



## An Evaluation of Mathematics Curriculum Implementation in Nigerian Colleges: A Case Study of Adamu Tafawa Balewa College of Education, Kangere

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### ABSTRACT

*The aim of this study was the evaluation of Mathematics curriculum implementation in Nigerian Colleges. Adamu Tafawa Balewa College of Education, Kangere, was used as a case study. Research questions and hypotheses were developed and a mixed-method approach was used for the study. The sample was made up of fifty lecturers and five hundred students of the college, drawn randomly from a total population of one thousand four hundred and ninety. Questionnaires, interviews, and field notes were used throughout the study. Both descriptive and inferential data analyses were adopted. The findings revealed that Mathematics curriculum was not fully implemented in the college. Qualities of lecturers were observed to enhance the effective implementation of the curriculum. The study, therefore, recommends a thorough review of the Mathematics curriculum in Nigerian colleges of education.*

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### INTRODUCTION.

Evaluation is a key component of education. It involves measurement, test and value judgment (Masha, 2002 as cited in Ndubueze, Iyoke & Okoh, 2015). Qualities and standards of education are assessed through this means. Prosperities of any nation are mirrored by its educational standards. Stronger educational standard means formidable economy. Evaluation comes in different forms and one of such forms is the curriculum implementation. Curriculum implementation can be extended to various educational fields such as Mathematics and e.t.c.

In Nigeria and most part of the globe, Mathematics is regarded as a core course and the backbone that catalyses national, technological and economic development. Dwindling economies are often linked to poor analytic and mathematics skills (Onyeoghani, 2017). In Nigeria, Mathematics is compulsory

subject that must be acquired by any student. No student can be offer admission with a grade lower than credit level. Mathematics is often reference as real test of general knowledge. Questions taken during recruitments and promotional examinations are mostly mathematics-base. Mathematics, as it is known, enhances the analytic skills needed in solving complex problems in the labour market and important for personal development and success.

Performance of students in Mathematics examinations, both internal and external has caught the attention of government, parents and education stakeholders (Fajemidagba, 1986; Sule, 1990; Aminu, 2005; Abdul, 2010). The attitude of students towards the examination and their performance has triggered discussions for the need for proper government monitoring. Some argued that the failure of students in mathematics is directly linked to the



lecturers not having the required qualifications. Others believe the failure is as a result of lack of proper teaching and learning infrastructures, and congestion of the lecture theaters (Abdul, 2010).

In a similar argument, it is contended that students' academic performance is dependent on factors related to the contents of the curriculum, activities, and implementations (Hamisu, 2008). Once the contents of the curriculum are faulty, then implementations are difficult and the students, in turn, lose the zeal and interest in the learning processes and this thereby results in poor performance in examinations. In a related argument, traditional approaches use in the development and implementation of curriculum contents in Mathematics affect teaching and learning. The world is dynamic, so there are various approaches. In a case where an outdated approach is used, then it becomes detrimental and as such limits students' interest and participation (Abdul, 2010).

In a recent study conducted it was revealed that most students hardly answer or attempt beyond half of any given mathematics questions (Aminu, 2005; Abdul, 2010). This attitude and lack of interest among students encourage examination malpractice as a way to beat the government stand making the subject compulsory. With the increase in examination malpractice among mathematics students, it becomes pertinent to take a closer look at the lecturers. If proper teaching methodologies and curriculum implementations are being adhered to. This study, therefore, attempts to evaluate the implementation of the Mathematics curriculum in Nigeria Colleges, focusing primarily interest on the Adamu Tafawa Balewa College of Education (ATBCOE), Kangere, Bauchi, North-Eastern Nigeria. It is a pilot study in the college.

#### **CONCEPT OF CURRICULUM, EVALUATION AND IMPLEMENTATION**

Curriculum was originally related

to the concept of a course of studies followed by a pupil in a teaching institution. In fact, the term curriculum is mostly used to refer to the existing contract between society, the State and educational professionals with regard to the educational experiences that learners should undergo during a certain phase of their lives. For the majority of authors and experts, the curriculum defines: (1) why; (2) what; (3) when; (4) where; (5) how; and (6) and who can teach us (Tsui, 2009 as cited in Fatemeh, Mohammad & Azam, 2011). Curriculum revision process is a dynamic system of elements depending on each other which include needs analysis, setting issues and goals, and implementation and evaluation of programs (Kirkgoz, 2009).

