Lecturers' Perception of the Core Curriculum Minimum Academic Standards for Science Education and Vocational and Technology Education in Universities in Rivers State

[*1]Legborsi Nwineh Ph.D, [2]Francis Samuel Peppleand[3]Cherry Victoria Iderefa Ekine

[1]DEPARTMENT OF VOCATIONAL AND TECHNOLOGY EDUCATION RIVERS STATE UNIVERSITY, PORT-HARCOURT, NIGERIA

[2]DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION RIVERS STATE UNIVERSITY, PORT-HARCOURT, NIGERIA.

[3]TEACHERS REGISTRATION COUNCIL OF NIGERIA

[*]Correspondence: nwineh.legborsi@ust.edu.ng

ABSTRACT

This study investigated the lecturers' perception of the new Core Curriculum Minimum Academic Standard for Science Education, Vocational and Technology Education in two universities in Rivers State. The study participants were 31 lecturers from two programmes in two universities. This comprised 9 lecturers from Rivers State University and 22 from Ignatius Ajuru University of Education. Data were collected using a questionnaire which had both provision for closed andopen-ended responses. It was subjected to face and content validity by three experts and internal consistency reliability test which yielded Cronbach Alpha coefficient of 0.91. Data were analysed using mean and chi-square. The result showed that lecturers had a positive perception about the usefulness of the curriculum standard. However, there was divergent views about the ease of implementation of the curriculum as well as attitude towards the curriculum between lecturers from the two institutions. Furthermore, a significant association was found between perception on the usefulness of the curriculum and attitude towards the curriculum. On the other hand, there was no significant association between the perception on the ease of implementation and attitude towards the curriculum. Staff development for effective implementation of the new curriculum was recommended among others.

Keywords: Curriculum Implementation, Vocational and Technical Education, Curriculum Standards, Academic Standards, Science Education,

Introduction

Curriculum is an important tool for the successful running of a school towards achievement of educational goals for meeting students' and societal needs. Curriculum is defined as a list of courses, subjects, subject matter content or a programme of study in a school (Dyjur& Kalu, 2018). It is also defined as the entire experiences for which the learner must be exposed, to fit into a society (Mulenga, 2018). These experiences according to Matshe and Mahlangu (2014) comprise all planned and unplanned activities (such as unplanned social interrelationships) within and outside the school but under supervision of the school to ensure learning. Furthermore, the curriculum is defined as a list of activities planned and organized by the school to meet the needs of the learner (Ojong & Maduka 2013; Muskin, 2015; Marzooghi, 2016). A broader definition of curriculum is given by Mulenga (2018) which views curriculum as educational experiences aimed at producing desired societal learning outcomes among learners. Curriculum has four key elements which are aims, goals and objectives; content, learning experience and evaluation (Nwanna, 2007; Pratt, 1994; Tyler, 1949).Putting these three definitions together, it can be deduced that curriculum is a programme of educational

activities, comprising the content of instruction, learning goals and objectives together with the implementation processes aimed at developing students to meet their needs and that of the society.

The above definitions, show that curriculum is of significant benefit toschool administrators, teachers, students and other relevant stakeholders to the school system.Among other things, the curriculum contains a list of content requirements and learning outcomes which school administrators can use during monitoring, supervision and programme evaluation exercises. The curriculum guides the teacher in preparing instructional content towards imparting desired knowledge among students. The curriculum contains the content and importance of what students need to do to complete their educational programme. This can serve as motivation for students towards putting in effort for success (Afful, 2018; Glenn, 2018).Stressing the importance of curriculum, Mondal and Das (2021), regarded the curriculum as one of the most important components of an educational system as the teaching and learning process depends on the content of the curriculum.

It is important to note that curriculum is dynamic. This is because the curriculum provides content, experiences and processes needed to prepare people for the society which is also dynamic. Consequently, the curriculum content should reflect the demands of the society as well as the needs of the students such that upon graduation, the students can contribute meaningfully to the development of the society. This implies that there is continual need for curriculum review to update content to the societal requirement and students' need.

