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ASSESSMENT OF EVALUATION TECHNIQUE AND IMPLEMENTATION OF THE CURRICULUM CONTENTS OF MINIMUM STANDARD FOR NCE BIOLOGY EDUCATION IN COLLEGES OF EDUCATION IN SOUTH EAST, NIGERIA

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ABSTRACT

This study investigated the evaluation technique and implementation of the curriculum contents of the minimum standard for NCE biology education in colleges of education in South East Nigeria. Two research questions guided the study. A descriptive survey was adopted for the study and the population consisted of all the biology lecturers and NCE biology students teachers in state and federal colleges of education in south east Nigeria with a total of 75 biology lecturers and 725 final year NCE biology student-teachers. The entire population was studied without sampling. Evaluation Techniques for NCE Biology Curriculum (ETNCEBC) was used for data collection. The instrument was validated by three experts in science education, measurement and evaluation and curriculum studies respectively. The reliability co-efficient of the instrument was 757. The data collected were analyzed using frequency and percentage. The result of the study revealed that biology lecturers in state and federal colleges of education complied to the recommended course content stipulated in the minimum standard for NCE biology curriculum. The study also revealed that the evaluation techniques used by biology lecturers in assessing the NCE student-teachers in state and federal colleges of education were test, class work, homework, assignment, projects, examinations, observations and self-reports. Based on the finding of the study, it was recommended among others that The National Commission for Colleges of Education should include evaluation techniques and modes on the minimum standard for NCE biology curriculum so as to provide uniform standard on which the student-teachers academic performance will be assessed.

Keywords: Evaluation Technique, Curriculum Content, Minimum Standard, Implementation, Biology Education

Introduction

Education is one of the means of social and human development for every individual in this planet. This is why education occupies a top priority in the scheme of things among the comity of nations. It is also an indisputable fact, that no nation can be more developed than the quality of its education. The quality of the educational system of a nation is to a large extent

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dependent on the relevance of the objectives and adequacy of the contents of the schools' curricular of the nation as well as the effective implementation of the schools' curricula at various levels of education system.

Curriculum is the sum total of all planned and organized programmes offered to the learner under the auspices of the school for the all-round development of the learner. Lawy in Okekeokosisi, Anaekwe and Okeke (2016) described implementation as the open use of a programme throughout an entire school system. According to Obialor (2021) curriculum implementation refers to the process by which the planned or documented curriculum is put into action by the teacher particularly in the classroom setting. Offorma (2004) described curriculum implementation as all the activities and experiences of teaching and learning which is directed at realizing the objectives of the contents of curriculum in order to bring certain changes in the behaviour of the learners and assess the extent to which the changes take place. Curriculum content can be viewed in terms of how it relates to the national and individual objectives in a course rather than it effects (Olaitan & Ali, 2007). According to Amadi in Onyemerekeya (2006), content is the substance and process of what the teacher is to teach. Onyemerekeya further explained that, content as a substance deals with the essence of the subject matter. The content of any subject consists of the facts, ideals, skills that students has accumulated about the subject throughout the years. As a process, content is the teaching of the subject matter that leads to information acquisition, skill building or value clarification. The content of the curriculum package is a crucial element that determines the success of that curriculum in the process of its implementation. Therefore, the successful implementation of the minimum standard for NCE biology curriculum in colleges of education is largely dependent on the content.

