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EVALUATION OF COMPUTER SCIENCE EDUCATION PROGRAMME IN ENUGU STATE COLLEGES OF EDUCATION

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ABSTRACT

The main purpose of this study was to evaluate the computer science education programme in College of Education in Enugu State. Two research questions and two null hypotheses were formulated and tested at .05 level of significance. Evaluative research design was adopted for this study. The population of the study comprised all the 366 Computer Science Education lecturers and students currently in the 8 Colleges of Education in Enugu State. No sampling will be done. A structured questionnaire instrument was used for data collection. The questionnaire was validated by three experts from Mathematics and Computer Education Department, Faculty of Education, Enugu State University of Science and Technology (ESUT). To ascertain the internal consistency of the instrument, the researcher conducted a trial testing using 20 Computer Science Education lecturers and students in Federal College of Education Technical Umunze, Anambra State). The responses to the various items of the questionnaire were used in computing its reliability using Cronbach Alpha reliability Estimate. Reliability indices of .59, and .65, were obtained for the clusters respectively while the overall reliability index stood at .89. The researcher assisted by three research assistants administered the instrument directly to the respondents. The statistical tools for data analysis in the study were mean, standard deviation, and X^2 statistic. From the discussion of the findings, it was concluded that computer science education students admitted, and lecturer's qualification, met the requirement of NCCE. However, the findings of the study indicated that there is no significant difference in the mean response scores of lecturers and students on the admitted students' qualification and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State. But there is significant difference in the mean response scores of lecturers and students on the academic qualifications of lecturers, and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State. The researcher recommended among others, that serious efforts should be made by authorities of Colleges of Education to adhere to the stipulations of NCCE in Colleges of Education in Enugu State.

Keywords: *Evaluation, Computer, Computer Science Education, Colleges of Education*

Introduction

Education is the bedrock of all human development. Its importance in nation building cannot be overemphasized for it is a step towards making the citizenry keep fate with destiny. From ancient societies to modern nations one tool has proven most potent in the struggle for survival, growth and development. The tool is education which is proven capable in promotion and sustenance of national development (Wokocha, 2017). Education is a deliberate endeavour aimed at attaining specific objectives, including the transfer of knowledge, the development of skills, and the cultivation of character. It functions as a tool for national advancement, whereby the generation and synthesis of ideas, and the interplay between individuals and ideas, become integral components of this educational enterprise (Odoh Et al.). The National Policy on Education (2013), stated that education will continue to be highly rated in the national development plans, because education is considered as the most important instrument of change as any fundamental change in the intellectual and social outlook of any society has to be preceded by an educational revolution. It is indeed, an instrument that is most effective for enhancing national development. Iyamu (2020), described education not only as the means through which a culture is transmitted, but also the means through which it is transformed. Alumode (2018) on his own part, described education as a means by which an individual acquires the many physical and psycho-spiritual capabilities demanded by socio-cultural environment within which one is groomed to live and function. It is a process of socialization by means of which the individual is taught those norms, values, attitudes and skills that are desirable in the society. One thing is significant in the educational processes and that is; the emphasis on cultural and inherent values that need to be perpetuated for the survival and continuity of the society. Educational functions are therefore, defined in relation to the cultural value system of the society as a reflection of the needs and aspirations that can be promoted through the educational process (Olajide, 2017). Indeed, in Nigeria and perhaps, most other Less Developed Countries (LDCs) today, the searchlights of the societies have remained focused on the radical roles of school system. This is in recognition of the radical roles schools are expected to play in the process of national development.

The school system becomes an avenue through which societies educate their younger generations so as to enable them achieve their personal goals and objectives and that of the societies at large. Education in Nigerian is provided in stages or levels. These are the primary, junior secondary, senior secondary and tertiary education levels. The primary and junior secondary levels constitute what is known as the junior basic while the senior secondary level is the senior basic education. The tertiary level is made up of colleges of education, polytechnics, monotechnics and universities. The focus of this study is the colleges of education which is regarded among the tertiary education level.

Science education is one of the programmes being run at the tertiary level. According to Buseri (2017), Science education is an educational programme that is concerned with the application of educational (learning) theories especially those based on the philosophical, sociological and psychological perspectives in the endless search for knowledge, resulting in the development of the cognitive, affective and psychomotor domains through some systematic processes involving careful observation, deduction and testing by empirical means. Ihejiamaizu and Ochui (2016), posited that, it is the process whereby persons (teachers inclusive) are prepared or equipped with knowledge and skills to help ensure the effective dissemination and inculcation of scientific concepts, culture and thinking process and activities through generally accepted pedagogical strategies and tactics, based on the application of learning (teaching) and educational theories.