Curriculum can be considered as a set of specific knowledge, skills and activities for students, or it may be defined as planned activities for foster teachers' teaching and student's learning. Or it may be further defined as teaching and learning across the nation which called the national curriculum, or it may be defined as school curriculum at school level or thematic curriculum at the subject level. Generally, curriculum defined as a set of planned activities and contents at the individual level, at a program levels, for teachers in schools, and students' teaching/learning process. Regarding curriculum development and change process, goals should have a maximum impact on teaching and learning through changes planned in content and activities for education process (Fatemeh, Mohammad & Azam, 2011). Talking about curriculum changes should be related to other concepts of curriculum effects. This may be critical to know how curriculum can be effective for teaching and learning and how the main factors could have a role in curriculum effects (Cheong Cheng, 1994). In the last decade increasing pace of technology development cause substantial changes in teachers, students and learning environments available in education system. Viewpoint of teachers



imply that curriculum has been clearly developed, and explain about teaching approaches is clear and understandable (Baybars, 2009). Students through curriculum training design as an educational effort, their effort include paying attention to theories, processes, products and assessment strategies which affects the implementation of plan and makes Curriculum a mean to increase the knowledge and understanding of the learners, develop the skills and change the values (Malcolm, 2005). Curriculum basically developed to change the teachers' views or make them aware; in this case it will not be effective. If the curriculum affects students it means that it can also affect teachers (Grossman & Thompson, 2008). The efficiency of curriculum and training program increase when teachers reflect on education goals, nature and needs of students, content and its level of sequence (khan, 2010).

After the development of the curriculum, conducting the needed analysis and the actual implementation of the designed curriculum, the development is not over as there are still lots of things to be considered. There is a need to deal with critical questions about whether the curriculum meets its basic aims and objective. What is the situation in the class in which we carry out the curriculum we designed, compared to the other examples, whether we achieve to design a better curriculum (Richards, 2001)? With the hope of finding impressive answers to the aforementioned critical questions, evaluation of the curriculum is important.

Evaluation is a broader concept dealing with every process in the curriculum development from the specification of the objectives to the design or adaptation of the materials and in-class implementation, and processing all the information gathered during the stages of development and application (Brown, 1995). Evaluation is just entirely concerned with the outcome but the approach. (Stenhouse, 1975) tackle the concept of evaluation with some basic questions such

as why, what, how long. There are so many aspects we can evaluate in a curriculum such as the needs of the curriculum as a whole or the students, sources, the system including curriculum, in-class implementation, the achievement and motivation of the students, the success of the school staff including lecturers/teachers and heads of administrations, and the conditions under which learning- teaching situation is carried out. Evaluation is centered to provide beneficial information to a larger audience and a theoretical base and context-based information on particular implementations. Literature provides some approaches to evaluate the curriculum. For example, (Brown, 1995) summarizes them under four main categories: 'product-oriented approaches', which focus on the extent of reaching the objectives, static characteristic approaches, conducted by an outsider to evaluate the efficacy of the program, and process-oriented approaches', which answer the questions of how to improve or revise the current curriculum, and decision facilitation approaches, based on collecting information before making decisions. When it comes to the types of evaluation there are two main types: formative and summative (Brown, 1995; Richards, 2001). Formative evaluation is conducted throughout the process and the main purpose of using formative evaluation is to gather data to improve the curriculum during the development and implementation of it (Brown, 1995; Richards, 2001). The data collected through a formative evaluation is mostly detailed, related to the process itself, and used for the improvement of the staff or the material and specifying the goals. Formative evaluation is in a way checking the quality in each stage of curriculum development and getting the feedback regularly and thus, it justifies the changes made by the staff during the process. Summative evaluation is conducted at the end of the process and it helps to determine to what extent the curriculum



or the course is successful, it deals with how effective the curriculum is (Brown, 1995; Richards, 2001). (Brown, 1995) criticizes summative evaluation as it ignores the fact of language program's being a continuing structure and suggests that the administrators of the program can stop the process and ask the questions related to summative evaluation while the program is being applied. However, summative evaluation still has a crucial place as it helps to see the bigger picture, and gives information on what has been accomplished in a period. Together with formative evaluation, summative evaluation can save the school staff from the troubles and stress of being evaluated by an outsider (Brown, 1995).