Curriculum review is regarded as a formative process through which academic staff of an institution engage in critical examination of the curriculum of an educational programme with the aim of enhancing learning experience towards effective learning outcome among students(Dyjur& Kalu, 2018). Curriculum review is also defined as the process of modifying an existing curriculum by substituting unneeded elements with needed elements for improvement based on societal demands (Olaitan & Ali in Kagara & Dauda, 2013). It is a rewarding process as it leads to improvement in teaching and learning, aids critical examination of the curriculum, offers guide for decision making (Dyjur& Kalu, 2018). Other benefits of curriculum review are improvement in student learning and experience, provision of an avenue for critical examination of the curriculum, provision of opportunity for articulating the strength of a programme, promotion of interaction among everybody that plays active role in the programme, provision of opportunity to get input from students, enhancement of instructional activities, promotion of opportunity for identification of particular actions needed for strengthening the programme delivery (Dyjur, Grant & Kalu, 2019).

There are a number of processes or procedures involved in curriculum review process. These processes depend on the level of modification or changes expected in the curriculum content. In cases where no fundamental change is expected, the process could just involve four steps including: 1) reviewing of the aims, objectives, competencies of the curriculum; 2) revising the objectives and competencies of the subjects as well as learning outcomes; 3) selecting suitable content for the revised competencies and 4) developing the textbooks and other needed learning materials. However, if the intended review is going to involve fundamental structural change to the curriculum content, then the process could be more elaborate comprising about five phases which are 1) curriculum analysis, 2) needs assessment as well as situational analysis, 3) refinement of objectives, terminal competenciesand alsolearning outcomes, 4) specifying activity and skills needed to achieve the objectives, competences and learning outcomes 5) developing the textbooks and other needed learning materials (Sedere, 2011). These

procedures are similar to recommended procedures by Dyjur, Grant and Kalu (2019) which include: posing guiding questions, provision of vision for programme, specifying learning outcomes, collection of data, data analysis and discussion, creating plan of action, producing report, implanting action plan and provision of interim report.

In tertiary institutions in Nigeria, the job of curriculum preparation has been the responsibility of the different regulating bodies in charge of the institutions in collaboration with lecturers within the institutions. For example, Polytechnics and Monotechnics are regulated by the National Board for Technical Education. The Colleges of Education are regulated by National Commission for Colleges of Education and the Universities are regulated by the National University Commission. The process involves collaborative effort from stakeholders comprising, academic experts and government represented by National University Commission, professional bodies from the private sector usually represented by the Nigerian Economic Summit Group (NESG) (Ohiare-Udebu, Ogunode, Sarafadeen & Ayoko, 2023).

The universities in Nigeria over the years have been operating with the Benchmark Minimum Academic Standards (BMAS). This is a curriculum document that specifies the minimum academic requirements for different academic programmes offered by different faculties and departments in the Nigerian universities. A typical complain about this curriculum as expressed in the literature is limited relevance to the demands of the society and labour market (Nwadiokwu, 2019). Consequently, in recent time, the Federal Ministry of Education through the Nigerian Universities Commission initiated the review of the BMAS with the aim of producing a curriculum that will expose students to educational experiences to qualify them to compete favourably in the global market (Ogunode, Ohibime, &Oluwaseun, 2023). The perception of lecturers on this initiative of the Federal Ministry of Education is important to the successful implementation of this curriculum. This study therefore sought the perception of Vocational and Technical Education lecturers on the Core Curriculum and Minimum Academic Standards (CCMAS).

Statement of the problem

Introduction of new things usually generate varying reactions from members of an organization.This is due to the fact that individuals vary in their view and interest. Consequently, some individuals who may not be comfortable with the new thing may kick against it. The situation is not different for the CCMAS. The Nigerian universities have been operating with the BMAS all these years. The initiation of the CCMAS could also generate diverging views from lecturers. These views could impact positively or negatively on the implementation of the CCMAS. Consequently, it is a need to examine the perception of lecturers on the CCMAS. It was against this background that the study was undertaken to find out the perception of lecturers on the usefulness and ease of implementation of the CCMAS.

Purpose of the study

The purpose of the study was to investigate the acceptance of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State. Specifically, the study intended to:

1. find out the perception of the usefulness of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.
2. find out the perception on the ease of implementation of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.
3. ascertain the attitude toward new core curriculum minimum academic standards among vocational and

technical education lecturers in universities in Rivers State.

