INDISPENSABILITY OF QUALITY ASSURANCE IN ENSURING QUALITY COMPUTER EDUCATION DELIVERY AT COLLEGES OF EDUCATION IN NIGERIA

[1]Olabimitan, Emmanuel Oludare, [2]Badariyya Sani Iliyasu, [3]Saadatu Abubakar (Ph.D)

[1,2,3] Computer Science Department
School of Secondary Education (Science)
Federal College of Education (Technical), Bichi, Kano State

Correspondence: emmanuelolabimitan@gmail.com

Phone number: 08065607505

Abstract

This paper examines the critical role of quality assurance (QA) in the Nigeria Certificate in Education (NCE) Computer Education programme in Nigerian Colleges of Education. Computer education is one of the cornerstone of human capital development in an increasingly digitalized global economy. In Nigeria, Colleges of Education bear the mandate of training teachers to deliver this essential knowledge at the basic education level. However, achieving the intended objectives of the NCE Computer Education programme largely depends on the effectiveness of quality assurance mechanisms within these institutions. Drawing from policy documents, existing literature, and practical realities within the system, the paper discusses internal and external quality assurance processes as coordinated by institutional Quality Assurance Units and the National Commission for Colleges of Education (NCCE). Emphasis is placed on minimum academic standards, staffing quality, adequacy of facilities, curriculum relevance, monitoring of instruction, and professional development of lecturers. The paper also identifies major obstacles to effective quality assurance, including over-enrolment, inadequate funding, shortage of qualified staff, poor infrastructure, brain drain, and declining quality of student intake. To address these challenges, the study highlights strategic measures such as enforcing professional standards in staff recruitment, ensuring manageable student–teacher and student–facility ratios, strengthening internal quality assurance structures, and mandating continuous capacity building for computer education lecturers. The paper concludes that without deliberate and sustained commitment to quality assurance, the goals of NCE Computer Education will remain difficult to achieve. It therefore recommends stronger collaboration among regulatory bodies, improved funding, and professional management of computer education programmes in line with international best practices to enhance graduate competence, employability, and national development.

Keywords: Minimum Academic Standard; Brain drain; Teacher Training; Nigeria Certificate in Education (NCE); National Commission for Colleges of Education (NCCE).

1.0   Introduction

Computer education in a broad sense may be defined as the process of acquiring the basic computer knowledge, ideas, skills, and other competencies so as to understand the basic terminologies, weaknesses of computers, potentialities of computers and how computers can be used to solve everyday problems (Olelewe, 2018). Now that computers are becoming increasingly popular in the work force (industries) and also as the whole world is becoming digitalized, it becomes crucial that average person should at least be acquainted to a reasonable extent with the programs and the general operation of the computer. According to Usman (2016) the training and development of human capital resources of any nation greatly depends on the educational sector and through its systems. And this is a pointer to the fact that, every sector of the nation's economy cannot be exploited optimally, if the human resource which is being depended upon lacks quality and sound education. Since education is a major factor in the development of every nation's economy and the developed countries all over the world have used it to build up their capital human resources, it has to be seen by developing nation's as a tool that gives a nation a lead way and focus to sustainable economic growth (Barineme, 2014).

However, College of Education is one of the higher educational institutions in Nigeria that was specially established for the training of teachers to meet the needs of the country in education sector. It is one of the tripods of tertiary educational institutions in Nigeria. College of Education has a mandate of training teachers who will be awarded the minimum teaching qualification, that is Nigeria Certificate in Education (NCE), a certificate that qualifies one to teach in primary school, Junior Secondary School (JSS) and Technical Colleges in Nigeria, the programme that takes minimum of three years to complete.

Computer education in the context of this paper, is one of the programme being run by Colleges of Education in Nigeria to cater for the training of Computer studies teachers for the basic education level. Going by the drafted curriculum for Computer science education programme by the National Commission for Colleges of Education (NCCE), the main objectives upon which Computer education curriculum was introduced to Colleges of Education in Nigeria are that, students upon completion of the programme, should be able to:

a.   effectively teach computer studies at the primary, secondary and technical schools;

b.   write computer program and process data with maximum speed and accuracy;

c.   demonstrate reasonably high level of competence in preparation for further studies in computer science education;

d.   motivate pupils and learners' interest in the study of computer studies by adopting appropriate ICT teaching and learning strategies;

e.   apply the use of computer as an aid in daily life activities; and

f.   maintain computer hardware.