The minimum standard for teacher educators in colleges of education define the minimum that educators should know and be able to do as well as their expected minimum dispositions towards their work, if they are to remain and progress in their career (Nigeria Certificate in Education Minimum Standard, 2012). The following are the courses contained in the minimum standard curriculum for the biology students in the colleges of education in Nigeria: Basic Principles of Biology, Cell Biology, Viruses, Bacteria and Lower Plants, Biology Practical I, Ecology, Diversity of Invertebrates, Diversity, Anatomy and Histology of Spermatophytes, Biology Methods, Biology Practical II, Diversity of Chordates, Research Methods and Biometry, Population Education, Plant Pathology, Animal Histology, Biology Practical III, Plant Physiology, Vertebrates, Anatomy and Physiology, Embryology, Biology Practical IV, Evolution, Laboratory Management, Applied Biology, Introductory Parasitology, Genetics and Biology Practical V (Nigeria Certificate in Education Minimum Standard, 2012). The successful completion of these courses with other second teaching subjects like Chemistry, Physics, Mathematics, Integrated Science, computer, physical and health education and General Studies; Education Courses including Teaching Practice (TP) and every other activities

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accredited and accepted by the National Commission for Colleges of Education (NCCE) leads to the award of Nigeria Certificate in Education (NCE).

The objectives of NCE biology programme according to NCCE in Nigeria Certificate in Education (2012) are to produce teachers who will be able to:

1) view biology as a process of inquiry into the living world;
2) critically analyze the activities of living things in their environment;
3) demonstrate practical skills in handling scientific apparatus;
4) demonstrate excellence and professional competence in teaching biology;
5) include positive scientific attitudes and values in the society and promote positive disposition towards biological science and the scientific enterprise;
6) apply concepts and methods acquired in the course in the new areas of study and in everyday situations;
7) make a successful career in biology teaching;
8) Successfully qualify to undertake a B.ED/ B.Sc (ED) Degree programmes

The extent to which these objectives are attained every year by the products of the colleges is in doubt. As noted by Olorukooba (2007) many science teachers in secondary schools have inadequate training in science disciplines, biology inclusive. The author further contended that the training programme of the prospective teachers should be comprehensive and there should be fusion between the content knowledge and pedagogical knowledge. The author went further to explain that teachers who posses subject matters expertise and ability to present the subject matter to their students usually engage them in those activities that will facilitate their understanding of the curriculum content. In contrast, teachers with weak knowledge of subject matter rely heavily on the textbook as the primary source of subject matter content which invariably affects science learning. Therefore one of the ways to build competence in science (biology) teachers is to educate them confidently by providing the requisite professional training. However, to know whether the biology student-teachers have acquired the knowledge and skills after teaching has been completed they need to be evaluated. Evaluation is an inevitable aspect of teaching. Evaluation is a process of gathering valid information on attainment of education objectives, analyzing and fashioning information to aid judgment on the effectiveness of teaching or an educational programme (Okpala, Onocha & Onyedeji in Onyemerekeya, 2003). It is also the systematic collection of evidence in order to determine the extent to which a particular programme is achieved (Obialor, 2021). To evaluate learning adequately, the teacher must know the varieties of evaluation instruments/ techniques (that is equipment used in evaluation) such as tests, assignment and homework, understand their characteristics and functions and be able to use them appropriately to measure learning in the different domains. However, the

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inability of some teachers to properly assess all the domains of learning in students, has led to many people doubting the genuineness of internal classes assessment marks. The perception teachers have on assessment go a long way to explain the quality of assessment in colleges of education (Shepard in obialor, 2021). Hence, this study examined the compliance of biology lecturers to the recommended biology course content stipulated in the minimum standard for NCE biology curriculum as well as the evaluation techniques used by them in assessing the NCE biology student- teachers in colleges of education in South East Nigeria.

Research Questions

The following research questions guided the study:

1) What evaluation techniques are used by biology lecturers in assessing the NCE biology student-teachers in state and federal colleges of education?
2) Do biology lecturers comply to the recommended course content stipulated in the minimum standard for implementation of NCE biology curriculum in state and federal colleges of education in South East Nigeria?