Research Questions

The study was guided by the following research questions.

1. What is the perception of the usefulness of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?
2. What is the perception on the ease of implementation of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?
3. What is the attitude toward new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?

Hypotheses

The study was guided by the following two hypotheses which were tested at 0.05 alpha level of significance.

1. There is no significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State**.**
2. There is no significant association between the perception of the ease of implementation and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State**.**

Methodology

The study adopted a descriptive survey research design with study participants comprising 31 lecturers of two different departments: Science Education and Vocational/Technology Education from two universitiesin Rivers State, Nigeria. This number comprised9 from Rivers State University and 22 from Ignatius Ajuru University of Education (Source: Office of the Head of Department of vocational and technical education for the two institutions). The sample for the study was 31 obtained through census sampling technique. The data collection instrument for the research was a structured questionnaire titled: Lecturers' Perception of CCMAS Questionnaire, designed by the researcher based on literature review. The response options were structured on a four scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument also had space for open ended responses. It was subjected to face and content validity by distributing it together with the research questions to three experts. Necessary corrections were made on the instrument based on their comments before the final copy produced for data collection.

The instrument was subjected to internal consistency reliability test using Cronbach Alpha. This yielded a reliability coefficient of 0.90 for the first part of the instrument used for eliciting data on perceived usefulness of CCMAS, 0.74 for the second part used to elicit data on perceived ease of implementation, 0.70 for the third part used to elicit data on the attitude towards CCMAS and an overall reliability coefficient of 0.91. A total of 31 copies were administered and a total of 31 copies (9 from Rivers State University and 22 from Ignatius Ajuru University of Education) retrieved and used for data analysis.

Descriptive statistics of mean was used for analyzing data for the research questions. A decision rule of 2.50 was adopted. Mean scores equal to or greater than 2.50 were considered as agreed while mean scores less than 2.50 were considered disagreed. Chi-Square was used to test the hypothesis at 0.05 alpha level of significance. Chi-square was used because the hypotheses investigated the association between perception of the ease of use and attitude as well as association between the ease of implementation and attitude towards

CCMAS and the data collected were in frequency count. Analysis was done using MS Excel and Statistical Package for Social Science (SPSS), version 25.

Result

The results of the study are presented in tables. Criterion means of 2.50 are used as decision.

Research question 1

What is the perception of the usefulness of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?

Table 1

Mean Responses on the Usefulness of CCMAS

S/N	Perception on the Usefulness	RSU (n=9)			IAUOE (n=22)		
		$\bar{x}$	S.D.	RMK	$\bar{x}$	S.D.	RMK
1	The curriculum will develop creativity among students.	2.78	0.67	A	3.82	0.66	A
2	The curriculum will develop innovative skill among students.	2.89	0.78	A	3.77	0.69	A
3	The curriculum is student-centred.	2.78	0.67	A	3.68	0.57	A
4	The curriculum will help students learn entrepreneurship skills.	2.67	0.71	A	3.82	0.39	A
5	The curriculum will help students develop business skills.	2.67	0.71	A	3.50	0.80	A
6	The curriculum is practically oriented.	2.67	0.71	A	3.77	0.61	A
7	The curriculum is capable of preparing students for the labour market.	2.67	0.71	A	3.82	0.50	A
8	The curriculum has indepth coverage of content useful for teaching vocational and technical education.	2.89	0.78	A	3.77	0.53	A
9	The curriculum promotes collaborative learning.	2.78	0.67	A	3.50	0.91	A
	Grand Mean	2.75		A	3.72		A

rmk =remark; a = agree; d = disagree

The result in Table 1 shows the perception of lecturers on the usefulness of the core curriculum minimum academic standard (CCMAS). As shown, there is positive perception of the usefulness of the programme among lecturers from Ignatius Ajuru University of Education (IAUOE) and Rivers State University (RSU). This is evident by grand mean responses of 2.75 for lecturers of Rivers State University and 3.72 for lecturers of Ignatius Ajuru University of Education. The mean responses for items 1, 2, 3, 4, 5, 6, 7, 8 and 9 being greater than 2.50 further show that the both groups of lecturers had positive perception about the usefulness of the core curriculum minimum academic standard.

