DETERMINATION AND COMPARISON OF THE QUALITY OF LECTURERS IN THE OPEN AND CONVENTIONAL UNIVERSITIES IN LINE WITH THE NATIONAL UNIVERSITIES COMMISSION BENCHMARK

Kareem Adeyinka Oluwaseun

Department of Science and Technology Education,
Obafemi Awolowo University, Ile-Ife, Osun State
Email: adeyinkareem@gmail.com

Abstract

The study determined and compared the quality of lecturers that Implement BEC in both types of the University. These were with a view to providing information about the gap in the implementation of BEC as well as determine the level of implementation of BEC in both university types. The study adopted descriptive survey research design. The population for the study comprised of all Biology Education lecturers and the departments that handle Biology Education courses in both University types in Southwestern Nigeria. All the three Federal Universities that offer Biology Education except the newly established Federal University in Ekiti State and the Open University Study Centre in the states where they are located were used for the study. The study sample included all Biology Education lecturers found in the selected schools. One research instrument was used for the study, namely: Biology Education Lecturers Questionnaire (BELQ). BELQ was used to collect data about the Universities' Biology Education lecturers. The instruments were validated by curriculum experts in the Faculty of Education in Obafemi Awolowo University and thus were judged reliable. A reliability of 0.84 for BELQ was obtained for the instruments using Cronbach Alpha Co-efficient. The data collected were analyzed using the descriptive statistics of frequency and percentages. It was revealed from the study that the Open University Study Centres have a low level of availability of facilitators (lecturers) while the lecturers of the Conventional Universities have a high level of content knowledge and year of experience but low level of pedagogical knowledge. The study concluded that there is a difference in the attainment of the specified conditions in both University types. It concluded that most of the BEC lecturers do not have educational qualification to produce trained Biology teachers.

Introduction

The importance of science teaching in the Nigerian society cannot be overestimated. This in turn places a great importance on the teachers that teach science in our schools. The Ashby commission reported that there was an inadequate supply of trained teachers in the nation's secondary schools even while there was an increase in the demand for more secondary schools. The Ashby commission, among other things,

recommended the training of more teachers for the nation's secondary schools, the establishment of more universities and establishment of the institution of a Bachelor's Degree in Education, where qualified teachers could be produced. B.A., B.Sc. (Education) degrees with fifty students was first introduced by the University of Nigeria Nsukka, in 1961. University of Ibadan followed suit in 1963; Ahmadu Bello University, Zaria 1964; University of Lagos in1965 and Obafemi Awolowo University Ile–Ife in 1967. Today, many more Universities in the country have faculties of Education where qualified teachers are produced. The universities are responsible for training teachers for the Senior Secondary at the post-Basic level. This may be through a four-year post secondary or a three-year post-NCE or B.A. Ed./B.Sc. Ed./ B.Ed. degree programme in a Faculty or Institute of Education. These universities also run the Postgraduate Diploma in Education (PGDE) for Bachelors degree graduates in pure Arts, Sciences and Social Science subjects to make them qualified as teachers. There are 49 of such universities today, including two Universities of Education, which are upgrades of COEs, enrolling about 150,000 and graduating about 50,000 yearly (Ajelayemi, 2007).

Teachers are seen to be important part of any education system. This has been emphasized by various researchers stating that quality of teachers in any educational system determines the quality of the education itself. Teachers are the ones who implement the curriculum (the driving force of a nation's education) on a day to day basis. Every society requires adequate human and material resources to improve its social organization, preserve the culture, enhance economic development and reform the political structures. Education is often seen as a prerequisite for quality manpower development and creation of wealth, a sure path to success in life and service to humanity. Thus, teachers have important role to play to adequately prepare the young for their roles in the society in order to achieve the set national objectives. Teachers' influence is always felt in every aspect of the society. Teacher education should embrace and radiate the energizing forces of change backed up purposefully by democratic leadership and rational economic policies. This provides the basis for sustainable development and environment which largely facilitate harmonious creation of wealth and well-being of humanity. (Okemakinde, Adeniyi & Alabi, 2013)