Research Method

The study adopted descriptive survey design. The study was carried out in Colleges of Education in south east Nigeria. The population of the study consisted of seventy five (75) biology teachers and seven hundred and twenty five (725) final year NCE biology student- teachers in south east Nigeria. The entire population was studied without sampling. This is because the population size is small and considered manageable by the researchers. The instrument for data collection was a structured questionnaire developed by the researchers to determine the evaluation techniques used by biology lecturers in colleges of education. The instrument was titled Evaluation Techniques for NCE Biology Curriculum (ETNCEBC). The instrument contained 12 items with two response categories, used or not used. The instrument was validated by three experts in science education, measurement and evaluation and curriculum studies respectively. The reliability of the instrument was determined using Cronbach Alpha and this yielded a co-efficient of .757. The instrument was administered by the researchers to the biology lecturers and student-teachers in each of state and federal colleges of education in South East Nigeria and collected on the spot to enhance high return. For collection of data on biology lecturers' compliance to biology course contents, their course content distributions were checked alongside with the course content stipulated in the minimum standard for NCE biology curriculum. The data collected were analyzed using frequency and percentage. Hence, any item with score below 50% was regarded as not comply or use while item with 50% and above was regarded as comply or use.

Presentation of Results

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Research Question 1: Do biology lecturers comply to the recommended course contents stipulated in the minimum standard for implementation of biology curriculum in state and federal colleges of education in Southeast Nigeria?

Table 1: Observation Results on Biology Lecturers Compliance to the recommended course contents stipulated in the Minimum Standard

College	Number of lecturers that comply		Number of lecturers that do not comply		Remark
	Freq	%	Freq	%	
1.	20	83.3	4	16.6	Comply
2.	8	80.0	2	20.0	Comply
3.	19	86.3	3	13.6	Comply
4.	7	63.6	3	30.0	Comply
5.	4	80.0	1	20.0	Comply
6.	7	63.6	4	36.3	Comply
7.	0	100	4	0.0	Comply
Total	**65**	**65.25%**	**17**	**19.5**	**Complied**

Table 1 presents observation results on biology lecturers' compliance to the recommended course contents stipulated in the minimum standard. The analysis revealed that the percentage of observation results on biology lecturers' compliance to the recommended course content is 50% and above which is the acceptable cut off score. This implies that biology lecturers complied to the recommended course contents stipulated in the minimum standard for implementation of biology curriculum in state and federal colleges of education in Southeast Nigeria.

Research Question 2: What evaluation techniques are used by biology lecturers in assessing the NCE biology student-teachers in state and federal colleges of education?

Table 2: Frequency and Percentage of Biology Lecturers and NCE Biology Students Responses on Evaluation Techniques used by Biology Lecturers in Assessing the NCE Biology Students-Teachers

S/N	Evaluation techniques	Lecturers (No. 75)					Students (No 725)				
		Used		Not used		Remark	Used		Not used		Remark
		F	%	F	%		F	%	F	%	

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1.	Test	60	80.0	15	20.0	Use	700	96.5	25	3.44	Use
2.	Classroom	70	93.3	5	6.66	Use	690	95.1	35	4.82	Use
3.	Homework	60	80.0	15	20.0	Use	580	80.0	145	20.0	Use
4.	Assignment	73	73	97.3	2.66	Use	722	95.5	3	0.41	Use
5.	Project	71	94.6	4	5.33	Use	700	96.5	25	3.44	Use
6.	Examination	75	100	0	0.0	Use	725	100	0	0.0	Use
7.	Questionnaire	20	26.6	50	66.6	Not use	5	0.68	720	99.3	Not use
8.	Observation	50	66.6	20	26.6	Use	590	81.3	135	18.62	Use
9.	Interview	20	26.6	55	73.3	Not use	124	17.1	601	82.8	Not use
10.	Checklists	35	4.46	40	53.3	Not use	128	17.6	597	82.3	Not use
11.	Inventories	18	24.0	57	76.0	Not use	21	2.89	704	97.1	Not use
12.	Self-reports	49	65.3	26	34.6	Use	700	96.55	25	3.44	Use