However, for the above objectives to be achieved, there is need for quality enhancing strategies that will ensure the production of quality graduates for national development. Such quality enhancing strategies may include adequate funding, effective monitoring and evaluation, review of programme, recruitment of quality staff, use of quality course materials, effective assessment and development of staff as well as standardization of requirements for intake of quality students. In addition to these, application of appropriate methods in the arrangement of learning experiences to help a learner achieve a desirable change in behaviour, and by extension, a change in society. Nigeria as a nation strives to ensure that qualitative computer education is delivered to its citizens in line

with the Nation's philosophy of education as reflected in the National policy on Education (FRN, 2013). The document states that education in Nigeria is adopted as an instrument "par excellence," for effecting national development and growth so as to produce citizens that are dynamic, both in thought and deeds, self-sufficient, effective, united and show civil responsibility". In the bid to ensure that some measures of quality control are put in place in the educational system, the government took a step further to state its determination to regulate the establishment of schools, supervision and inspection on regular basis to enhance and ensure conformity to stipulated standards (FRN, 2013). Thus, bring about quality assurance in education sector. Quality assurance is therefore the measure of attaining desirable levels of accountability in the educational institutions

2.0   Quality Assurance and NCE Computer Education

Quality assurance in academic institution can be referred to as ensuring that all the processes involved in the instruction of students remain standardized at all times. According to Okebukola (2004) presents academic quality assurance as a process of continuous improvement in the quality of teaching and learning activities which will be achieved via pathways of employing mechanisms internal and external to the system. It is ensuring that at least the provision of the Minimum Academic Standards (MAS) documents are attained, maintained and enhanced (Omoregie, 2005). The enabling decree establishing the National Commission for Colleges of Education (NCCE) has mandated it among other functions; to make recommendation on the National Policy necessary for full development of teacher education and the training of teachers; lay down minimum standards for pre service teacher programme including computer education and accredit their certificate and other academic awards. Admittedly, the content minimum academic standards design for each pre service teacher programmes, (computer education inclusive) specify the performance criteria which should be complied with by colleges of education in Nigeria. And also, full compliance of the colleges of education with the approved criteria will lead to its full accreditation. In this respect, it implies that for an individual to acquire a NCE Computer education certificate, he/she must meet the minimum standards of the institution before issuance of certificate. In the bid to ensure quality service delivery and need to match teacher education with societal requirements for quality man power development was thus the key rationale for the concept of quality assurance in education.

According to Adegbesan (2011), for quality education to be achieved in a nation, the principal actors of education who are teachers, learners and the environment must be cooperatively organized. This implies that, teachers must be adequate in quality and quantity, the students must be well trained and adequate facilities must be provided as well. As stated in the provision of the NCCE (2020), to enhance the effectiveness of Quality Assurance in Colleges of Education Nigeria, assessment shall be conducted at two levels, namely:

1. Internal Quality Assurance (to be conducted by the institution offering the NCE programmes).

2. External Quality Assurance (to be conducted by the NCCE).

Internal quality assurance (IQA) measures learner achievements, assessor judgments, assessor knowledge and the standard of processes and procedures within an institution. This is in order to ensure that learners can achieve qualifications, assessors are making the correct assessments and an institution is offering a high-quality service. Internal quality activities also ensure staff working within an institution is qualified and competent. According to the NCCE (2020), each college of education should have an internal Quality Assurance Unit that will monitor assessment in the institution, and that this IQA should collect, collate, analyse, and regularly update all available forms of data on assessment (from schools, departmental examination Officers, student notebooks, teachers' learning programmes or course outline, etc.).Internal Quality Assurance includes monitoring the training and assessment activities and the quality of evidence learners produce. In Colleges of Education, the Directorate of Quality Assurance is commissioned by to coordinate the maintenance of internal quality assurance

of the College of education system vide the directive of the National Commission for Colleges of Education (NCCE) that an autonomous Quality Assurance unit should be established in each College of Education in Nigeria. On the other hand, External Quality Assurance is responsible for accreditation exercise handled by the NCCE to ensure that NCE awarding institutions are meeting the Minimum Standards (or in the case of proposed institutions that they have the potential to meet Minimum Standards). According to NCCE curriculum implementation framework for NCE, all NCE awarding institutions must establish an internal quality assurance unit to ensure that the guidelines provided in the curriculum implementation framework are followed. Consequent upon the directive of the NCCE, the individual academic board of colleges of education, approved the Directorate of Quality Assurance to be in-charge of the internal quality assurance of such institution.