It must be emphasized that science education is thus more than the presentation or acquisition of scientific facts and skills. It includes the development of new ways of thinking, reacting and behaving - a development that reveals itself in increased skills, knowledge and thinking capacities to tackle problems of life, in new habits of action, in more desirable attitudes, in benefited personality and in improved character (Nwagbo & Uzoma, 2014). There are various Science education programmes being offered at the tertiary level. These include Computer Science education, Biology education, Chemistry education, Physics education and others. For the purpose of this study, emphasis is on Computer science education.

A computer is a device that accepts information (in the form of digitalized data) and manipulates it for some results based on a program, software, or sequence of instruction on how the data is to be processed. Techopedia (2023), defined computer as an electronic device that processes data according to instructions that are provided by computer programs. Techopedia added that computers can be used to perform a wide range of tasks, from basic calculations to complex operations involving artificial intelligence (AI). Ubaka (2018), posited that a computer can perform a vast rage of tasks, depending on its design and the software it runs. Ubaka noted that the common capabilities of computers include; performing complex mathematical calculations at high speed, creating, tracking, storing and transferring; facilitating creativity, communication, collaboration, and online learning; providing access to the Word Wide Web; conducting complex simulations and artificial intelligence; controlling and monitoring other computer systems; playing streaming media and computer video games; managing digital financial transactions; automating business processes and digitalizing health care and supporting the Internet of Things (IoT). It is worthy to note that acquisition of skills and competencies for these common computer capabilities can only be achieved through computer science education.

Computer science education is one of the science-based courses offered in

Nigerian Colleges of Education degree programme. It is a structured curriculum and set of courses designed to teach individuals or students the fundamentals of computer science. Its goal is to equip students with the knowledge and skills needed to understand and work with computers, software, algorithms, and various aspects of computing. According to Udoka (2016), computer science education or computing education is a field of teaching and learning the discipline of computer science, and computational thinking. Udoka added that it is a rapidly growing field that is essential to preparing students for careers in the technology industry and other fields that require computational skills. Computer science education can be looked at, as a process of educating the people on how to use a computer to run programs of diverse application including business, industry and commerce (Odoh, 2015). Computer science education is a system of skills acquisition in the use of computer to solve problems (Onovo, 2019). Here computer science education is seen as a subject organized to enable people to understand the functions, uses and limitations of computer and to provide an opportunity for the study of modern methods of information processing.

Computer science education helps to promote economic development, eliminating poverty and introducing social welfare (Nwagbo, 2015). The study of computer science education aims to increase understanding and allow communication between people regardless of their location (Okenyi, 2017). The vital role of the study of Computer science education in the economic industrial and public life of the learner and humanity cannot be overstressed (Odoh, 2024). Generally, Computer science education like other teacher education programmes is aimed at producing graduates and college teachers who are knowledgeable in the subject matter area and methodology of the discipline (Chinwoke, 2020). The recipients should have the relevant skills to succeed in the classroom teaching and learning of computer. To help them in understanding their students and carry out their work efficiently, they are exposed to relevant general education courses such as education curriculum studies, educational teaching methods, practicum in education and educational research methods. In line with the above, there is an Approved Minimum Academic Standards (AMAS) for education for all Nigerian tertiary institutions (Federal Republic of Nigeria (FRN), 2014. For Computer science education, there is a stipulated minimum standard of the resources to be provided by any tertiary institutions that wishes to run the programme. These minimum academic standards are in terms of personnel requirement, and students' admission requirements among others.

In the area of personnel requirement, according to the National Commission for Colleges of Education (NCCE) (2014) policy as amended, 20% of the teaching staff should be at the Professorial cadre. 25% should be at the Senior Lectureship cadre, while the remaining 55% should be at the cadres of Lecturers I, II and Assistant Lecturers. Undoubtedly, the quality of

education in the university and other levels of education are dependent to a reasonable degree on the quality and quantity of the teaching staff. It therefore means that effectively achieve the goals of computer science education, there is need to have adequate number of both teaching and non-teaching staff. To this end, the curriculum of computer science education could be effectively implemented at the tertiary institutions across the country.

