CHALLENGES OF IMPLEMENTING THE NCE MATHEMATICS PROGRAMME IN STATE AND FEDERAL COLLEGES OF EDUCATION IN SOUTH-EAST GEOPOLITICAL ZONE OF NIGERIA

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Abstract:

This study investigated the problems that affect the implementation of NCE Mathematics Education programme in Colleges of Education. The population of this study comprises of seven federal and state colleges of education in south east geopolitical zone of Nigeria. The population consisted of 206 mathematics education lecturers in seven colleges of education in south east Nigeria. NCE Mathematics programme implementation questionnaire (NCEMPIQ) was the instrument used for data collection. The data collected was analysed using mean, standard deviation and t-test statistics. The findings indicated that the problems which affects the implementation of NCE mathematics education programmes is to a higher extent in state colleges of education than federal colleges. Inference drawn therefore was that the problems that affect the implementation of NCE mathematics education programme differ significantly with state colleges of education having a higher mean rating. On the bases of the findings, the following recommendations were made. Government and stakeholders in education should adequately fund NCE mathematics education programmes by providing adequate man power, facilities and equipment for teaching mathematics in order to achieve the objective of the programme.

Keyword: Mathematics Education, Implementation, Programme, College of Education.

Introduction

Education is concerned with the transmission of worthwhile values such as skills, knowledge and activities that can develop learner's potential for Nation development. Education helps individuals formally through proper directions and guidance to develop their capabilities for their own benefits and that of the society. While teacher education is the training of individuals in other to equip them with necessary competencies and skills in given subject areas that will enable them teach same to students in schools. In colleges of education, teachers are trained in different subject areas such as English, Igbo, Social Studies, Physics and Mathematics.

Mathematics can be defined as a group of related sciences, including geometry, calculus and algebra which are focused on the study of number, space, shape and quality and how they interrelate using specialized notation. Mathematics is an essential discipline which forms the basis of all other sciences and deals with the material substance of space and time. According to Ale (2011) mathematics is the key to other science subjects. Mathematics education on its own is a channel towards the advancement of sciences and technology in any country. According to Betiki (2001), Mathematics education has been widely acclaimed to be the index of measuring any Nations socio-economic and geo-political development. Bassy (2010), stressed that the position of mathematics in the national curriculum and its role towards technological and

industrial development made it a compulsory subject at primary and secondary levels of education. Despite the relative importance of mathematics, it is very disheartening to note that the student's performance in the subject in both internal and external examination has remained consistently poor. This poor performance has been blamed on lack of laboratory, classroom, textbooks, teachers and other resources abound that will improve learning effectiveness and promote excellence in mathematics. The researcher therefore wants to identify the problems of mathematics education in colleges of education in south-east geopolitical zone of Nigeria.

Purpose of the study

The purpose of the study was to identify the problems that affect the implementation of NCE Mathematics Education in State and Federal College of education in South East Nigeria.

Research Question

What are the problems that affect the implementation of NCE mathematics education programme in state and federal colleges of education in south east Nigeria.

Hypothesis

The hypothesis that guided the study was formulated and tested at 0.05 level of significance.

Ho_1: The problems that affect the implementation of NCE mathematics education programme in state and federal colleges of education do not differ significantly.

Method

Study Area

The area of study was South East Nigeria, which comprises of five states Abia, Anambra, Ebonyi, Enugu and Imo states. There are seven colleges of education in these states (four Federal and three State Colleges).

Population of the study

The population of study consisted of all the seven colleges of education in South East Nigeria made up of 206 mathematics education lecturers (100 from federal and 106 from the state colleges of education. No sampling was carried out as the entire population was used.

Instrumentation

The instrument used for data collection was NCE Mathematics Education Programme Implementation Questionnaire (NCEMPIQ) developed by the researcher. The instrument was given to experts who scrutinized and validated the items of the instrument in relation to the research questions, hypotheses and purpose of the study. Their comments and suggestions helped to modify the items of the instruments to suit the problems under investigation. The instrument was trial tested and Cronbach Alpha was used to obtain the reliability indices for the various clusters of the instruments respectively and an overall reliability coefficient of 0.82 obtained. The instrument was administered to the students and lecturers on the spot to elicit information on the problems that affects the implementation of NCE mathematics education programme in state and federal colleges of education in Nigeria.

Result/Discussion

The result of the data collected were presented in line with the research question and hypothesis that guided the study.

Table 1: Mean ratings of the problems that affect the implementation of NCE mathematics education programmes in Federal and State Colleges of Education under study

S/N	Problems	$\overline{X}_1$	Federal N=100 SD_1	Dec_1	$\overline{X}_2$	State N = 106 SD_2	DEC_2
1	NCE programme is not adequately funded by the government	3.49	0.61	A	3.43	0.52	A
2	Inadequate current textbooks in mathematics	2.59	0.49	A	2.76	0.43	A
3	Facilities and equipment for teaching mathematics are not adequately available	2.87	0.80	A	2.88	0.41	A
4	Lecturers are not knowledgeable to teach mathematics	2.60	0.49	A	2.76	0.50	A
5	Lecturers are not knowledgeable to teach mathematics	2.27	0.74	D	2.45	0.68	D
6	Time allocated to mathematics teaching is not adequate	2.64	0.73	A	2.98	0.69	A
7	The curriculum of mathematics is not covered	2.73	0.76	A	3.35	0.74	A
8	The classrooms are not enough for students learning mathematics.	2.62	0.76	A	2.70	0.48	A
9	There are problems of coping with much assignments , home works in mathematics	2.87	0.66	A	2.72	0.47	A
10	The course credit load is too much for a given semester	2.67	0.65	A	2.73	0.45	A
	Cluster Mean	**2.76**	**0.44**	**A**	**2.88**	**0.31**	**A**

Key: N = Number of respondents, $\overline{X}_1$ = mean for federal, SD_1 = Standard Deviation for federal, DEC_1 = Decision for federal, $\overline{X}_2$ = mean for states, SD_2 = Standard Deviation for states, DEC_2 = Decision for states.

