feeling it. Maybe through paintings, emotion pictures etc'* (1/m/400) *'we apply improvisation where we get materials from our environment…. Through my program, I am able to improvise towards solving my immediate problems'* (2/m/400).

3. Discussion

Findings revealed that on technology as a tool for learning, it is, to some extent, emphasized in teacher training except when it had to do with interacting with experts in local or global communities. This may indicate an increasing adoption of technology in the teaching and learning situation in Nigeria

in recent time, contrary to previous findings related to awareness and availability of ICT facilities in Nigerian universities which rated them low (Danner & Pessu, 2013; Denwigwe, 2015). However, qualitative data indicated the limit and direction of the emphasis bringing out the fact that variety of technology were not emphasized which could be attributed to low ICT facilities in Nigerian universities (Egoeze, Misra, Akman & Colomo-Palacios 2014). To some extent, student teachers perceived that they have acquired the skills for the use of technology as a tool for learning. The qualitative data showed that it may be as a result of both the emphasis laid on it and the extra efforts students make outside their classrooms to acquire these skills since the technology was not appropriately integrated in their classroom activities. The issue of not being appropriately integrated in classroom activities might have been a result of limited knowledge of their teachers in the use of the technology in teaching and learning (Denwigwe, 2015; Nwite, 2011). Policies and implementation strives in developing nations, Nigeria inclusive, have revolved within the peripheral ambits of implementation of ICT, and have not exceeded the practical levels of infusing and applying more sophisticated technologies in teacher education (Olakulehin, 2007).

Findings on emphasis on collaborative skills in the course of their training showed that it is emphasized to some extent. This is because these skills are indispensable in teacher education in the 21st century (Zygouris-Coe, 2012) and challenges arising in society may not be easily conquered by an individual alone. The complex challenges that arise as a result of the influx of information brought about ICT facilities require the coming together of individuals to work as a team to unravel these challenges. The findings revealed that student teachers were encouraged to collaboratively work on their assignments, projects, etc. to build in them the team spirit needed in this century. They perceived themselves to have acquired these skills but in the qualitative data, the issue of peer assessment was very silent confirming the relatively low rating of peer assessment related items in the quantitative data.

In creativity and innovation skills teacher trainees stated that these skills are emphasized in their training and that they have acquired the skills to some extent. They agree that open-ended questions are asked, brainstorming, coming up with new ideas to confront immediate problems, improvisation for solution of immediate problem, etc. are emphasized. This finding contradicts the findings of Eyiuche and Akudolu (2007) who reiterated that creativity is a blind spot in teacher education in Nigeria. This contradiction might have resulted because of the fact that Eyiuche and Akudolu focused on the instructional methods adopted to foster these skills in students and not necessarily if they are emphasized. They stated that lecturers did not use variety of learning experiences to encourage creativity. This could be untangled looking at the qualitative data which revealed that students perceived that these skills are not integrated in their studies as they should. So the method of instructed should be improved upon for better acquisition.

4. Conclusion

The study examined the extent teacher education in Nigeria is in line with the skills of the 21st century by looking at the perception of student teachers on the emphasis and their acquisition of the skills in the course of their training. Across the skills, student teachers perceived that these skills are emphasized to some extent except for very few sub-skills. Skills that are accomplished with the use of more sophisticated technologies were rated low by student teachers and through the qualitative data,

respondents emphasized that a lot needs to be done in integrating these skills in their learning. It was concluded that the teacher education in Nigeria could not be said to be completely out of tune with the demands of the 21st century that what needs to be done is to properly integrate these skills in classroom practices. Though there is paucity of research that have looked into these skills among teacher trainees in our universities, it is suggested that more robust research using other methods and larger sample size be conducted and that there should be: (1) intensive training and retraining of teacher educators in Nigeria on the demands and skills of the 21st century; (2) efforts made by stakeholders to restructure the curriculum for teacher trainees to acquire these skills by explicitly and implicitly teaching these skills; (3) provision of variety of technologies in teacher education institutes should be a priority to the government of Nigeria.

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