In other words, it is imperative for the operatives of NCE Computer education programme to ensure that computer laboratories are adequately equipped with functional computer system as well as other teaching facilities in an effort to assure quality instructional delivery in colleges of education in Nigeria. Otherwise, computer pre service teacher training will be compromised. More so, in the current contemporary world, developing and reviewing of the curricula should be regularly carried out in order to ensure that the content to be taught reflects the rapidly advancing frontiers of technological knowledge.

It is on this note therefore that, this paper focuses on ensuring internal Quality Assurance in Colleges of Education especially in computer education programme vis-à-vis the Benefits and Challenges

2.1 Strategies Require to Ensure Quality NCE Computer Education Delivery

In order to ensure quality NCE Computer education delivery, there is need to consider the following strategies:

1. Establishment of functional and Autonomous Supervisory Body to ensure quality delivery of computer teachings and practical activities : to ensure quality computer education delivery there is a need for a functional and independent monitoring team to ensure system of quality NCE computer education at all levels. A watch -dog body is necessary to ensure quality as well as define benchmark against which to judge. Standards and quality such a body could be set up by the government. But to be effective, it should be autonomous and have universal acceptability and credibility (Ijeoma & Osagie, 2005).

2. Enrolling Manageable number of computer students: At the colleges of education level, one of the major areas requires attention of quality assurance in Computer Education include student teacher ratio and student computer facilities ratio among others. A good student-teacher ratio is 25:1 that takes cognizance of available instructional facilities of student – computer facility ratio of 2:1 as require by the minimum standard would enhance quality output of instructional delivery in computer education. However, the Quality Assurance unit of the colleges of education, part of whose duty should be to ensure standard in this regard, this unit should discourage population explosion in student's enrolment, without a commensurate political will by the Nigerian government to employ enough teachers as well as build new structures is no longer tolerated.

3. Controlled Entrant of Non-Professionals: At the Colleges of education level and in computer department in particular, people without teaching qualification should not be allowed to teach no matter their political connection. An assurance of quality NCE computer education delivery at this level can be addressed when Bachelor of Science degree in Education (Computer Science) (B.Sc.Ed), Bachelor of science degree (Computer Science) (B.Sc) with relevant education degree like post graduate diploma in education (PDE) are enforced as the minimum qualification for teaching at NCE computer department. Just as we have in other specialized profession, a non-professional teacher for instance, cannot be

employed to practice in profession like medicine or law if he/she is not a medical Doctor or a Lawyer as the case may be. This is an aberration in such profession.

In other words, controlled entrants of non-professional can serve a good purpose for assuring quality in computer education delivery. Considering the nature of computer education that deals with both theoretical and practical knowledge, only qualified instructors should be employed to teach. This is because only a certified professionals will possess the necessary code of ethics of the Teaching Profession and necessary technical know-how to translate theory to practical there by leading to quality computer education delivery.

4. Mandatory Refresher course and workshops for NCE computer education teachers

 Refresher course for instructors may also serve to improve standard and consequently assure quality in computer education especially when they serve as a condition for promotion. Due to very rapid changes in the field of information technology and computer science, it should be mandatory for all computer science staff to regularly undergo workshops/refresher courses/programmes in the field and belong to relevant professionals' bodies. This is considered against the premise that most computer educators, since after graduation, have not been re-trained either through in-school programmes or relevant seminars and workshops despite the fact that knowledge in ICT doubles almost every year. This will therefore guarantee quality computer education delivery at colleges of education level.

2.2 What Make Quality Assurance to be Indispensable in Colleges of Education in Nigeria

1. Planning/organizing awareness and programmes sensitization: The directorate of Quality Assurance is required to perform its duty to create awareness on the quality and the standard in the colleges of education according to the National Commission for Colleges of Education rules and regulations and mount series of sensitization programmes to enlighten and educate the college environment/community that quality cannot be compromised.

2. Collection of data and useful information: The Directorate of Quality Assurance is to generate formative data which can be useful for the improvement of the quality management and delivery of the Nigeria Certificate of Education in the colleges through proper monitoring and assessment exercises e.g. number of inputs, enrolment, output etc.

3. It helps in monitoring and assessment of instructions/supervision: These are another roles of Quality Assurance directorates to ensure consistent and thorough monitoring of the quality and standards of instructional delivery are maintained in colleges of education, and its cover area such as examination questions, continuous assessment of the student's attendance of the lecturers etc.

4. Accountability: Quality assurance through monitoring ensures that those in charge of financial resources utilize them prudently and judiciously, especially for the purpose to which such fund are given. Likewise, it is to make the staff and management provide a basis of accountability to the government for their huge financial commitment to the course of teacher education in Nigeria.

