Available online at www.elixirpublishers.com (Elixir International Journal)

Educational Technology

Elixir Edu. Tech. 45 (2012) 7649-7651

Lecturers view on the adequacy of Physics curriculum contents

Abdulrasaq Oladimeji Akanbi and Esther Ore Omosewo Science Education Department, University of Ilorin, Ilorin, Nigeria.

ABSTRACT

ARTICLE INFO

Article history: Received: 9 February 2012; Received in revised form: 17 March 2012; Accepted: 28 March 2012;

Keywords

NCE Physics, Curriculum content, Thermal physics, Acoustics.

Introduction

The Physics curriculum content is structured with the conceptual approach. The two concepts that permeate the entire curriculum are motion and energy. Major concepts which relate directly to these two concepts, their sub-concepts and the combination of these have been grouped into five sections and a number of topics. The topics are:

- [a] mechanics and properties of matter;
- [b] mathematics for Physics;
- [c] electromagnetism;
- [d] thermal physics;
- [e] optics;
- [f] acoustics;
- [g] atomic and quantum physics; and
- [h] basic electronics.(NCCE, 2002, p.132).

The Physics content have been organized in a spiral form [that is, the sections occur every year] in order to aid learning. Mathematics is to be used to clarify the Physics concepts or principles under consideration. In order to achieve the objectives of Physics education at NCE level, the guided-discovery method of teaching was recommended.

Ample opportunity for laboratory activities and discussions has been provided in every unit of the course. To stimulate creativity and develop skills in students, opportunity is provided for the consideration of workable devices in appropriate units of the contents. These units are often taught by a large range of specialists who lecture for short periods of time. It is recommended that any evaluation of this course should cover the three domains of educational objectives, namely, cognitive, affective and psychomotor domains. Each unit would have to be tested after its completion before moving on to the next unit. So, a great deal of the NCE Physics curriculum contents is viewed as being closely related to real life situations.

Furthermore, the effective teaching of the contents of the syllabus is based on the use of field studies, guided discovery, explorative techniques and skills for conceptual thinking. These instructional strategies derive from the need to make the learning of Physics activity- based and inquiry oriented.

This study sought to assess the adequacy and appropriateness of the contents for the attainment of the NCE Physics curriculum objectives. The study covered 24 Colleges of Education and 60 lecturers. Both descriptive and inferential statistical techniques were used to analyze the data gathered in the study. The results showed that the contents of the NCE Physics curriculum are adequate and appropriate for the attainment of the stated objectives. It was recommended that sufficient courses and periods are allocated to practical lessons and laboratory management adequately.

© 2012 Elixir All rights reserved.

With the laudable objectives of the present Physics curriculum, it is expected that students would posses substantial understanding of the subject and the practical application of the content for problem solving at the end of the course. However, it has been asserted that there is a wide gulf between the curricular prescriptions for science subjects and their implementations in the classroom [Adeyegbe, 1993]. The recurring dismal performance of students in science subject generally and that of Physics in particular at SSCE [Table 1] is a testimony to the fact that much has not been achieved in the implementation of the present Physics curriculum contents.

Considering the performance of students in physics in the year sampled, the result of 2007 seems to be the best. But for a country yearning for technological breakthrough, the result of 2007 cannot even be said to be satisfactory.

Isa (1998) carried out a study on Hausa as a second language at the Federal Colleges of Education, Katsina. The study revealed that the course outline was not rich enough to make students pursue further academics studies in Hausa language after NCE. It was also discovered that the course outline was not carefully structured and graded to suit the needs of students. It is the opinion of the present researcher that these findings could likely be part of the reason behind the poor performance of students in Hausa language since the product of the course outline are the potential teachers of Hausa language in secondary school.

In another related study conducted by Ajidagba (2002) showed that the curriculum content was consistent with the bjectives. Landu (2005)also revealed that the coverage of course content and instructional processes were found to be adequate as the appropriate lecture hours were allotted to each course and utilized.