Another crucial aspect is how to conduct the evaluation. Post-modernity resulted in a paradigm shift and this has caused the redefinition of achievement and this shift puts more responsibility on the evaluation process in terms of giving effective feedback on the best choice under the policy based conditions (Kelly, 2004). With this shift, the emphasis on basing the curriculum on ideology has changed into an understanding of bearing the values, other dimensions, and factors putting a great responsibility on the stakeholders, participants of the curriculum (Kelly, 2004). The determination of the criteria for the evaluation is another challenge. According to (Kelly, 2004), there are three approaches to decide on criteria: 'theory based, policy-based and constructivist or ethnographic approach' and as well as providing benefits, these approaches also make it hard to specify such a criterion that is covering both the experience of the participants in the program and its rationale. The other two challenges are dealing with a big amount of data, knowing what to do and where to use it, and as the results of the evaluation are expected to support or construct a theory or provide information for the other programs in a broader sense, it is also challenging for the stakeholders how to deal with results and

report them (Kelly, 2004).

Curriculum implementation is the utilization of an innovative approach (Fullan, 1996). Implementation is one of the key important stages in the curriculum (Fullan, 1992). (Pitan, 2012) noted that approximately 75% of the implementation is unsuccessful. The problem of better implementation is linked to quality (Fullan, 2010).

The success of any curriculum implementation depends on the lecturers/teachers (Okello & Kagoire, 1996) as they are the main agents in the implementation process (Stenhouse, 1975). However, in Nigeria; (Ofoha, Uchegbu, Anyike, & Nkemdirim, 2009) noted that lecturers/teachers are hardly involved in the planning of the curriculum and this serves as a hindrance implementation. This will otherwise be accelerated if the lecturers themselves are directly involved in the planning and development of the curriculum (Beauchamp, 1975).

### **Research Questions**

This study is intended to evaluate the implementation of the Mathematics curriculum in Adamu Tafawa Balewa College of Education, Kangere from different perspective in the form of four basic questions:

1. Is the suggested methodology important to the effective implementation of Mathematics Curriculum in Adamu Tafawa Balewa Colleges of Education, Kangere?
2. What is the suitability of instructional materials to the effective implementation of the mathematics curriculum in Adamu Abubakar Tafawa Balewa College of Education, Kangere?
3. What is the Importance of Lecturers' qualification/competence to the effective implementation of curriculum content in Adamu



Tafawa Balewa College of Education Kangere?

4. What are the roles of the student population in the implementation of Mathematics Curriculum in Adamu Tafawa Balewa College of Education, Kangere?

#### **Research Hypotheses**

The research hypotheses are:

1. **HO1:** No significant difference between suggested methodology and effective implementation of Mathematics Curriculum in Adamu Tafawa Balewa College of Education Kangere.
2. **HO2:** No difference between instructional materials and effective implementation of the Mathematics curriculum in Adamu Tafawa Balewa College of Education Kangere.
3. **HO3:** There exists no difference between lecturers' qualifications and mathematics curriculum implementation in Adamu Tafawa Balewa College of Education Kangere.
4. **HO4:** No significant difference between students' population and effective implementation of the mathematics curriculum in Adamu Tafawa Balewa College of Education Kangere.

#### **RESEARCH METHODOLOGY**

This study is a descriptive and a survey designed is adopted to collect data from the samples using proportionate sample allocation technique. This involves systematic data collection from the targeted samples using well designed and tested questionnaires.