Result in Table 2 shows the frequency and percentage of biology lecturers and NCE biology student-teachers responses on evaluation techniques used by biology lecturers in assessing the NCE biology students in state and federal colleges of education in south east Nigeria. The table revealed that out of the 12 evaluation techniques rated by the biology lecturers' and NCE biology student-teachers, 8 evaluation techniques were used and 4 not used. A higher number of biology lecturers and NCE biology student-teachers 766 (95.8%), 665(83.1%), 632 (79.0%) 767 (95.9%), 766(95.8%), 701 (87.6%), 431(53.9%) and 534 (66.8%) indicated that test, class work, homework, assignment, project, examination, observation, and self-reports were used in assessing NCE biology student-teachers. On the other hand 402 (50.2%), 532 (66.5%), 767 (95.9%) and 800 (100%) indicated that questionnaire, interview, checklist and inventories were not used in assessing NCE biology students. This implies that the biology lecturers in colleges of education use more of test, class work, homework, assignment, project, examination, observation and self- report than questionnaire, interview, checklist and inventories in assessing the NCE biology student-teachers in state and federal colleges of education.

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Discussion of Findings

The findings of the study revealed that the biology lecturers in state and federal colleges of education in South East Nigeria complied to the recommended course contents stipulated in the minimum standard for NCE biology curriculum. This is in agreement with earlier findings from a study carried out by Muhammed, Garbs and Mutapha (2018) which revealed that there was significant content coverage of NCE Hausa curriculum. This is also similar to Ibrahim (2017) discovery that the course content and objectives of biology core curriculum in senior secondary in Nigeria were adequate and covered by the biology teachers. The mandate as contained in the blue print on the implementation of the national policy on education (NPE, 2004) may have informed the biology lecturers' compliance to the recommended course contents stipulated in the minimum standard for implementation of NCE biology curriculum. The policy recommended that the minimum qualification for entry into the teaching profession in Nigeria shall be the Nigeria certificate in Education (NCE). The policy added that the goal of teacher education shall be to: produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system, encourage further the spirit of enquiry and creativity in teachers, help teachers to fit into social of the community and the society at large and enhance their commitment to natural goals, provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations and also enhance teachers commitment to the teaching profession. Therefore, the biology lecturers' compliance to the stipulated course contents of the minimum standard for NCE biology curriculum is centered on the achievement of the above stated goals and to ensure that they produce biology student–teachers who possess comprehensive knowledge of both contents and pedagogical skills needed for effective teaching of biology at all levels of educational system.

The findings of the study also revealed that most common evaluation techniques used by biology lecturers in assessing the NCE biology student-teachers in state and federal colleges of education were test, class work, home work, assignment, project, examination, observation and self report. The finding of this study is in line with `dandies (2013) who reported that teachers mainly use written exam to assess their students, they also reported using some alternative assessment but sporadically. However, the researchers also observed that the National Commission for Colleges of Education (2012) did not prescribed evaluation technique for use by lecturers in College of Education. This was further confirmed by Onuoha and Nwafor (2005) and Ekpenyony (2008) who maintained that evaluation as carried out today is quite restricted in scope, purpose and utility.

Conclusion

Based on the finding of the study, it was concluded that the biology lecturers complied to the recommended course contents stipulated in the minimum standard for NCE biology curriculum and some of the evaluation techniques used in assessing NCE biology students were test, class work,

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home work, assignment, project, examination, observation and self report.

Recommendations

The following recommendation was made based on the findings and conclusion of this study.

1) The National Commission for Colleges of Education should include evaluation techniques on the minimum standard for NCE biology curriculum so as to provide uniform standard on which the student-teachers academic performance will be assessed.
2) National Commission for Colleges of Education should regularly organize seminars and workshops for the biology lecturers on the need to use all the evaluation technique without exceptions as they are all vital instrument in teaching and learning process as well as essential for effective implementation of the curriculum planned.

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