In line with the stipulations of NCCE AMAS document (2014) candidate can be admitted into the College of Education degree programme in computer science education by one of the following ways;

a. The Unified Tertiary Matriculation Examination (UTME)
b. Direct Entry
c. Inter-University Transfer

a. *UTME Entry Mode;* the minimum academic requirement is credit level passes in five subjects at O'level in nationally recognized examination, including English, mathematics, computer science and two other science subjects relevant to the computer science education such as physics and chemistry at not more than two settings. In addition, an acceptable examination (UTME) in subjects such as English, Mathematics and computer science.
b. *Direct Entry Mode;* students seeking admission into computer science education could also be admitted through Interim Joint Matriculation Board (IJMB) such candidate are expected to have passes at GCE A 'level/IJMB or its equivalent in a minimum of two science subject relevant to computer science education programme to be considered for admission into 200 level. This is in addition to fulfilling the requirement of a minimum credit passes in English, mathematics, computer science and two other subject relevant to computer science.
c. *Inter-institution Transfer Mode;* students can transfer into 200 level courses provided they have relevant qualifications. Institutions are to certify that students meet the minimum requirement for the inter-university transfer.

Apan (2014), asserted that admission procedure into NCE degree programme appears to be at variance among private and government owned colleges of education, in the findings of Chidiobi (2014), private colleges of education comply to NCCE admission procedure as well as government owned colleges of education. Ubaka (2018), posited that the stipulations of NCCE as regards computer science education programmes and other academic programmes remain the basic for all colleges of education in Enugu State and Nigeria at large.

Despite NCCE guideline to ensure quality in the computer teacher education programme offered in the colleges of Education in Nigeria, it is sad to note that the quality of computer teachers is deteriorating at an alarming rate. It is

probably based on this that Neji (2017), noted that from the tertiary institutions, the turnout of trained computer teachers was impressive in terms of numbers but quality appears to be deteriorating at an alarming rate. Neji, further stated that the products of some of the tertiary institutions, in the area of computer teacher education were half-baked whereas Oludipe (2017), opined that a significant number of the computer teachers were not baked at all. This poses a serious concern and a need to explore computer science education programme in Enugu State Colleges of Education.

One major consequence of poor-quality computer teachers is the poor performance of students in computer. Olufunke (2017), posited that students' poor performance in computer is a function of the deficiency of the computer teachers among other factors. Interestingly, the yet persistent, under-average performance of computer undergraduates has continued to generate several research concerns among stakeholders on the factors responsible for such poor performance as well as possible ways to combat this poor trend of performance. Several reasons have been adduced for the problem. Akinolu (2016), hinged it on poor pedagogical skills. Neji (2017), blamed it on learners' personal characteristics. Several other researchers attributed it to inadequate, inappropriate and perhaps non-utilization of the available equipment in teaching and learning computer, these authors lament that teaching the subject in colleges of education in conventional classrooms can be defective (Olufunke 2017; Igboabuchi 2020; Oludipe 2021).

Following from the reactions of these authors and researchers, one may begin to question the effectiveness of the colleges of Education in the implementation of NCCE minimum academic standards with respect to computer science education. This is so because, effective implementation of these standards would mean the production of quality computer teachers who will eventually, enhance improved performance of students in computer science. It thus, becomes necessary to evaluate the extent to which these NCCE minimum standards for computer teacher education programmes are being implemented in the colleges of Education in Enugu State. This is what this study is set to do because no study known to the researcher ever investigated it. It is a gap that is long overdue to be filled.

Evaluation is generally defined as the process of determining the worth of an idea or something. Applied to education, it means the effort to determine the worth of an educational programme or curriculum (Ekpenyoung, 2018). Urevbu (2015), defined evaluation as the process of ascertaining the decisions, selecting related information and collecting and analyzing information in order to report data useful to decision makers in selecting among alternatives. Urevbu further described evaluation as the systematic process of obtaining valid data on any action or activity with a view to ascertain the extent to which progress has been made toward the underlying goals. It is an organized process of obtaining

information for judgments purposes. Ekpenyong (2018), defined evaluation as a complete process of identifying the objectives of an aspect of education and appraising the extent to which the objectives have been achieved. A closer look at these definitions of evaluation suggest that every evaluation process has one thing in common, and that is; determining the worth of educational programmes so as to make important decisions regarding it. It is important to also note that what is of value today may not be tomorrow. Hence, evaluation is and should be a continuous process and should as a matter of fact, be executed systematically. In this case the level of adherence or otherwise of NCCE AMAS for computer science education programme has not, to the knowledge of this research, ever been evaluated.

One influencing factor in the context of evaluation of educational policies, programmes and curricula is status of individuals within an institution. The colleges of education are made up of staff and students. In the context of this study, lecturers and students constitute the focus of the study. Wagner, Hassanein and Head (2018), pointed out that availability and utilization of instructional resources in institutions is influenced by the influence exacted by lecturers or the students which could make the procurement of facilities difficult or easy as the case may be. Urevbu (2015), posited that the lecturers may differ in the extent of adherence to the NCCE minimum academic standards in computer science education. This is expected in Nigeria because it is generally believed that lecturers determine their cause of action in the institutions. The use of instructional resources in computer education in colleges of education, according to Eke (2017), is more effective when lecturers pose the competency skills required. The students at the other hand through agitation, dedication and complaints equally determine the extent of adherence to the NCCE minimum academic standards in computer science education computer science education (Oludipe, 2017). Oludipe, added that procurement of educational facilities, use of instructional material are to a great extent dependent on the number of students.