Research question 2

What is the perception on the ease of implementation of the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?

Table 2

Mean Responses on the Ease of Implementation of CCMAS

S/N	Perception on the Ease of Implementation	RSU (n=9)			IAUOE (n=22)		
		$\bar{x}$	S.D.	RMK	$\bar{x}$	S.D.	RMK
1	There are enough teaching staff for implementation of the new curriculum.	2.67	0.71	A	3.73	0.70	A
2	There are enough infrastructural facilities for implementing the curriculum.	2.00	0.50	D	3.73	0.55	A
3	There are adequate instructional materials to implement the curriculum.	1.89	0.33	D	3.77	0.69	A
4	There are enough technologists for implementing the curriculum.	1.89	0.33	D	3.73	0.46	A

5	There is conducive atmosphere for implementing the curriculum.	1.89	0.33	D	2.59	0.96	A
	Grand Mean	2.07		D	3.51		A

The result in Table 2 shows the lecturers' perception of the ease of implementation of the core curriculum minimum academic standard (CCMAS). The result showed that there is a general negative perception about the ease of implementation of the curriculum among lecturers from RSU as evident by grand mean responses of 2.07. However, there is a positive perception about the ease of implementation among lecturers from IAUOE as evident by grand mean response of 3.51. However, the both set of lecturers perceive that there are enough teaching staff for implementation of the new curriculum. This is evident by mean response of 2.67 for lecturers from RSU and 3.73 for lecturers from IAUOE.

Research Question 3

What is the attitude toward new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State?

Table 3

Mean Responses on Attitude towards CCMAS

S/N	Attitude towards the CCMAS	RSU (n=9)			IAUOE (n=22)		
		$\bar{x}$	S.D.	RMK	$\bar{x}$	S.D.	RMK
1	I am interested in delivering instruction using the new curriculum.	3.00	0.50	A	1.95	0.95	D
2	I am very much motivated to use the content for instructional delivery.	3.33	0.50	A	1.91	0.75	D
3	I am satisfied with the content coverage of the curriculum.	3.00	0.71	A	2.00	0.82	D
4	I am confident that the curriculum would be effective in helping students learn science subjects effectively.	3.00	0.00	A	2.77	1.07	A
5	I like the way content of the curriculum are structured.	3.00	0.50	A	3.50	0.91	A
	Grand Mean	3.07		A	2.43		D

rmk =remark; a = agree; d = disagree

Result in Table 3 shows the lecturers' attitude towards the CCMAS. As shown, grand mean value of 3.07 for lecturers of RSU suggests that lecturers from Rivers State University had positive attitude towards the CCMAS. On the other hand, a grand mean 2.43 for lecturers from Ignatius Ajuru University of Educationsuggests that they had somewhat negative attitude towards CCMAS. However, they were confident that the curriculum would be effective in helping students learn science subjects effectively**.** They also liked the way content of the curriculum were structured**.** These are evident by mean responses of 2.77 and 3.50 for items 4 and 5.

Hypothesis 1

There is no significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.

Table 4

Association between Perception of Usefulness and Attitude towards CCMAS

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.525[a]	6	.003
Likelihood Ratio	11.688	6	.069
Linear-by-Linear Association	.275	1	.600
N of Valid Cases	31		

a. 9 cells (75.0%) have expected count less than 5. The minimum expected count is .06.

The result in Table 4 shows the chi square result for the association between the perception of the usefulness and attitude towards the new core curriculum minimum

academic standards. The result shows a chi square value $X^2(df = 6) = 19.53$; $p<0.05$. Based on this, the hypothesis was rejected. This suggests that there was a significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.

Hypothesis 2: There is no significant association between the perception of the ease of implementation and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.

Table 5

Association between Perception of Ease of Implementation and Attitude towards CCMAS

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.047[a]	6	.123
Likelihood Ratio	13.124	6	.041
Linear-by-Linear Association	.556	1	.456
N of Valid Cases	31		

a. 10 cells (83.3%) have expected count less than 5. The minimum expected count is .06.