The teacher education according to the National Policy on Education (NPE) shall have the following goals:

a) produce highly motivated, conscientious and efficient classroom teachers for all levels of educational system;
b) encourage further the spirit of enquiry and creativity in teachers;
c) help teachers to fit into social life of the community and society at large and enhance their commitment to national goals;

d) provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations;
e) enhance teachers commitment to the teaching profession

The policy also stated that teacher education programmes shall be structured to equip teachers for the effective performance of their duties. The institutions that carry out professional training for teachers include:

a) Colleges of Education
b) Faculties of Education
c) Institutes of Education
d) National Teachers Institute
e) School of education in Polytechnics
f) National Institute of Nigerian Languages(NINLAN)
g) National Mathematical Centre(NMC)

This research work has its focus on the Faculties of Education in Nigerian Universities and the School of Education in Open University study centres. There has been so many challenges facing teacher education programme in the Nigeria system with Obanya (2006) stating that shortfalls in the supply of teachers exists in virtually all secondary subjects, including the "soft" options of Religious Studies, Commerce, etc. let alone in the difficult options of Mathematics and the Sciences, and he concluded that we are "teaching without teachers" at the primary and secondary levels. Ikoya (2013) observed that teacher availability in a developing country like Nigeria is strongly hinged on access to Teacher Education Program. Currently less than 25 percentages of the applicants qualified for admission into Teacher Education Program in Nigeria are admitted annually. Indeed, admission into teacher education program is one of the most difficult hurdles to cross by many post- High School graduates in Nigeria, and as a result there is so much fraud, intrigue and lobbying for admission. Ikoya's research later revealed that there is a low level of admission granted to students for Teacher education programme in universities.

Okemakinde et.al (2013) further stressed that concerns have also been expressed about the quality of the graduates produced by the tertiary institutions in the country. It has been noted that there has been a decline in the quality of candidates admitted into the tertiary institutions which could be due to poor performance from the secondary level, he emphasized that provision of quality teachers who can adequately teach and train students from secondary schools will help to improve student admission into tertiary institutions. As it is seen that these teachers must graduate first from tertiary institutions before they can come to teach at the secondary level, it is thus a cyclic, sensitive yet important that tertiary institutions produce qualified graduates.

Against the backdrop of several believes that anybody can teach which has adversely affected the standard of education in Nigeria with 38.9% of secondary school teachers without educational qualifications in 2005 and even with Teachers' Registration Council of Nigeria (2005) stating in its handbook that it is an offence for non-professionals to engage in teaching at any level in Nigeria, Fennena and Franke (2006) opined that the perception of teachers for effective teaching of any subject depends to a large extent on the teachers' understanding of the nature of the subject matter and that perception of proper teaching is a consequence of a teacher being able to pass-on the content of the subject matter. Ishekwe and Dombe (2014) buttressed this by emphasizing that it is imperative that a teacher has a bro ad and liberal education, sound knowledge of the subject, a sound methodology, knowledge of child psychology and be knowledgeable about social factors affecting a child that comes to school. He must continue to read widely and deeply to be able to keep up with new developments. Moreover, he must be academically competent in the subject or subjects he teaches.

All these attributes will be hard to come by if a subject teacher is not trained accordingly that is, a Biology teacher that studied microbiology, Biochemistry or any there subject outside Biology Education is not fit to teach Biology. Some other problems facing teacher education in Nigeria as explained by Okemakinde and Olaniyan (2008) include access to education, quality of training and instruction and the cost of teacher education. They suggested provision of professional teacher trainer, increase availability and accessibility of teacher educational programme and government and individual funding of research and educational programmes will help reduce these challenges. As it is known that one cannot give what he does not have, it is important that for teacher education for graduates of Open and Conventional universities in Nigeria to be relevant in the labour market, students from these universities must have a sense of hope and believe that their Jobs are not in the custody of ill trained professionals (Biology/Science teachers).