Considering the fact that evaluation of educational programme is supposed to be a continuous process, literature available to the researcher did not show any recent work on evaluation of the adherence to the National Commission for Colleges of Education's benchmark for Computer Science Education programme in Colleges of Education in Enugu State. This created a gap and problem that necessitated this study. Hence the researcher considers it very necessary and timely to evaluate the Computer Science Education programme in Colleges of Education in Enugu State.

Statement of the Problem

In recent time now, there has been public outcry on the perceived continual decline in the standard of education offered and received in Nigeria. The educational system is said to be plagued by a number of issues and challenges which include quality and quantity of teachers, lack of equity,

attrition, inadequate large classes and students' poor performance in the examination, particularly in the colleges of Education. Under this condition, it may be difficult or almost impossible to achieve the objectives of colleges of education. This is because, college teacher education particularly is a complex process of education given to intending teachers to equip them with the skills, knowledge and competences to enable them become competent facilitators, guides, and moderators of learning for learners at every other educational level in Nigeria.

To achieve these, certain conditions need to be met for the teachers to be properly prepared (trained) for the job. Stipulation of the conditions as well as ensuring that they are met among the responsibilities of National Commission for Colleges of Education (NCCE). The NCCE as the organ of government that ensures quality of education in college of education which include Computer Science education in the country, has set the required standards by developing and documenting the BMAS for Computer Science education programme which the College of education are meant to adhere to or implement, with ultimate intention that it will adequately ameliorate or address the problems stated above among others.

The benchmark has been adopted for implementation for about 40 years in the colleges of Education. It is a source of worry and a gap yearning for urgent attention that no empirical study known to the present researcher has investigated how the minimum academic standards has been implemented for degree programmes in colleges of Education in Enugu State. The problem of this study stated interrogatively therefore is; to what extent have Colleges of Education in Enugu State implemented the measures stipulated by NCCE to enhance the production of high quality and competent computer science education graduates?

Purpose of the Study

The main purpose of this study is to evaluate computer science education programme in College of Education in Enugu State. Specifically, the study seeks to ascertain;

1. How the admitted students' qualification in Colleges of Education in Enugu State compared with minimum qualification set by NCCE for admission of students into computer science education programme.
2. How the academic qualifications of lecturers in Colleges of Education in Enugu State compared with the minimum academic qualification set by NCCE for lecturers in computer science education programme.

Research Questions

Two research questions guided the study, they are posed as follows:

1. How do the admitted students' qualification in Colleges of Education in Enugu State compared with minimum qualification set by NCCE for admission of students into computer science education programme?

2. How do the academic qualifications of lecturers in Colleges of Education in Enugu State compared with the minimum academic qualification set by NCCE for lecturers in computer science education programme?

Hypotheses

The study was guided by the following null hypotheses that were tested at 0.05 level of significance:

HO₁: There is no significant difference between the admitted students' qualification and minimum standard set by NCCE for admission of students into computer science education programme in Colleges of Education in Enugu State.

HO₂: There is no significant difference between the academic qualifications of lecturers and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State.

Methods

Evaluative research design was adopted for this study. Evaluation research design is a research design that is concerned with generating data or information that forms the basis of passing value judgment on programmes, method and policies in relation to a predetermined set standard (Idoko, 2011). Evaluative research design is appropriate for this study because it helps to evaluate computer science education programme in Colleges of Education Enugu State with regards to the NCCE Benchmark. The population of the study comprised all the 366 Computer Science Education lecturers and students currently in the 8 Colleges of Education in Enugu State. The population in made up of 43 lecturers and 323 students. The Colleges of Education include: Federal Colleges of Education, Eha-Amufu, Enugu State Colleges of Education Technical, Osisa Tech, Colleges of Education Enugu, African Thinkers Community of Inquiry College of Education, Peaceland Colleges of Education Enugu State, Colleges of Education Nsukka, Enugu State. Elizabeth Memorial Colleges of Education Nsukka, Enugu State, Institute of Ecumenical Education (Thinkers Corner). The total population of 366 Computer Science education lecturers and students participated in the study. The number of Computer Science education lecturers and students Colleges of Education in Enugu State is small and manageable, therefore the researcher involved all of them for the study, thus no sampling was done. The researcher developed a structured questionnaire instrument named 'Evaluation of Computer Science Education Programme' (ECSEP). The instrument is made up of two sections A and B. Section A is on the respondents' bio-data, while section B is the main body with 21 items arranged in two-clusters. The two clusters are in line with the two research questions that guided the study. Cluster 1 is on minimum entry academic qualification of the students with 10 items while cluster 2 is on minimum academic qualification for lecturers with 11 items. The response format is a 4 point scale type with Strongly Agree, Agree, Disagree, Strongly Disagree as the response options.