The result in Table 5 shows the chi square result for the association between the perception of the ease of implementation and attitude towards the new core curriculum minimum academic standards. The result shows a chi square value $X^2(df = 6) = 10.05$; $p>0.05$. Based on this, the hypothesis was accepted. This suggests that there was no significant association between the perception of the ease of implementation and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State.

Discussion of findings

The first research question focused on ascertaining the lecturers' perception of the usefulness of the core curriculum minimum academic standard (CCMAS). The result showed that the lecturers perceived that the curriculum will develop creativity among students; the curriculum will develop innovative skill among students; the curriculum is student-centred; the curriculum will help students learn entrepreneurship skills; the curriculum will help students develop business skills; the curriculum is practically oriented; the curriculum is capable preparing students for the labour market; the curriculum has in-depth coverage of content useful for teaching vocational and technical education; the curriculum promotes collaborative learning.

This result was expected and not surprising. The core curriculum minimum academic standard (CCMAS) may have incorporated some new contents that have bearing with the labour market and also the immediate environment. Such content areas may have informed the positive perception of usefulness so found among the lecturers. This corroborates the view of Ishember in Ogunode, Ohibime and Oluwaseun (2023) who noted that intention to make the teaching and learning in the universities responsive and adaptive to societal needs necessitated the introduction of this new curriculum.

The second research question sought to ascertain the perception about the ease of implementation of the CCMAS in the study area. As evident from the result, the lecturers from the two universities agreed that there are enough teaching staff for implementation of the new curriculum. This result was expected and not surprising. The Rivers State government recently engaged in massive recruitment of staff including teaching and non-teaching staff in the two-state government owned universities.This could have informed the respondents that there are enough teaching staff for implementation of the new curriculum.The result showed that

there was a general negative perception about the ease of implementation of the curriculum among lecturers from RSU. However, there was a general positive perception about the ease of implementation among lecturers from IAUOE.

The divergent perception between the lecturers from the two institutions could be just as a result of their peculiar to the different situations in the two schools. For example, possible challenges typically facing the Nigerian higher education could have informed the negative view from lecturers of RSU. For example, in Ogunode, Ohibime and Oluwaseun (2023) noted that funding, and infrastructural facilities among others are typical challenges to effective implementation of the CCMAS. This is also evident from the result of this study as the lecturers disagreed that there are enough infrastructural facilities; adequate instructional materials; enough technologists for implementing the curriculum.

The third research question sought to ascertain the perception about the ease of implementation of the CCMAS in the study area. The result showed that lecturers from Rivers State University had positive attitude towards the CCMAS. On the other hand, for lecturers from Ignatius Ajuru University of Education had somewhat negative attitude towards CCMAS. However, they were confident that the curriculum would be effective in helping students learn science subjects effectively**.** They also liked the way content of the curriculum were structured**.**The negative attitude towards the CCMAS among the lecturers of vocational and technical education from Rivers State university could stern from possible mindset of the challenges that may be impediment to its implementation which according to Ogunode, Ohibime and Oluwaseun (2023) include: inadequate facilities, poor funding and staff training among others.

The first hypothesis sought to ascertain if there was a significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State. The result showed that there was a significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State. This implied that perception on the usefulness of the CCMAS had some connection with lecturers' attitude towards the CCMAS. This further suggests that lecturers who perceived the CCMAS to be useful may tend to have positive attitude towards the programme. On the other hand, lecturers who perceived the CCMAS to be useful may tend to have negative attitude towards the programme.

The second hypothesis sought to ascertain if there was a significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State. The result showed that there was a significant association between the perception of the usefulness and attitude towards the new core curriculum minimum academic standards among vocational and technical education lecturers in universities in Rivers State. This implied that perception on the usefulness of the CCMAS had some connection with lecturers' attitude towards the CCMAS.

Conclusions

Based on the result of the study, it was concluded that the lecturers had positive perception about the usefulness of the core curriculum minimum assessment standard. It was concluded that lecturers had divergent perception about the ease of implementation of the programme. It was further concluded that lecturers had divergent attitude towards the core curriculum minimum assessment standard. Furthermore, it was concluded that while perception of the usefulness had significant association with attitude toward the core curriculum minimum assessment standard, perception of the ease of implementation had no significant

association with attitude among the studied groups.