Result in Table 1 shows the mean and standard deviation in Federal and State Colleges of Education in South-East Nigeria. The respondents from both Federal and State colleges of education disagreed on item 5 (Lecturers are not knowledgeable to teach mathematics) as the problems that affect the implementation of NCE mathematics education programmes to a high extent. This is because the mean rating for this item was less than 2.50 set as criterion level. The respondents from both federal and state colleges of education agreed on item 9 (There are problems of coping with much assignments, home works in mathematics) as the problems that affect the implementation of NCE mathematics education programmes to a high extent. This is because the mean rating for this item is above 2.50 set as criterion level. This means that federal and state colleges of education agreed on the statements of item 1, 2, 3, 4, 6, 7, 8, 9 and 10 as problems that affect the implementation of NCE mathematics education programmes to a high extent. The cluster mean of 2.76 with a standard deviation of 0.44 for federal COE and 2.88 with standard deviation of 0.31 for state COE showed the problems listed on Table 1 affect the implementation of NCE mathematics education programmes in federal and state colleges of Education to a high extent. The cluster mean for state college of education was higher than that of federal college of education, indicating that the problems which affect the implementation of NCE mathematics education programmes is to a higher extent in state than federal.

Hypothesis

Table 2: t-test analysis of the significant different between state and federal colleges on the problems that affect the implementation of NCE mathematics education programmes

S/N	Items	Federal $\bar{X}$	(N=100) SD	State $\bar{X}$	(N=106) SD	t-cal	Df	Sig	Dec
1	NCE programme is not adequately funded by the government	3.49	0.61	3.43	0.52	0.71	204	0.48	NS
2	Inadequate current textbooks in mathematics	2.59	0.49	2.76	0.43	-2.71	204	0.01	*
3	Facilities and equipment for teaching mathematics are not adequately available	2.87	0.80	2.88	0.41	-0.08	204	0.93	NS
4	Lecturers are not adequate to teach mathematics	2.60	0.49	2.76	0.50	-0.90	204	0.37	NS
5	Lecturers are not knowledgeable to teach mathematics	2.27	0.74	2.45	0.68	-0.76	204	0.45	NS
6	Time allocated to mathematics teaching is not adequate	2.64	0.73	2.98	0.69	-3.44	204	0.01	*
7	The curriculum of mathematics is not covered	2.73	0.76	3.35	0.74	-5.89	204	0.00	S
8	The classrooms are not enough for students learning mathematics.	2.62	0.76	2.70	0.48	-0.88	204	0.38	NS
9	There are problems of coping with much assignments home work in mathematics	2.87	0.66	2.72	0.47	1.92	204	0.05	*
10	The course credit load is too much for a given semester	2.67	0.65	2.73	0.45	-0.73	204	0.47	NS
	Cluster t	**2.76**	**0.44**	**2.88**	**0.31**	**-0.28**	**204**	**0.02**	*****

Result in Table 2 showed the t-test analysis of the significant difference between the mean ratings of the problems that affect the implementation of NCE mathematics education programmes in state and federal college of education. The result showed that there was significant difference between federal and state colleges of education for items 2, 6, 7 and 9 on problems that affect the implementation of NCE mathematics education programmes. The Table also indicates that items 1, 3, 4, 5, 8 and 10 showed no significant difference between federal and state college of education with regards to the problems that affect the implementation of NCE mathematics education programmes. This is because their significant values are less than 0.05 level of significance for items 2, 6, 7 and 9. While significant values are greater than 0.05 level of significance for items 1, 3, 4, 5, 8 and 10. The cluster t-value of –0.28 with a degree of freedom of 204 and a significant value of 0.02 was obtained. Since the

significance value of 0.02 is less than 0.05 set as level of significance, this means that the null hypothesis which stated that the problems that affect the implementation of NCE mathematics education programmes in state and federal colleges of Education do not differ significantly was not upheld.

Discussion of Findings

Inference drawn therefore was that the problems that affect the implementation of NCE mathematics education programmes in federal and state colleges of Education differ significantly with state college of education having a higher mean rating. The findings reveal that NCE mathematics education programme is not adequately funded. This collaborate with the findings of Odo (2016) who asserts that in most colleges of education instructional facilities/materials for teaching and learning of mathematics are not adequate or not available and in some places where they are available is not functional because of lack of fund.

Conclusion

On the basis of the findings, the following conclusions were drawn that the problems that affect the implementation of NCE mathematics education programme is to a higher extent in state than federal. The problems that affect the implementation of NCE mathematics education programmes in federal and state colleges in Nigeria differ significantly with state colleges of education having a higher mean rating.

Recommendations

The following recommendations are made based on the findings of this study.

1. Facilities and equipment should be adequately provided in both state and federal colleges of education to reduce the problem of implementation of the programme.
2. Qualified and adequate mathematics education teachers should be employed.
3. Curriculum planners should review the content of mathematics education programme in other to reduce the credit load to achieve content coverage.

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