The questionnaire was validated by three experts from Mathematics and Computer Education Department, Faculty of Education, Enugu State University of Science and Technology (ESUT). To enhance good validation, the researcher attached the research topic, purpose of the study, scope of the study, research questions and hypotheses that were formulated to guide the study to the draft copies of the questionnaire sent for validation. The validators used them to assess the instrument in terms of clarity, relevance and suitability of the questionnaire items and its general purpose of the study. Comments, inputs and suggestion from the validators guided the researcher to restructure five items in the questionnaire, add nine items and correct grammatical errors pointed out. To ascertain the internal consistency of the instrument, the researcher conducted a trial testing using 20 Computer Science Education lecturers and students in Federal College of Education Technical Umunze, Anambra State). They were requested to complete the instrument at their own convenience. The responses to the various items of the questionnaire were used in computing its reliability using Cronbach alpha reliability Estimate. Reliability indices of .59, and .65, were obtained respectively, while the overall reliability index stood at .89, indicating that the instrument is highly reliable and therefore suitable for the study. The researcher assisted by three research assistants administered the instrument directly to the respondents. The research assistants were briefed by the researcher on the conduct of the exercise, during which they were acquainted with the purpose of the study and how the instrument should be administered and collected. Appointments were booked with the respondents for collection at a later date (for those who were not able to complete their copies of the instrument and return immediately may be because of their tight schedules.). Out of the 366 copies of the questionnaire distributed, only 343 questionnaire copies were retrieved, 23 copies were not retrieved. The statistical tools for data analysis in the study was mean, standard deviation, and X^2 statistic. Mean with standard deviation was used to answer the research question 1, and 2, while X^2 analysis at .05 level of significance and at appropriate degree of freedom was used to test the null hypotheses formulated for the study. On the decision rule, the rating of the numerical values assigned to the response options was added and divided by the number of the response options.

Thus:

$$\frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.50$$

This formed the basis for determining the criterion mean for decision rule for the study. It implies that, mean score of 2.50 and above were regarded as Agree, while mean score below 2.50 were interpreted as disagree. The decision for the null hypotheses was that if the X^2 is equal to or greater than the critical value at the chosen significance level .05 and appropriate degree of freedom, the null hypothesis of no

significant difference was rejected. If on the other hand the calculated X^2 value is less than the critical value, then the null hypothesis was not rejected.

Results

Research Question 1: How do the admitted students' qualifications in Colleges of Education in Enugu State do compare with minimum qualification set by NCCE for admission of students into computer science education programme?

Table 1: Mean Ratings and Standard Deviation of Admitted Students' Qualification in Colleges of Education in Enugu State.

S/N	Academic qualifications of admitted students in computer science education are:	Lecturers 43			Students 300			Overall 343		
		$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
1	credit level passes in any five subjects at O'level in WAEC only	3.49	.77	A	3.42	.80	A	3.30	.86	**A**
2	credit level passes in any five subjects at O'level in NECO only	3.56	.73	A	3.31	.90	A	3.17	.96	**A**
3	five credit passes at O'level including English, Maths, computer and two other relevant science subjects	3.12	1.05	A	3.29	.88	A	3.16	.93	**A**
4	passes at GCE A'level only	3.33	1.02	A	3.51	.64	A	3.42	.67	**A**
5	passes at Interim Joint Matriculation Board (IJMB) in addition to five O'level credit passes relevant to computer education	3.35	.87	A	3.51	.69	A	3.41	.74	**A**
6	Inter-University transfer mode at presentation of academic records	3.72	.45	A	3.57	.58	A	3.48	.61	**A**
7	First school leaving certification alone	3.44	.80	A	3.51	.77	A	3.40	.83	**A**
8	good credit passes at JUPEB in addition to O'level passes in subjects relevant to computer Education	3.65	.65	A	3.41	.78	A	3.30	.83	**A**
9	direct entry mode through presentation of previous academic records including O'level credits in five subjects relevant to computer Education	3.42	.91	A	3.57	.59	A	3.48	.63	**A**
10	Unified Tertiary Matriculation Examination (UTME) mode addition to five credit passes at subject relevant to computer Education	3.26	1.05	A	3.35	.79	A	3.25	.85	**A**
	WEIGHTED MEAN	**3.43**			**3.44**			**3.34**		**A**