It is therefore necessary to investigate whether the physics curriculum contents are adequate and appropriate for the attainment of the NCE physics curriculum objectives.

Purpose of the Study

This study sought to assess the adequacy and appropriateness of the contents for the attainment of the NCE





Physics curriculum objectives

Research Question

The study answered the research question stated here:

In the perspectives of Physics lecturers, how adequate and appropriate are the contents for the attainment of the NCE Physics curriculum objectives?

Research Hypotheses

The research question gave rise to the following hypotheses:

Ho₁: there is no significant difference in the views of the lecturers from Federal and State Colleges of Education on the adequacy of the sequence of course contents for the attainment of NCE Physics curriculum objectives;

Ho₂: there is no significant difference in the views of the lecturersfrom Federal and State Colleges of Education on theappropriateness of the sequence of course contents for theattainment of NCE Physics curriculum objectives.

Methodology

This study was a descriptive study of the survey type using questionnaire techniques. The population of this study comprised all lecturers in all Colleges of Education in Nigeria. The sample consisted of 60 lecturers selected from 24 Colleges of Education in all the six geo-political zones in Nigeria. Two Federal Colleges of Education and two State Colleges of Education were selected purposively in each of the six zones. The questionnaire items were structured in such a manner to collect data concerning the contents of the Physics curriculum as perceived by the lecturers. It consisted of a 5-item multiplechoice items along a four-point Likertscale of Strongly Agree (SA), Agree (A), Disagree (D) and strongly disagree (SD) depending on their feelings of agreement or disagreement with each item. Scoring of the items was done manually awarding four (4), three (3), two (2) and one (1) for SA, A, D, and SD respectively. The reliability coefficient of 0.78 was obtained when the questionnaire was validated on a test retest method of 2 weeks interval. The research question was answered using descriptive statistics such as frequency counts, percentage and rank order. The hypothesis was tested using chi-square analysis. **Results**]

In the perspectives of Physicslecturers, how adequate and appropriate are the contents for the attainment of the NCE Physics curriculum objectives?

Hypotheses

HO₁: There is no significant difference in the views of the lecturers from Federal and State Colleges of Education on the adequacy of the sequence of course contents for the attainment of NCE Physics curriculum objectives.

Table 2 shows the calculated χ^2 -value (1.159) and the critical χ^2 -value (5.991) with 2 degrees of freedom and at alpha level of 0.05. Since the calculated χ^2 -value is less than the critical χ^2 -value, therefore hypothesis one is not rejected. This implies that there is no significant difference in the views of lecturers from Federal and State Colleges of Education on the adequacy of the sequence of course contents for the attainment of NCE Physics curriculum objectives. This means that the two Colleges of Education lecturers agree that the content of the curriculum is consistent for the attainment of stated objectives.

Hypothesis Two

HO_{2:} There is no significant difference in the views of lecturers fromFederal and State Colleges of Education on the appropriateness of the sequence of course contents for the attainment of NCE Physics Curriculum objectives

Table 3 shows the calculated χ^2 -value (0.609) and the critical χ^2 -value (5.991) with 2 degrees of freedom and at alpha level of 0.05. Since the calculated χ^2 -value is less than the critical χ^2 -value, hypothesis two is not rejected. This implies that there is no significant difference in the views of lecturers from Federal and State Colleges of Education on the appropriateness of the sequence of course contents for the attainment of NCE Physics curriculum objectives. This implies that the lecturers from two colleges of Education agreed that the contents of the curriculum are suitable for the intended students.

Discussion

The results in Table 2 and 3 showed that the contents of the NCE Physics curriculum are adequate and appropriate for the attainment of the stated objectives. This means that the content of the curriculum is consistent with the stated objectives and suitable for the intended students. It should however be noted that it is one thing for the content to be consistent with the stated objectives, it is quite another for the two to be suitable for the intended students. This could also be due to the lecturers' exposure to the curriculum and the use of similar Physics curriculum during their training. That is, the curriculum does not lack some important integrating principles that it claimed to have. The curriculum is adequately understood by the lecturers and the curriculum itself is more explicit. Moreover, the selection of content, learning experience and the structure of the curriculum give the unified view of the Physics curriculum.