The population of this study comprises the entire Mathematics department in Adamu Tafawa Balewa College of Education, Kangere. There are one thousand four hundred (1400) students and ninety (90) Mathematics lecturers including part-time. The department has three major options,

these include Mathematics/Integrated Science, Mathematics/Computer Science and Mathematics/Economics. The Mathematics/Integrated Science is made up of seven hundred (700) students, forty lecturers (40), Mathematics/Computer Science has five hundred students (500) and thirty lecturers (30) while Mathematics/Economics has two hundred students (200) and twenty lecturers (20).

The study was conducted at the Adamu Tafawa Balewa College of Education, Kangere, Bauchi, Nigeria. The sample for the study comprised fifty lecturers and five hundred students drawn through a random sampling technique. The sample size was determined using a convenience technique. The five hundred Mathematics students were randomly selected out of a population size of one thousand four hundred and the fifty lecturers were picked out of a population of ninety to part-take in the study.

This study used questionnaires as a key instrument for data collection. It was formulated to acquire information necessary to test the research hypotheses. It also conforms to the objectives of the study. Two different types of questionnaires were administered in this study; the students' and the lecturers' questionnaires. Each questionnaire contains two sections. The first is centered on the demographic information of the respondents and the second focused on the structured questions and response against it. The items used in the questionnaires are thirty-five and thirty for students' and lecturers' respectively. Most of the items were adopted from a validated instrument of Mehmet and Ismet as cited in [4]. The structured responses used in the form are of the form: SA, A, SD, DA, UD which means Strongly Agreed, Agreed, Strongly Disagreed, Disagreed, and Undecided respectively.

The two categories of questionnaires used for this study are valid as it is pre-tested on small group samples designed on stated objectives and hypotheses. The validity of the



questionnaires was further established by (Mehmet, 2005) since part of it was adopted.

The data collection started by giving out questionnaires using the spot technique and a random approach. The targeted respondents were given time to fill the questionnaire. The questionnaires were returned after filling. A total number of 550 questionnaires were used in the study.

Descriptive and inferential

statistical tests were used in the course of this study. This also includes the use of Chi-square analysis to address the stated hypotheses. The Chi-Square enables us to determine the acceptability or otherwise of the null hypothesis. This was done to ascertain if there exists a significant difference between Mathematics curriculum, its implementation, and effectiveness in Adamu Tafawa Balewa College of Education, Kangere, Bauchi North-Eastern Nigeria.

## RESULTS

### *Importance of Suggested Methodologies to Effective Implementation*

**Table 1.** Importance of Suggested Methodology to Effective Implementation of Mathematics Curriculum in ATBCOE, Kangere

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Suggested instructional materials	133(24%)	85(16%)	157(29%)	123(22%)	52(9%)
2	Students' population	85(15%)	132(24%)	158(29%)	141(26%)	34(6%)
3	Students' background	91(16%)	124(22%)	174(32%)	152(28%)	9(2%)
4	Students' centered approach	72(13%)	145(26%)	175(32%)	52(28%)	6(1%)
5	Content coverage	140(25%)	123(22%)	159(29%)	103(19%)	25(5%)

Table 1 Shows that suggested methodologies are neither important to students background nor to students' centered approach. It also reveals that the

Mathematics curriculum is not relevant to the students' population as 55% of the respondents disagreed with the view.

**Table 2.** Suitability of Mathematics Curriculum Contents for Effective Implementation in ATBCOE Kangere

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Content arrangement	185(34%)	151(27%)	103(19%)	85(15%)	26(5%)
2	Importance to students' needs	143(26%)	117(21%)	145(26%)	135(25%)	10(2%)
3	Contents encourage learning by practices	144(26%)	141(26%)	147(27%)	115(21%)	03(0%)
4	Real world situations are given in activities and examples	108(20%)	123(22%)	167(30%)	83(15%)	69(13%)
5	Contents encourage students' participation	124(22%)	137(25%)	168(31%)	119(22%)	02(0%)
6	Contents activities are lecturers centered	167(31%)	150(27%)	106(19%)	89(16%)	38(7%)
7	Contents are difficult for students background	91(34%)	159(29%)	114(21%)	76(14%)	10(2%)



Table 2 indicates that the Mathematics curriculum contents are difficult for students' background as 63% of the respondents agreed. Some section

of the respondents also affirmed that the curriculums are mainly centered on the lecturers and thereby ignoring students' needs.