5. Enforcement of laid down rules and regulations: National Commission for Colleges of Education (NCCE) that saddles the affairs of colleges of education has the laid down rules and regulations that govern the colleges. It is the right duty of Quality Assurance to ensure that every segment of the colleges complies to the laid down rules and regulations and doing the right thing the right way to the last letter as far as the issue of quality and standard of college are concerned

6. Adequacy of the facilities: The Quality Assurance helps in determining the adequacy of the facilities available for quality control by ensuring that learners' learning is well supported with current, relevance

and adequate resources and that, those actively involved both in school administration and teaching have clear job descriptions and know their job responsibilities.

7. Professionalism of Teaching Career: It is also the role of Quality Assurance to ensure that professionalism of teaching career is enhanced by ensuring that appropriate pedagogic practices in the right way are employed by the student teachers in the colleges of education during teaching practice in order to be professionally sound and competent.

8. Evaluation/provision of periodic report: The Directorate of Quality Assurance through its activities provide a periodic report either monthly, quarterly, end of semester or session basis to the management for self-assessment records of the schools and college at large.

9. National Accreditation of the Colleges of Education Academic Programmes. The National Commission for Colleges of Education (NCCE) has a fundamental function of the quality assurance to oversee the internal and external accreditation exercise of colleges of education. Also, equally the role of the unit to carry out internal accreditation exercises on annual basis and submit the report to the college management and headquarters of NCCE. The college has to make appropriate provision to any area discovered for needs

2.3   Obstacles to Quality Assurance in Colleges of Education

There are lots of factors that hinder quality assurance of various pre service teacher education programmes including computer education programme in colleges of education in Nigeria, such factors include:

1.   Over Population: the desire to be educated gave birth to population in school explosion and massive enrolment of student into the higher institutions. over population is the one of the major cause of situation whereby the facilities in school are not enough to cater for the proper teaching and learning. Currently, Colleges of education especially in Northern part of the country is experiencing student population explosion due to increase in enrolment without the required or expansion of facilities. And this population explosion of students has brought such consequences of over-crowded classrooms, laboratories and other learning materials were now grossly inadequate because of insufficient funding (Omoregie, 2005). This has its implication on standards and quality in form of low growth and productivity of students and graduates of the colleges of education.

2.   Dearth state of Facilities and Equipment: The poor state of facilities and equipment such as classrooms, offices, exam halls, laboratories, libraries, tables, chairs, desks, power supply, water, good roads network within the schools and other teaching equipment, has been a major problem to academic quality assurance in the colleges of education. The adequate provision of the infrastructural facilities and teaching equipment favour delivering of quality education and their absent affects delivering of quality academic services (Akpochafo & Filho, 2007). Today, a good number of Nigerian colleges of education are offering technological education programmes such as computer education programme. The question is how many of these colleges of education have basic facilities and equipment required to run the programmes. In most cases today, we have students graduate without touching computer. Therefore, provision of the relevant educational facilities and equipment is vital to the provision of quality educational services to all students in the colleges of education.

3.   Shortage of Staff: Inadequate lecturers or academic staff is one of the major challenges facing the teacher education institutions in Nigeria. Lecturers are strong member of the higher institution community, and their roles cannot be underestimated The success of any education system depends to a very large extent on the supply of teachers in terms of quantity and quality. According to Akpochafo and Filho (2008)

teachers are the quality indicators in the educational process. The absent of adequate academic staff in majorities of the colleges of education is responsible for high teacher-student ratio which invariably hampered the standard and quality of education delivery. Currently, colleges of education are face with problem of shortage of highly experienced academic staff. For instance, ratios by discipline are far from encouraging especially in the humanities and some science-based disciplines (Omoregie, 2005).

4.   Brain-Drain: Brain-drain refers to massive movement of professionals from developing countries to developed countries to seek for greener pasture and settle there. Brain-drain is one of the commonest problems facing colleges of education just like other higher institution of learning in Nigeria. Oni (2006), submitted that many experienced and young lecturers are fleeing because of poor renumeration and welfare packages of the teaching job into more rewarding and more challenging sectors of the economy and even migrate to oversee countries. The result of the faculty exodus could be observed in the quality of graduates being produced from such institutions

5.   Inadequate Funding: A well-structured funding arrangement is imperative for meeting the cost of providing adequate educational service in colleges of education. However, inadequate funding affects the provision of facilities and the recruitment of the desired manpower to implement the programmes that have been developed. This in turn affects the academic delivery in the colleges of education.   The inability of the Nigerian government to objectively accept and implement the 26% funding formula for education recommended by the UNESCO is creating negative impact on the performance and sustainability of higher education. The inadequate funding is responsible for the poor quality of education as a result of inadequate lectures, inadequate infrastructural facilities, poor supervision and inadequate instructional.