Poor quality of science teachers in terms of adequate knowledge base and pedagogic skills is another factor identified to influence students' performance. The teacher's academic qualifications and knowledge of subject matter, competencies and skills, and the commitment of teacher have a great impact on the teaching learning process. A science teacher is anyone who teaches science. Science teachers in Nigeria are prepared mainly at colleges of Education and faculties of Education of different universities. (Omorogbe & Ewansiha, 2013). There is therefore the need to employ well trained and qualified teachers in schools. The quality of teaching personnel for effective science education cannot be over emphasized as they are serve as the most important driving element in achieving the aims of the curriculum. Ayoola (2007) opined that the qualification of teachers dictates the quality of information imported to the students

through teaching. Achieving the goals of Biology Education in schools requires qualified and highly biological literate teachers. In a research carried out by Ajibade, Oloyede, Adeleke and Awopetu (2010) on lecturers views on and attitude to pedagogical skills training, it was revealed that there is a need for the professional development of teachers in higher education institutions across the globe and that issues relating to teaching and learning methods were becoming a great concern to universities and other higher educational institutions. They also stated that professionalization of teaching in higher education is key to improving University education. The result of their study carried out in Obafemi Awolowo University revealed that there was a mixture of both misconceptions and proper understanding of the idea of pedagogy in teaching. Most lecturers agree that pedagogical and professional development of lecturers was important; they believe that there is a correlation between pedagogical skills of teachers and an increase in productivity in the University. This showed that not only the professional training of teacher is important but also their pedagogical training.

Biology education is very important to any growing economy like Nigeria. Science teachers are key factor to be considered when talking about the development of science (Biology) education in any nation. There are shortages of qualified science teachers in Nigerian schools while some science teachers are not professionally qualified. They may have the knowledge of the subject but lack the methods of teaching. This could be due to lack of adequate training for science education teachers in tertiary institution among others. The teacher determines the quality of the educational system. He translates educational policies and educational programmes into practice. If the teacher is adequately prepared, he will be an asset to the nation. Afe (2001) stated that Teachers are responsible for translating the educational policies, principles and the curriculum into actions based on practice during interactions with the students. Scholars believe that teachers have critical role in implementing reforms in schools and classrooms. Aubusson and Watson (2003) believe that teachers have critical influence on the quality of teaching and learning that occurs in the classrooms.

Good teachers are therefore needed for good education which in turn is indispensable for social change; social transformation and national development (Ajayi, 2007).Teachers are trained in Higher Education Institutions in the country. These include Colleges of Education, Polytechnics and Universities. The Universities are responsible for training teachers for the Senior Secondary at post-Basic level. This may be through a four-year post-secondary or three year post-NCE or an award of B.A. (Ed.), B.Sc (Ed.) or B.Ed. degree certificate in a Faculty or Institute of Education. The Universities also run the Postgraduate Diploma in Education (PGDE) for holders of Bachelor's degree certificates in Pure Arts, Sciences and Social Science subjects to make them qualified teachers. Recent studies have however shown that most of the graduates from Colleges and

Faculties of Education in the country are incompetent in the knowledge of subject matter content as well as in teaching (Okebukola, 2007). The courses they offer for teacher education programmes emphasize more of theory than practical, especially lacking in teaching skills acquisition through adequate teaching practice. The findings of Okebukola (2009) also highlighted the general weaknesses of Education graduates. It is on this premise that this research is carried out to determine and compare the quality of adequacy and availability of lecturers that implement Biology Education curriculum in Open and Conventional universities.