**Table 3.** Extent of Mathematics Curriculum Implementation in ATBCOE, Kangere.

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Excellent	71(13%)	43(8%)	222(40%)	168(31%)	46(8%)
2	Average	155(28%)	138(25%)	113(21%)	115(21%)	29(5%)
3	Below Average	87(16%)	84(15%)	197(36%)	164(30%)	18(3%)
4	Poor	62(11%)	46(8%)	203(37%)	174(32%)	65(12%)

Table 3 shows that 71% of the respondents said that Mathematics curriculum are not excellently implemented in the college. 69% also contended that the curriculum implementations in Adamu Tafawa Balewa

College of Education, Kangere are poor. 66% however, agreed that the extent of the implementation is not below average and 53% said the implementations of the curriculum is at average level.

#### **Suitability of Instructional Materials to Effective Implementation of the Mathematics Curriculum**

**Table 4.** Suitability of Instructional Materials to the Effective Implementation of Curriculum Content in ATBCOE, Kangere

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Contents/Topics	265(48%)	184(33%)	64(12%)	27(5%)	10(2%)
2	Students' needs	105(19%)	122(22%)	112(20%)	115(21%)	96(18%)
3	Lecturers Suggested Activities/ Methodologies	134(24%)	133(24%)	103(19%)	109(20%)	71(13%)
4	Content coverage	170(31%)	150(27%)	138(25%)	75(14%)	17(3%)
5	Adequacy of the Materials	182(33%)	164(30%)	91(16%)	81(15%)	32(6%)

Table 4 indicates that 81% of the respondents agreed that the instructional materials used in the effective implementation of Mathematics curriculum in ATCOE, Kanagere are suitable

to the contents. In a similar view, 63% agreed that the instructional materials are adequate for effective implementation while 58% thinks it is suitable to the content coverage.

**Table 5:** Importance of Lecturers' Qualification/Competence to the Effective Implementation of Curriculum Content in ATBCOE, Kangere

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Fully qualified	165(30%)	234(42%)	114(21%)	27(5%)	10(2%)
2	Ability to deliver mathematics curriculum effectively depends on the qualification of lecturers	05(1%)	122(22%)	262(48%)	65(12%)	96(17%)



3	Full implementation of curriculum is dependent on qualifications	184(33%)	83(15%)	103(19%)	104(19%)	76(14%)
4	Content coverage depends on qualifications	50(9%)	70(13%)	338(61%)	75(14%)	17(3%)
5	Selection of instructional material depends on qualifications	82(15%)	64(11%)	291(53%)	81(15%)	32(6%)

Table 5 shows that effective implementation of the Mathematics curriculum in the college depend on the qualifications of the lecturers as 75% of the respondents claimed it does. On a question of the level of qualifications of the lecturers in the college, 72% said the

lecturers who teach Mathematics courses are fully qualified. 68% said the selection of instructional materials for effective implementation does not depend on the qualification of lecturers handling such selection.

**Table 6.** Students' Population to effective Implementation of Mathematics Curriculum Content in ATBCOE Kunguru

S/N	Questionnaire Items	Responses				
		SA	A	SD	D	U
1	Lecture classes are over populated	302(60%)	138(28%)	24(5%)	09(2%)	27(5%)
2	Class populations are manageable	15(3%)	24(5%)	339(68%)	77(15%)	45(9%)
3	Over population enhance effective classroom management	12(2%)	15(3%)	314(63%)	150(30%)	09(2%)
4	Over populated lecture classes enable proper curriculum coverage	12 (2%)	15(3%)	311(62%)	134(27%)	28(6%)
5	Lecturing and learning are effective in over populated classes	15(3%)	24(5%)	333(66%)	80(16%)	48(10%)

Table 6 indicates that overpopulation does not enhance effective classroom management as 93% agreed that it does not. In a similar view, over population of lecture

theaters/classroom prevent curriculum coverage as 89% of the respondents agreed to the claim. 88% also confirmed that Mathematics lecture theaters/classes are overpopulated in the college.