Recommendations

Based on the results, the following recommendations were made.

1. 1. Internal seminars should be conducted within the universities at school level, faculty level and departmental level to sensitize lecturers of the usefulness of the curriculum.
2. 2. Infrastructural facilities and instructional materials should be adequately provided in universities under the study area to enhance effective implementation of the curriculum.
3. 3. Staff development programmes should be made available and easily accessed to enable lecturers gain competence in the implementation of the curriculum.

REFERENCES

Afful, A. (2018). *What is curriculum? Definition, importance and writing tips*. https://yen.com.gh/119559-what-curriculum-definition-importance-writing-tips.html

Bobbitt, J. F. (1918). *The curriculum*. Boston: Houghton Mifflin.

Dyjur, P., Grant, K., & Kalu, F. (2019). Guide to curriculum review. *Taylor Institute for Teaching and Learning, University of Calgary. https://taylorinstitute.ucalgary. ca/sites/default/files/Curriculum/UofC_ guide_to_curriculum_review_UPDATE D_2019-09*, *202*.

Dyjur, P. & Kalu, F. (2018). *Introduction to curriculum review*. Taylor Institute for Teaching and Learning. Calgary: University of Calgary.

Glenn, S. (2018). *Importance of curriculum teaching*. https://classroom.synonym.com/import ance-curriculum-teaching-6189570.html

Kagara, A. B., & Dauda, I. (2013, October). *Curriculum review in technology education: The role of technology education teachers for a transformed economic*[Paper presentation]. 1st International Conference of School of Technology Education (STE), Federal University of Technology Minna, 2013, Nigeria.http://repository.futminna.edu.ng:8080/jspui/bitstream/123456789/7278/1/Curriculum%20Review%20In%20technology%20Education.pdf

Krug, E. A. (1956). *The secondary school curriculum*. Harper and Brothers.

Marzooghi, R. (2016). Curriculum typology. *International Journal of English Linguistics, 4*(8), 21-28.

Matshe, P. F., & Mahlangu, V. P. (2014). Realigning the curriculum for the societal's needs in the 21st century. *Mediterranean Journal of Social Sciences*, *5*(27), 291-297.

Mondal, N., & Das, A. C. (2021). Overview of curriculum change: a brief discussion. *EPRA International Journal of Multidisciplinary Research (IJMR)*, *7*(3), 260-265. DOI: 10.36713/epra2013

Mulenga, I. M. (2018). Conceptualization and definition of a curriculum. *Journal of Lexicography and Terminology, 2*(2), 21.

Muskin, J. A. (2015). Student learning assessment and the curriculum: Issues and implications. *EducationalTheory*, *58*(1), 63-82. https://doi.org/10.34293/education.v9i3.3983

Nwadiokwu, C. N. (2019). Higher education curriculum in Nigeria: global challenges and prospects in the 21st century. *World Educators Forum: An International Journal, 11* (1), 1-15.

Nwanna, O. C. (2007). *Textbook on educational measurement and evaluation*. Boma Way Publishers.

Ogunode, N. J., Ohibime, E. O., & Oluwaseun, D. J. (2023). Core curriculum and minimum academic standards (CCMAS) for Nigerian Universities: Possible implementation problems and way

forward. *Journal of Education, Ethics and Value*, *2*(1), 24-37.

Ohiare-Udebu, M. F., Ogunode, N. J., Sarafadeen, R. O., &Ayoko, V. O. (2023). Funding of public universities panacea for effective implementation of core curriculum and minimum academic standards (CCMAS) in Nigeria.*International Journal on Integrated Education, 6(*4), 13-21. https://doi.org/10.17605/ijie.v6i4.4220

Ojong, K. A., & Maduka, E. (2013). The role of curriculum and development in teaching and learning: a critical appraisal. *Journal of Literature, Languages and Linguistics, 1*, 94-96.

Pratt, D. (1994). *Curriculum planning: A handbook for professionals*. Harcourt Brace College Publishers.

Sedere, U. M. (2011). Guidelines for curriculum review and development. https://files.eric.ed.gov/fulltext/ED533200.pdf

Tyler, R. W. (1949). *Basic principles of curriculum and instruction*. The University of Cambridge Press.