Statement of the Research Problem

The establishment of National Open University of Nigeria (NOUN) was premised on the fact that programmes and curricula in the University will be equivalent in content and quality to those offered by Conventional universities as stipulated in the National Universities Commission (NUC) Benchmarks. However due to post-graduation performance of products of both types of University, there have been doubts as to the extent to which quality teaching necessary for the curricula implementation has been equivalent in the universities especially in Biology Education. It is therefore important to carry out a study to ascertain and compare the quality of lecturers in the open and conventional universities in line with the NUC benchmark

Research Questions

The following research question guided the study;

a) Is the quality of lecturers in the Open University comparable with that of the Conventional Universities in line with the NUC benchmark?

Methodology

The study employed descriptive survey design. The data collected from the responses of the lecturers to the items of the study questionnaires were analysed and the result was used to generalize for the study population.

Population, Sample and Sampling Technique

The population of the study comprised of all Biology Education lecturers in Southwestern Nigeria Universities and all the facilitators in the Open University Study Centres in the study area. All the federal Universities offering Biology Education programme in Southwestern Nigeria (except the newly established Federal University in Oye, Ekiti State) and the Study Centres in the States where they are located were purposively selected for the study. Also, all Biology Education lecturers in the selected Universities and Study Centres constituted the sample for the study.

Research Instruments

The study made use of one instrument which included questionnaire. This was used to access the quality of lecturers that implement BEC in both university types.

Biology Education Lecturer Questionnaire (BELQ)

This instrument was used to assess the quality of academic staff as well as the University Delivery Instructional Strategies employed by lecturers in both types of Universities which was adapted from Ojediran (2015). BELQ consists of three sections. Section A provided information of Lecturers' University, sex, status and professional teaching experience. Section B also sought information on Lecturer's professional quality in terms of number of publications at local and international level, number of contribution to books, attendance at conferences and number of published conference proceedings. Section C items contained suggested answers which the lecturer was sought based on individual Lecturers' instructional delivery strategies. The lecturers indicated the University Instructional Delivery Strategies they used in the Biology classroom among the listed inventory. A three point likert scale (always, sometimes and never) was used in assessing the degree of usage of the UDIS inventory respectively. The scale (always, sometimes and never) was scored 3, 2 and 1 respectively. It was completed by lecturers teaching Biology in the various Universities and Open University study centres in southwestern Nigeria.

Validation and Reliability of Instrument

The research instruments were validated by curriculum evaluation specialists in the Department of Science and Technology Education and One Open University facilitator in the Faculty of Education, Obafemi Awolowo University Ile-Ife for both face and content validity. A reliability score of 0.84 was obtained for the Biology Education Lecturers Questionnaire (BELQ), using Cronbach Alpha co efficient.

Data Collection Procedure

The first instrument was administered by the researcher by visiting all the sampled Universities and Open University Study Centres to interact with the Head of Departments and Directors of the universities and Open University Study Centres respectively. Copies of Biology Education Lecturer Questionnaire (BELQ) were administered by the researcher to ascertain the correctness of the answers given. The questionnaire were given to each lecturer to fill while permission was sought from the Head of Department, the procedure was to give the questionnaires to the lecturers. The administration of the instrument lasted for three months between November 2015-January 2016. A month was devoted to each state to be able to effectively observe the implementation of their curricula. The observed situation about the implementation of

Biology Education curricula in Open and Conventional Universities as a whole was scored and each score was used for the analysis of the data.

Data Analysis

The data gathered were analyzed using frequency and percentages to answer the set research questions

Results

Research Question: What are the Qualities of Lecturers that Implement Biology Education Curriculum in Open and Conventional University as Compared with NUC Benchmarks?

To access the qualities of lecturers that implement BEC in the University types, the lecturers' highest academic qualification, years of teaching experience, number of published articles, academic status and educational degree they possess were analyzed. The educational degree of the lecturers was used as the stand point for assessing if they are qualified to teach BEC as stipulated by the NUCBMAS.