The overall assessment indicated that most (85.0%) of the lecturers from Federal and StateColleges of Education had the feeling that the course content was adequate. It is believed that where there are adequate teaching materials, and an appropriate teaching style is adopted, nearly all concepts can be effectively taught. The result from the present study is in conformity with those of Ajidagba (2002) andLandu (2005)who observed that coverage of course content were found to be adequate.

Conclusion

It was therefore concluded that lecturers from Federal and State Colleges of Education did understand the contents of the Physics curriculum, and they held the general view that the recommended course content are adequate and appropriate for the intended learners. It is recommended that sufficient courses and periods are allocated to practical lessons and laboratory management.

Reference

1. Adeyegbe, S.O. (1993). The senior secondary school science curricular and candidates' performance: an appraisal of the first cycle ofoperation. Journal of Science Teachers' Association of Nigeria, 28 (1&2), 3-12

2. Ajidagba, U.A. (2002). An evaluation of the national senior secondary SchoolIslamicstudies curriculum in Kwara state, Nigeria. Unpublished Ph.D.Thesis University of Ilorin, Ilorin.

3. Isa, L.A. (1998). An evaluation of a selected NCE Hausa course outline.Unpublished PGDE project, Ahmadu Bello University, Zaria.

4. Landu V.B (2005). An Evaluation of the Sandwich Science First DegreeProgramme inState College Education in Nigeria. UnpublishedPh.D. Dissertation University of Ilorin

5. National Commission for Colleges of Education (2002). MinimumStandard in Education(3rded.) Abuja: NCCE

2009)										
Year	Biology		Chemistry		Physics					
	Total entry	% pass at grade A1- C6	Total entry	% pass at grade A1- C6	Total entry	% pass at grade A1- C6				
2005	1,051,557	35.74	349,936	50.94	344,411	41.50				
2006	1,082,556	35.61	352,452	50.95	345,225	43.84				
2007	1,072,607	33.57	432,230	45.96	427,398	58.05				
2008	1,285,048	33.94	428,513	44.44	424,893	48.26				
2009	1,903,552	33.87	442,091	45.97	429,174	43.56				

Table 1
Candidates' Enrolment and Performances in Science Subjects at SSCE (2005-
2000)

Source: WAEC Office, Ilorin, Kwara State, Nigeria

Table 2: Views of Lecturers from Federal and State Colleges of Education on the Adequacy of)f
Sequence of Course Content for the Attainment of NCE Physics Curriculum Objectives	

		Lecturers' views on the adequacy of the sequence of course contents for the attainment of Physics curriculum objectives					df	χ²cal	χ²crit	Decision
		Strongly Disagree	Disagree	Agree	Strongly Agree	Total	-			
Federal	Count	0	4	17	8	29				
Lecturers	Expected Count	.5	4.4	18.4	6.3	29.0				
										HO_1
State	Count	0	5	21	5	31	2	1.159	5.991	Not
Lecturers	Expected Count	.5	4.7	19.6	6.7	31.0				rejected
Total	Count	0	9	38	13	60	-			
	Expected Count	1.0	9.0	38.0	13.0	60.0				

Table 3: Views of Lecturers from Federal and State Colleges of Education on the Appropriateness of the Sequence of Course Content of NCE Physics Curriculum

		Lecturers' views on the appropriateness of the sequence of course contents of Physics curriculum					df	χ²cal	χ²crit	Decision
		Strongly Disagree	Disagree	Agree			_			
Federal	Count	0	4	18	7	29				
Lecturers	Expected Count	.5	4.4	18.9	5.8	29.0				HO ₂
State	Count	0	5	21	5	31	2	0.609	5.991	Not
Lecturers	Expected Count	.5	4.7	20.2	6.2	31.0				rejected
Total	Count Expected Count	0 1.0	9 9.0	39 39.0	12 12.0	60 60.0	-			