### ***Difference between Suggested Methodologies and Effective Implementation of the Mathematics Curriculum***

**Table 7.** Contingency Table on Difference between Suggested Methodology and Effective Implementation of Mathematics Curriculum in ATBCOE, Kunguru

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
33	10.9	22.1	488.41	44.81
16	5.5	10.5	110.25	20.0
1	0.2	0.8	0.64	3.2
X <sup>2</sup> Calculated				68.06
Critical Value				7.82

Table 7 shows that the calculated Chi-square (68.08) is greater than the

critical value of 7.82 at .05 level of significance and 3 degree of freedom (DF).





Thus the null hypothesis is rejected. This showed that there is a significant difference between the suggested

methodology and the effective implementation of the mathematics curriculum in ATBCOE, Kangere.

**Difference between Suggested Instructional Materials and Effective Implementation of the Mathematics Curriculum**

**Table 8.** Table of Contingency on the Difference between Instructional Materials and Effective Implementation of Mathematics Curriculum in ATBCOE, Kangere

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
170	562.3	-392.3	153899.29	273.70
150	244.7	-94.7	8968.09	36.65
138	409.6	-271.6	73766.56	180.09
75	178.2	-103.2	10650.24	59.77
X <sup>2</sup> Calculated				550.21
Critical Value				9.49

Table 8 indicates that there is a significant difference between instructional materials suggested in the curriculum and effective implementation of Mathematics Curriculum in ATBCOE,

Kangere as the Calculated Chi-square value 550.21 is significantly greater than the critical values of 9.49 at .05 level of significance and 4 degree of freedom. The stated null hypothesis is therefore rejected.

**Difference between Lecturers' Qualifications and Effective Implementation of the Mathematics Curriculum**

**Table 9.** Table of Contingency on the Difference between Lecturers' Qualifications and Effective Implementation of Mathematics Curriculum in ATBCOE, Kangere

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
323	275	48	2304	8.38
227	275	-48	2304	8.38
X <sup>2</sup> Calculated				16.76
Critical Value				5.99

Table 9 shows that there is a difference between the lecturers' qualifications and the curriculum implementation in ATBCOE, Kangere. This conclusion was reached after a careful review of the results in Table 4.9. The

calculated Chi-value stands at 16.76 which are statistically significant at the critical value of 5.99 at .05 level of significance and 2 DF. The observation prompted the rejection of the null hypothesis.

**Difference between Students' Population and Effective Implementation of the Mathematics Curriculum**

**Table 10.** Contingency Table on the Difference between Students' Population and Effective Implementation of Mathematics Curriculum in ATBCOE, Kangere

O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
323	275	48	2304	8.38
227	275	-48	2304	8.38
X <sup>2</sup> Calculated				16.76
Critical Value				5.99



Table 10 indicates that there is a significant difference between students' population and curriculum implementation in ATBCO, Kangere as the  $X^2$  calculated value of 16.76 is greater than the critical value of 5.99 at .05 level of significance. Thus the stated null hypothesis is rejected. The analysis reviewed that there exists a difference between students' population and curriculum implementation.

### DISCUSSION

Evaluation of curriculum implementation has been a major topic of interest for researchers in the field of education. The findings of this study agreed with many previous studies carried out on a similar topic. As noted earlier, the main excess of this study is to evaluate the implementation of the Mathematics curriculum in Nigerian colleges, using Adamu Tafawa Balewa College of Education Kangere as a case study.

The first question relates to the importance of the suggested methodology to the effective implementation of the Mathematics curriculum in Adamu Tafawa Balewa College of Education Kangere. The results of the analysis are presented in **Tables 1, 2 and 3**. Findings of **Table 1** aimed to analyze the importance of the suggested methodology to the various suggested items such as importance to suggested instructional materials, importance to students' population, importance to students' background, importance to the students' centered approach and importance to contents coverage. Study of the results against each of the mentioned items revealed that the suggested methodology is not important. The variables were not formulated to suit students' needs. **Tables 2 and 3** shows that activities and examples enshrined in the methodology were mostly lecturers' centered.