Table 1: The Highest Qualification of Lecturers in Both University Types

Highest Qualification	Conventional University			Open University		
	OAU Freq(%)	UI Freq(%)	UNILAG Freq(%)	Ibadan Study Centre Freq(%)	Osogbo Study Centre Freq(%)	Lagos Study Centre Freq(%)
M.Sc.	3(22.2%)	1(10.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
Ph.D.	8(81.8%)	9(90.0%)	16(100%)	0(0.0%)	2(100.0%)	0(0.0%)

Source: Research Survey, 2016

Table 1 revealed that the highest qualifications of BEC lecturers in the study area are M.Sc. and Ph.D. In OAU, 22.2% of the lecturers have M.Sc. as their highest qualification while 81.8% have Ph.D. as their highest qualification. In UI, 90% have Ph.D. as their highest qualification while 100% in UNILAG have Ph.D. as their highest qualification. Two of the Open University study centres do not have lecturers/facilitators to teach Biology education but teaching and learning is majorly online. The only study centre with facilitators has all their facilitators with Ph.D. as their highest qualification.

Table 2: The Educational Qualification of Lecturers that Implement Biology Education Curriculum in Open and Conventional Universities in Nigeria

Educational Qualification	Conventional University			Open University		
	OAU	UI	UNILAG	Ibadan Study Centre	Osogbo Study Centre	Lagos Study Centre
Yes	1(9.1%)	2(20.0%)	3(21.8%)	0(0.0%)	2(50.0%)	0(0.0%)
No	9(91.9%)	8(80.0%)	13(78.2%)	0(0.0%)	2(50.0%	0(0.0%)

Source: Research Survey, 2016

The study carried out the assessment of the pedagogical knowledge of the lecturers implementing Biology Education of both University types in the study area. This is evaluated by the use of questionnaire to assess the amount of BEC lecturers that has been trained as a teacher through the attainment of an educational degree. It is seen that 91.9%, 80.0% and 78.2% BEC lecturers in Obafemi Awolowo University, University of Ibadan, and University of Lagos respectively do not have adequate pedagogical qualification while the only study centre (NOUN Osogbo) with lecturers/facilitators has 50.0% of them with pedagogical qualification. This is not regarded to be adequate for the implementation of BEC in open and Conventional universities in the study area.

Table 3: Teaching Experience by Lecturers (in years) that Implement BEC in Open and Conventional Universities in Nigeria

Years of Experience	Conventional University			Open University		
	OAU Freq(%)	**UI** Freq(%)	**UNILAG** Freq(%)	**Ibadan Study C**. Freq(%)	**Osogbo Study C**. Freq(%)	**Lagos Study C.** Freq(%)
1-5yrs	1(9.2%)	1(10.0%)	1(6.3%)	0(0.0%)	0(0.0%)	0(0.0%)
6-10yrs	3(27.2%)	2(20.0%)	5(31.3%)	0(0.0%)	2(100.0%)	0(0.0%)
11-15yrs	2(18.2%)	1(10.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
16-20yrs	2(18.2%)	2(20.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)
21-25yrs	3(27.2%)	4(40.0%)	1(6.3%)	0(0.0%)	0(0.0%)	0(0.0%)
26-30yrs	0(0.0%)	0(0.0%)	3(18.8%)	0(0.0%)	0(0.0%)	0(0.0%)
31yrs +	0(0.0%)	0(0.0%)	2(12.5%)	0(0.0%)	0(0.0%)	0(0.0%)

Source: Research Survey, 2016

Comparing the years of experience of lecturers in both University types, 63.6% of Obafemi Awolowo University lecturers have a teaching experience of 11years and above, 70.0% of University of Ibadan lecturers have an experience of 11years and above while 62.6% of University of Lagos lecturers have an experience of 11years and above. The available facilitators in NOUN Osogbo have 6-10years of University teaching experience.