Table 1 shows the data derived from the mean ratings of lectures and students regarding the academic qualifications of admitted students in computer science Education in colleges of Education in Enugu State. The Table shows that lecturers had mean ratings ranging from 3.12 to 3.72, while students mean ratings ranged from

3.29 to 3.57. The respondents had cluster means of 3.43 and 3.44, with corresponding standard deviations of .83 and .74 respectively. Overall, the mean ratings of the respondents ranged from 3.16 to 3.48, with a cluster mean of 3.34 and a standard deviation of .79. The similarity in standard deviations suggests that the respondents exhibited uniformity in their responses. Data analysis in Table 1 shows that lecturers and students agreed that admitted computer science education students aligned with the requirement of NCCE for admission in colleges of Educations in Enugu State.

Research Question 2: How do the academic qualifications of lecturers in Colleges of Education in Enugu State do compare with the minimum academic qualification set by NCCE for lecturers in computer science education programme?

Table2: Mean Ratings and Standard Deviation of Academic Qualifications of Lecturers in Colleges of Education in Enugu State.

S/N	Academic qualification of Lecturers in Computer Science Education are:	Lecturer 43			Student 300			Overall 343		
		$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec	$\bar{x}$	SD	Dec
11	Doctorate degree for Lecturer II position	3.51	.77	A	3.68	.47	A	3.61	.49	**A**
12	Masters degree for assistant lectureship	3.67	.71	A	3.41	.88	A	3.28	.95	**A**
13	A good Bachelors degree for assistant lectureship	3.42	1.10	A	3.41	.85	A	3.28	.91	**A**
14	Minimum of second class upper division at Bachelors degree for Graduate Assistant	3.47	1.03	A	3.57	.58	A	3.48	.61	**A**
15	Doctorate degree and at least three years post-doctoral teaching experience for Lecturer I position	3.58	.82	A	3.48	.72	A	3.38	.77	**A**
16	Doctorate degree, three years of teaching experience and good academic publications for senior lecturer position	3.79	.41	A	3.41	.78	A	3.31	.83	**A**
17	Five credit passes at O'level subjects including English, Mathematics and computer for Lecturer II	3.81	.39	A	3.62	.63	A	3.52	.68	**A**
18	Doctorate degree and considerable publications for associate professorship position	3.74	.62	A	3.51	.71	A	3.41	.76	**A**
19	Master degree and considerable publications for professorship position	3.53	.91	A	2.86	1.12	A	2.82	1.09	**A**
20	Three years experience as associate professorship and considerable academic publications for professorship position	3.77	.57	A	3.04	1.08	A	3.02	1.03	**A**

21	Considerable academic publications only for senior lectureship position	4.00	.00	**A**	2.96	1.13	**A**	2.92	1.09	**A**
	WEIGHTED MEAN	**3.66**		**A**	**3.36**		**A**	**3.28**		**A**

Table 2 shows the data derived from the mean ratings of lectures and students regarding the academic qualifications of computer science Education lecturers in colleges of education in Enugu State. The Table shows that lecturers had mean ratings ranging from 3.42 to 4.00, while students mean ratings ranged from 2.86 to 3.68. The respondents had cluster means of 3.66 and 3.36, with corresponding standard deviations of .67 and .81 respectively. Overall, the mean ratings of the respondents ranged from 2.82 to 3.61, with a cluster mean of 3.28 and a standard deviation of .84. The similarity in standard deviations suggests that the respondents exhibited uniformity in their responses. Data analysis in Table 2 shows that lecturers and students agreed that lecturers of computer science education aligned with the requirement of NCCE for qualifications in colleges of Educations in Enugu State.

HO₁: There is no significant difference between the admitted students' qualification and minimum standard set by NCCE for admission of students into computer science education programme in Colleges of Education in Enugu State.

Table 3: Chi Square Table of Frequencies on Difference between the Rating of Lecturers and Students of Colleges of Education on Qualifications of Students Admitted to study computer in Enugu State.