The role of both lecturers and students in facilitating effective curriculum implementation is primarily

focused on students' preparedness and full engagement in the teaching-learning processes. In a similar view, a successful implementation is determined by the level of students' understanding and the contents cover within a specific period. The table also revealed that the extent to which the Mathematics curriculum is being implemented in the college was found to be largely unsatisfactory. Most of the lecturers were not able to complete the assigned curriculum contents within the stipulated time and in most cases, skipped the contents/topics entirely.

This question seeks to look at the suitability and effectiveness of the various instructional materials use in the implementation of the mathematics curriculum in the college. The analysis presented in **Table 4** helps us in shining more light on this question. The question became pertinent since scholars of education identified instructional materials as a key component of any curriculum implementation across schools in the country. Accordingly, **Table 4** shows the analysis of the suitability of the instruction materials to contents/topics, students' needs, lecturers suggested activities/methodology, contents coverage, and adequacy of the materials. The findings pointed out that the suggested materials were not entirely important to the tested variables except for contents/topics.

Conclusively, the suggested instructional materials did not in any way boost the psychological needs of the students, but reduced the zeal of the students and made such students lose interest in the entire teaching and learning processes.

As earlier stated, this question tried to establish the importance of the lecturers' qualifications and competence to the effective implementation of the Mathematics curriculum in the college. Qualification is one of the key components of education. It is pertinent



to understand whether the level of lecturers' qualification has any impact on how the curriculum is being implemented by such lecturers. Analysis of the **Table 5** shows that a high percentage of the lecturers teaching courses in Mathematics were not professionally qualified or competent enough to handle the course. By implication, affected the proper implementation of the assigned course since such lecturers lacked the technical know-how.

The analysis for the question is presented in **Table 6**. Results indicated that overcrowded class affects the effective implementation of the Mathematics curriculum just as it did to teaching and learning as well as classroom management. Concerning the results of the study, implementation, as noted before, were generally below expectation. This is supposedly due to some reasons, namely: non-importance of curriculum contents to students' psychological needs, aspiration, and background. Most of the students had a poor background in Mathematics beginning from primary and secondary schools before proceeding to the college.

Also in the bid to achieve the aim of the study, four null hypotheses were formulated and tested using Chi-square statistical analysis. The hypotheses were developed to identify, if any, the existence of difference or otherwise between the two stated variables in each case. Accordingly, the discussion of the finding concerning the null hypotheses are presented below:

This hypothesis attempted to find the difference between suggested methodology and effective implementation of the Mathematics curriculum in ATBCOE, Kangere. The results are presented in **Table 7**. The results show that there exists an essential difference between the two variables. Those methodologies did not facilitate the Mathematics curriculum implementation in AdamuTafawaBalewa College of Education, Kangere.

This second hypothesis looked into the existence of a difference between the instructional materials and the implementation of the Mathematics curriculum in ATBCOE, Kangere. The hypothesis was tested using Chi-square analysis and the results presented in **Table 8**. The analysis reveals that there is a great difference between the suggested instructional materials and curriculum contents implementation in the college. It further indicates that the suggested instructional materials could not enhance proper and faster implementation of the curriculum to meet targets.

The results of this hypothesis are given in **Table 9**. The results point out that there is a relevant difference between the lecturers' qualifications and the effective implementation of the Mathematics curriculum in the college. This conclusion followed the rejection of the null hypothesis having observed that the Chi-square value (calculated) was greater than the critical value.

This hypothesis looks at the difference between the students' populations and curriculum implementation. The results as presented in table 4.10, deduces that there exists a difference between the two stated variables.

## CONCLUSION AND RECOMMENDATIONS

Observations and various analyses carried out in the study indicated that the implementation of the Mathematics curriculum in Adamu Tafawa Balewa College of Education Kangere is at discouraging stated. The curriculum is not being implemented fully. The implication of this is the long term effects it has on the nation's education sectors. The Colleges of Education are teachers training institutions where the future lecturers and teachers are been trained. Having a poor foundation implies that the same half bake knowledge will be transferred to the future and potential students of such candidates.

The study paper recommends thorough review of the Mathematics



curriculum and the suggested methodologies and instructional materials use in the implementations. Further, lecturers with education background should be engaged to teach Mathematics courses in the college.

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