Table 4: Number of Articles Published by Lecturers in Both University Types

Number of Published articles	Conventional University			Open University		
	OAU Freq(%)	UI Freq(%)	UNILAG Freq(%)	Ibadan Study C. Freq(%)	Osogbo Study C. Freq(%)	Lagos Study C Freq(%)
1-5	4(36.4%)	2(20.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)
6-10	1(9.1%)	0(0.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)
11-15	3(27.3%)	2(20.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)
16-20	2(18.1%)	0(0.0%)	0(0.0)%	0(0.0%)	2(100.0%)	0(0.0%)
21-25	1(9.1%)	1(10.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
26-30	0(0.0%)	5(50.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
31and above	0(0.0%)	0(0.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)

Source: Research Survey, 2016

According to the NUC benchmark, a lecturer must have published 25 articles and above for the attainment of the Professorship cadre, 12 articles and above for the attainment of the Senior Lecturer cadre, 5 articles and above for the attainment of the Lecturer I cadre while Lecturer II must have published 3 articles and above. It is seen that 36.4% of Obafemi Awolowo University BEC lecturers have published 1-5 articles which represents the category with the highest number of BEC lecturers. It is also discovered that 50% of BEC lecturers in University of Ibadan have published 26-30 articles and 25% of BEC lecturers in University of Lagos have published (1-5, 6-10 and 26-30) articles. This became more explanatory when assessing their academic status.

Table 5: Academic Status of Lecturers that Implement BEC Curriculum in Open and Conventional University in Nigeria

Academic Status	Conventional University			Open University		
	OAU	UI	UNILAG	Ibadan Study Centre	Osogbo Study Centre	Lagos Study Centre
Graduate Assistant	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
Assistant Lecturer	0(0.0%)	1(10.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
Lecturer 2	2(18.1%)	2(20.0%)	4(25.0%)	0(0.0%)	0(0.0%)	0(0.0%)
Lecturer 1	3(27.2%)	1(10.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)
Senior Lecturer	4(36.4%)	4(40.0%)	7(43.8%)	0(0.0%)	2(100.0%)	0(0.0%)
Reader	1(9.1%)	1(10.0%)	1(5.6%)	0(0.0%)	0(0.0%)	0(0.0%)
Professor	1(9.1%)	1(10.0%)	4(2s5.0%)	0(0.0%)	0(0.0%)	0(0.0%)

Source: Research Survey, 2016

The study reveals that most of the lecturers available for teaching Biology Education curriculum in the universities belong to the Senior Lecturer cadre (OAU-36.4%, UI-40.0%, UNILAG-43.8%). It is seen that University of Lagos has the highest number of lecturers in the Professorial cadre (25.0%) teaching Biology Education Curriculum with Obafemi

Awolowo University and University of Ibadan trailing with 9.1% and 10.0% respectively. This shows that most of the lecturers implementing Biology Education Curriculum in the Conventional Universities have attained a reasonable height in their academic status and achievement as required and recommended by National University Commission. Thus, it is justifiable enough to say that the Conventional universities have a high quality of lecturers with professional and conceptual knowledge of Biology. The available lecturers (facilitators) in the Open University study centres (which was found only in NOUN Osogbo) also possess a high level of professional and conceptual knowledge in implementing the Biology Education Curriculum as they have adequate educational experience and have attained a high level of academic achievement in their fields.

From the findings of the study, it is deduced that lecturers and facilitators that implement BEC in Conventional and Open Universities respectively have a high level of professional achievements, conceptual knowledge but a low level of pedagogical knowledge (OAU-9.1%, UI-20.0%, UNILAG-21.8%) in Implementing BEC in both University types.

Discussion

The research carried out revealed that most of the lecturers that implement Biology Education Curriculum in the Conventional universities have conceptual knowledge as most of them have published a large number of articles and have met NUC Benchmark in the number of articles they must have written to attain various professional cadre/ academic status. It was however revealed that most of them do not have pedagogical knowledge (grounded knowledge of Education and teaching effectiveness) in order to be able to teach Biology Education students as stipulated by NUC benchmark which requires that Science (Biology) Education Lecturers should understand what constitutes effective teaching (professionalism). It is furthermore revealed that only a small percentage of Biology Education lecturers have pedagogical training. It is seen that 9.1%, 20.0% and 21.8% of OAU, UI and UNILAG Biology Education lecturers have pedagogical knowledge which represent a small fraction of the BEC lecturers. It was discovered that most of the lecturers are trained to teach Biology Concepts (Botany and Zoology) in the universities and not Biology Education.