		Value	df	Asymp. Sig. (2-sided)	Decision
Item 1	Pearson Chi-Square	12.684[a]	3	.005	S
	Likelihood Ratio	19.678	3	.000	
	Linear-by-Linear Association	3.671	1	.055	
	N of Valid Cases	343			
Item 2	Pearson Chi-Square	2.739[a]	3	.434	NS
	Likelihood Ratio	4.978	3	.173	
	Linear-by-Linear Association	.956	1	.328	
	N of Valid Cases	343			
Item 3	Pearson Chi-Square	5.332[a]	3	.149	NS
	Likelihood Ratio	8.709	3	.033	
	Linear-by-Linear Association	4.367	1	.037	
	N of Valid Cases	343			
Item 4	Pearson Chi-Square	6.444[a]	2	.040	S
	Likelihood Ratio	10.843	2	.004	
	Linear-by-Linear Association	1.358	1	.244	
	N of Valid Cases	343			
Item 5	Pearson Chi-Square	4.514[a]	3	.211	NS
	Likelihood Ratio	7.847	3	.049	

	Linear-by-Linear Association	1.327	1	.249	
	N of Valid Cases	343			
Item 6	Pearson Chi-Square	3.659[a]	2	.161	NS
	Likelihood Ratio	6.244	2	.044	
	Linear-by-Linear Association	.341	1	.559	
	N of Valid Cases	343			
Item 7	Pearson Chi-Square	7.394[a]	3	.060	NS
	Likelihood Ratio	12.531	3	.006	
	Linear-by-Linear Association	3.060	1	.080	
	N of Valid Cases	343			
Item 8	Pearson Chi-Square	7.663[a]	3	.054	NS
	Likelihood Ratio	13.202	3	.004	
	Linear-by-Linear Association	3.646	1	.056	
	N of Valid Cases	343			
Item 9	Pearson Chi-Square	4.007[a]	2	.135	
	Likelihood Ratio	6.971	2	.031	NS
	Linear-by-Linear Association	.692	1	.405	
	N of Valid Cases	343			
Item 10	Pearson Chi-Square	8.020[a]	3	.046	S
	Likelihood Ratio	13.948	3	.003	
	Linear-by-Linear Association	5.554	1	.018	
	N of Valid Cases	343			

Table 3 shows that the p-values of Chi-square statistic for item 1, 4 and 10 are below alpha value ($p < .05$). Therefore, there is a significant association at 5% significance level between lecturers and students rating of acquisition of relevant qualification of admitted computer education students in Enugu State ($x^2 = 12.684$, df = 3, $p = .005$). Hence, the null hypotheses are rejected in those items. On the other hand, items 2, 3, 5, 6, 7, 8 and 9 had p value of Chi-square statistic that is above alpha value of .05 ($p > .05$). Therefore, there is an insignificant association at 5% significance level between lecturers and students rating on admitted students' acquisition of relevant qualification into computer science education in Enugu state ($x^2 = 2739$, df = 3, $p = .434$). Hence, the null hypotheses are not rejected in those items.

HO_2: There is no significant difference between the academic qualifications of lecturers and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State.

Table 8: Chi Square Table of Frequencies on difference between the rating of Lecturers and Students of Colleges of Education on qualifications of lecturers to teach computer in Enugu State

		Value	df	Asymp. Sig. (2-sided)	Decision
Item 11	Pearson Chi-Square	1.716[a]	1	.190	NS
	Continuity Correction[b]	1.306	1	.253	
	Likelihood Ratio	1.767	1	.184	
	Fisher's Exact Test				
	Linear-by-Linear Association	1.711	1	.191	
	N of Valid Cases	343			
Item 12	Pearson Chi-Square	11.800[a]	3	.008	S
	Likelihood Ratio	18.047	3	.000	
	Linear-by-Linear Association	3.451	1	.063	
	N of Valid Cases	343			
Item 13	Pearson Chi-Square	13.256[a]	3	.004	S
	Likelihood Ratio	20.144	3	.000	
	Linear-by-Linear Association	3.742	1	.053	
	N of Valid Cases	343			
Item 14	Pearson Chi-Square	3.659[a]	2	.161	NS
	Likelihood Ratio	6.244	2	.044	
	Linear-by-Linear Association	.341	1	.559	
	N of Valid Cases	343			
Item 15	Pearson Chi-Square	9.922[a]	3	.019	S
	Likelihood Ratio	15.589	3	.001	
	Linear-by-Linear Association	2.035	1	.154	
	N of Valid Cases	343			
Item 16	Pearson Chi-Square	7.663[a]	3	.054	NS
	Likelihood Ratio	13.202	3	.004	
	Linear-by-Linear Association	3.646	1	.056	
	N of Valid Cases	343			
Item 17	Pearson Chi-Square	6.343[a]	2	.042	S
	Likelihood Ratio	10.770	2	.005	
	Linear-by-Linear Association	5.411	1	.020	
	N of Valid Cases	343			
Item 18	Pearson Chi-Square	4.693[a]	3	.196	NS
	Likelihood Ratio	8.012	3	.046	
	Linear-by-Linear Association	1.246	1	.264	
	N of Valid Cases	343			
Item 19	Pearson Chi-Square	23.253[a]	3	.000	S
	Likelihood Ratio	35.414	3	.000	
	Linear-by-Linear Association	21.168	1	.000	
	N of Valid Cases	343			
Item 20	Pearson Chi-Square	13.821[a]	3	.003	S
	Likelihood Ratio	22.626	3	.000	
	Linear-by-Linear Association	12.333	1	.000	