6.   Quality of Students: These days, the quality of fresh students admitted into the system is low. This is because their preparation at the primary and secondary levels were poor and many of them passed their examination by relying heavily on examination malpractice (Akpochafo and Filho, 2008). Students now see the acquisition of credentials/certificate as a do or die affair, even if it means attaining the certificate not on the basis of learning. As noticed by Akpochafo and Filho (2008), students in Nigeria higher institutions are not there for serious and committed academics, they shun the strain and rigour associated with higher education. They further maintained that it becomes difficult to get students to learn, to investigate, research to engage in independent study. The bottom line is that the quality and standard of students are no longer assured.

3.0   3.0 Conclusion

This paper considered quality assurance and assurance of quality of the NCE computer Education in Nigeria and observed that from reality on ground. NCE computer education is experiencing difficulties in assurance of quality as could be seen above as: lack of standardization, entrants of non-professionals, and even public image with multiplier negative effects on its products in terms of skill acquisition, acceptability, marketability and employability in the labour market. It was then concluded that computer Education must be adequately and professionally managed for improved pedagogy, quality output and parity with other professions in line with international best practices by the relevant supervisory bodies.

4. Recommendations

From the forgoing, it is hereby recommended that:

1. The Federal and State Ministries of education should ensure that student's enrolment do not exceed the capacity of the available teachers and facilities while ensuring that such teachers are frequently re-trained through refresher courses, workshops and conferences.

2. It is imperative that computer department in colleges of education should be adequately equipped and staffed to carry out meaningful teaching and learning. Adequate facilities are very vital to the successful training and certification of products.

3. Government should make staff development and welfare a priority, lecturing should be made more attractive – better pay, funds for research and improved work environment. Teachers training and re-training to acquaint them with latest development in their field especially in computer profession, effective teaching cannot be achieved without sound knowledge of new technologies and innovation in the field.

4.. To ensure quality in NCE Computer education programme and other discipline, then NCCE need to collaboration with the various relevant organ like TRCN to check entrant of non- professionals into the profession and ensure that only qualified teachers are employed at all levels of educational institution.

R e f e r e n c e s

Adegbesan, S.O. (2011). Establishing quality Assurance in Nigerian Education System: Implication for Educational Managers. *Educational Research and Reviews*, 6(2), 147-151

Akpochafo W. A., Filho W. L. (2007). "An overview of the barriers to curriculum implementation in Nigerian universities". *International Journal of Continuing Engineering Education and Life-Long Learning*. 12 (10) 275-287.

Bareneme, B.F. (2014). The computer: An Indispensable Millennium Educational tool. *Computer Education Research Journal (CERJ)* 2(1):1-5

FRN (2013) National policy on education. Abuja. NERDC press

Ijeoma, M. E. & Osagie, R. O. (2005), Strategies for quality assurance in higher education. *Nigerian Journal of Educational Administration and planning,* 5 (2) 271-282.

Jaiyeoba A. O., & Atanda A. I. (2005). "Quality sustenance in Nigeria educational system: Challenges to government". In G. O. Akpa, S. U. Udoh & E. O. Fagbamiye (eds). Deregulating the provision and management of education in Nigeria. Jos: *The Nigerian Association for Educational Administration and Planning (NAEAP)*

Okebukola, P.A.O. (2004). Curriculum implementation in Nigeria, strategies for the 21 st century in Noah, A.O.K., Shonibare, D.O., Ojo, A.A. and Olujuwon, T. (Eds) curriculum implementation and professionalizing teaching in Nigeria. Lagos: *Central Educational Services.*

Olelewe, C. J. (2018). Utilization of Information Communication and Technology for Sustainable Manpower Development among Technical Educators in Tertiary Institutions in Rivers State. *International Journal of Innovative Information Systems & Technology Research* 6(2):48-58.

Omoregie N., (2005). Studies in Education 8: 128-134.

Oni B., Dabalen A. (2006). Labour marked prospects for university graduates in Nigeria; Mimeograph Report of World Bank, NISER

Usman K. O. (2016). Exploring Information Technologies in Support of Teaching and Learning. A keynote Address Presented at Computer Association of Nigeria Conference University of Nigeria Nsukka