All the conventional universities allowed their students to take courses that are related to concepts in Biology in Cognate departments (Botany and Zoology). This could affect the quality of Biology Education graduates produced by the University as most of the students will be more inclined towards the concepts than the methods. Concerning the Open University study centres that rely on online facilitation, there is difficulty in assessing the quality of online facilitation in the two study centres as there was no direct contact between students and facilitators and the effect of the quality of the facilitators

on the students will be minimal. For a developing country like Nigeria which is still faced with problems of ICT, power supply and funding, it is seen that over reliance of the Open Universities on online facilitation will greatly affect the quality of Biology Education graduates produced by the Open University. Various researchers have stated that the quality of the educational system in a country is based on the quality of teachers; it could then be said that where there are no quality teachers (educators) there will be poor quality of education. Ishekwe and Dombe (2014) stated that it is imperative that a teacher has a broad and liberal education, sound knowledge of the subject, sound methodology and knowledge of psychology. It is expected of a Biology educator to be a sound teacher by possessing these necessary qualities.

However, lecturers of the Conventional universities have all these qualities except the sound methodology and psychology as a number of the BEC lecturers have no trained educational qualification to prove this. It is imperative that Biology Educators in the Conventional universities are trained pedagogically and facilitators with educational background are made available in the Open University study centres to improve the quality of Biology Education graduates produced. The importance of qualified teachers was also emphasized by Ajibade *et al* (2010) where it is stated that there is a need for the professional development of teachers in higher education across the globe and issues relating to learning methods were becoming a great concern to universities. Okemakinde (2008) also posited that access to education, quality of training and instruction has affected teacher education in Nigeria. This could be improved by provision of qualified teachers (Lecturers and facilitators) to teach at the tertiary level. It is therefore important to make qualified lecturers and facilitators available to Implement Biology Education Curriculum in both University types.

Conclusion

The study concluded that even though there are guidelines for implementing Biology Education in both University types as stipulated by NUCBMAS, there is still a slight difference in the attainment of the specified conditions to be met in implementing BEC. The quality and the availability of lecturers are widely different. The implication for this is that there will be a wide range of difference in the implementation of BEC in open and Conventional universities in Nigeria and this will result in the difference in the quality of graduate (Biology teachers) produced.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. There should be adequate provision of facilitators in the proper student to tutor ratio with adequate online training in the Open University to be able to effectively Implement Biology Education curriculum

2. Lecturers of the Conventional Universities should be given adequate pedagogical training to be able to effectively produce trained Biology education teachers in the universities

Contributions to Knowledge

The findings of the study provided information on the implementation of Biology Education Curricula in both Open and Conventional Universities. It also provided information about the quality of teaching in both University types. It further gave an insight into the level of compliance of both University types with the NUC Benchmarks.

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BIOGRAPHY

Kareem Adeyinka Oluwaseun graduated from the Department of Special Education and Curriculum Studies (SEC) Obafemi Awolowo University, Ile-Ife in 2011 with a Second Class upper (Honours) Division (B. Sc. Ed. (Biology). He proceeded for his Masters Degree which he completed on 5thMay, 2016 in the same Department (Now Science and Technology Education Department). He is a Seasoned Educationist with teaching experience in Biology and Chemistry across various Secondary schools in Nigeria. He is presently the Biology Teacher at Royal Comprehensive High School, Modakeke, Osun State. Kareem Adeyinka has his research focus on Implementation of Science Education Curricula in Tertiary Institutions in Nigeria and Africa at large with his just concluded research on the Implementation of Biology Education Curricula in Open and Conventional Universities in Southwestern Nigeria.