	N of Valid Cases	343			
Item 21	Pearson Chi-Square	20.251[a]	3	.000	S
	Likelihood Ratio	32.127	3	.000	
	Linear-by-Linear Association	15.520	1	.000	
	N of Valid Cases	343			

Table 4 shows that the p-values of Chi-square statistic for item 12, 13, 15, 17, 19 and 21 are below alpha value ($p < .05$). Therefore, there is a significant association at 5% significance level between lecturers and students rating of acquisition of relevant qualification of computer education lecturers in Enugu state ($x^2 = 11.800$, df = 3, $p = .008$). Hence, the null hypotheses are rejected in those items. On the other hand, items 11, 14, 16 and 18 had p value of Chi-square statistic that is above alpha value of .05 ($p > .05$). Therefore, there is an insignificant association at 5% significance level between lecturers and students rating on computer Education lecturers acquisition of relevant qualification for teaching of computer science education in Enugu state ($x^2 = 1.716$, df = 1, $p = .190$). Hence, the null hypotheses are not rejected in those items.

Discussion of Findings

Table one attempted to elicit the perception of the respondents on the admitted students' qualifications in Colleges of Education in Enugu State compared with minimum qualification set by NCCE for admission of students into computer science education programme. The finding revealed that lecturers and students agreed that computer science education students admitted to study computer met the requirement of NCCE. This finding is in consonance with Chidiobi (2014), who posited that private colleges of education comply to NCCE admission procedure as well as government owned colleges of education. The finding however contaradicts the assertion of Apan (2014), who noted that admission procedure into NCE degree programme appears to be at variance among private and government owned colleges of education. it should be noted that the stipulations of NCCE as regards computer science education programmes and other academic programmes remain the basic for all colleges of education, thus there should be frequent monitoring to ensure compliance to the stipulations of NCCE by colleges of education in Enugu State.

Comparison of the lecturers and students on Table 3 showed that there is no significant difference in the mean response scores of lecturers and students on the admitted students' qualification and minimum standard set by NCCE for admission of students into computer science education programme in Colleges of Education in Enugu State. This finding agrees with Ubaka (2018), who posited that the stipulations of NCCE as regards computer science education programmes and other academic programmes remain the basic for all colleges of education in Enugu State and Nigeria at large. Therefore, serious efforts should be made at adhering

to the stipulations of NCCE in Colleges of Education in Enugu State.

Table two sought to find out academic qualifications for lecturers compare with the minimum academic qualification set by NCCE for lecturers in computer science education programme in Colleges of Education in Enugu State. The findings revealed that the lecturers and students agreed that computer science education Lecturer's qualification met the requirement of NCCE. This finding is in consonance with Chidiobi (2014), who stated that lecturers in the private as well as those of the government owned colleges of education poses at least master's degree at the point of employment, having adequate number of lecturers and lecturers do publish in journals that have impact factor and they are promoted after academic assessment thus, showing that both private and government owned colleges of education in Nigeria adhere to NCCE regulations. This finding contradicts the assertions of Neji (2017), that most computer science teachers were half-baked. The finding disagrees with Oludipe (2017), who posited that significant numbers of computer science teachers were not baked at all. The assertions of Neji and Oludipe may refer to computer science teachers under performance and inabilities, which do not mean that such teachers were not employed with the requisite academic qualification as stipulated by NCCE. The authorities of colleges of education should insist on the minimum academic qualification set by NCCE for lecturers' employment in computer science education programme in Colleges of Education in Enugu State.

Comparison of lecturers and students on the academic qualifications of lecturers and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State, indicated that there is a significant difference in the mean response scores of lecturers and students on the academic qualifications of lecturers and minimum standard set by NCCE for computer science education programme in Colleges of Education in Enugu State. This finding could be as a result of the fact that computer science education students lack knowledge of lecturers' academic qualifications and the minimum standard set by NCCE.

Recommendations

Based on the findings of the study the following recommendations were made.

- Serious efforts should be made by authorities of Colleges of Education to adhere to the stipulations of NCCE in Colleges of Education in Enugu State.
- There should be frequent monitoring of colleges of education to ensure compliance to the stipulations of NCCE.
- The authorities of colleges of education should insist on the minimum academic qualification set by NCCE for lecturers' employment in computer science education programme in Colleges of Education in Enugu State.

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