
EVALUATION OF THE CONTENTS OF RECOMMENDED GOVERNMENT TEXTBOOKS FOR SENIOR SECONDARY SCHOOL STUDENTS IN RIVERS STATE, NIGERIA

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ABSTRACT

The study evaluated three recommended government textbooks for senior secondary two (SS2) students of Rivers State, Nigeria. Simple random sampling technique was used in selecting the textbooks. Two instruments named Government Textbook Study Questions Rating Scale (GTSQRS) and Government Textbook Topical Coverage Checklist (GTTCC) developed by the researcher were used for data collection. The reliability of the GTSQRS and GTTCC for each of the three textbooks was established using Pearson r. The reliability indices of 0.71, 0.86 and 0.84 for New Approach Government (NAG), Modern Government for West (MOG) and New Syllabus Government (NSG) respectively with regards to GTSQRS were determined while 0.74, 0.95 and 0.75 for NAG, MOG and NSG respectively were determined for GTTCC. Two research questions guided the study. Qualitative Approach to Content Evaluation of Science Textbooks (QACEST) developed by Nworgu was applied on the data generated to compute the Indices for Topical/sub-topical Coverage (ITC) for research question one and for Study Question Index (SQI) for research question two. Chi-square (χ^2) was used in testing null hypotheses one and two at .05 alpha level. Among other findings, NAG covered all the topics and sub-topics prescribed in the SS2 government scheme. None of the textbooks provided a balance of higher and lower order questions. Based on the findings, the following recommendations were made: 1) The author(s) of NAG should provide a balance of the two categories of higher order and lower order questions in next edition of the textbook. 2) The author(s) of MOG and NSG should provide in their respective textbooks a balance of the two categories of questions and include in the next edition topics and sub-topics left out in the current edition.

Keywords: Evaluation, Topical coverage, Study questions, Textbooks, Senior Secondary School.

1. INTRODUCTION

Quality teaching and learning in formal education depends to a large extent on the use of appropriate textbooks. Appropriate textbooks serve as useful source of information for teachers and learners (Huhisz, 2003; Stoffels, 2005). They determine not only what to be taught but how a content is communicated. Government is one of the subjects taught at the senior secondary school in Rivers State because of its importance in enabling learners comprehend the need and process of bringing about orderliness in human society. It enables students to learn and imbibe the principles that engender peaceful co-existence between and

among different components of the society. The tenets and principles of government as school subject are replete in textbooks published by many companies. Some of these textbooks are recommended for students by Rivers State Ministry of Education to use for study. For students to cope with the numerous challenges regarding reading and comprehending the contents and skills required in the subject, there is need to provide them with textbooks whose contents are at their comprehension level as this would not only enable them prepare adequately for internal examination but also for external examination. On the basis of this, many researchers are of the view that the adoption of textbooks recommended for use in

teaching and learning should be based on objective evidence obtained through evaluation of the materials. For example, Kayapinar (2009) opined that textbooks used in teaching and learning should be evaluated on a regular basis to ascertain their suitability for the target audience. Similarly, Nworgu(1988a) stated that textbooks not evaluated to ascertain their level of suitability in providing the required information for the target audience are capable of not only misleading the intended audience but, could generate such undesirable and negative effects as disinterest, confusion, apathy, misconception and inhibitions. Paris, Wasik and Turner cited in Koch and Eckstein (1995) also expressed similar opinion that students find it difficult to comprehend textbook materials not suitable for their reading level leading to poor academic achievement.

As a consequence, considerable research attention is being focused on the assessment of the appropriateness of textbooks to be used in the classroom. For example, Ozoemenem (2002) assessed the suitability of agricultural science textbooks for junior secondary school students. On their part, Nworgu and Ibeaja (1985) researched on Physics textbooks for senior secondary school. Perekeme and Agbo (2012) investigated Language textbooks for secondary school students. Jeremiah (2014) investigated the reading level of Government textbooks for public secondary schools. Zinki (2009) assessed the contents of selected novel and plays. In each of these investigations, attention was specifically on determination of the readability level of the textbooks using either Cloze or Fleach procedure. Less attention seems to have been focused on evaluation of the appropriateness of the contents of textbooks recommended for students in secondary schools in Rivers State. From the foregoing, it has become imperative for the researcher to investigate textbooks on government recommended for senior secondary two (SS2) students in Rivers State public schools. Moreover, my experience as a teacher of the subject shows that students who are studying government are finding it difficult to write assignment with their recommended government

textbooks. This is deplorable as it is bound to hamper effective learning.

1. LITERATURE REVIEW

Mehrens and Lehmann (1978) contend that evaluation is the process of delineating, obtaining and providing useful information for judging decision alternatives. Similarly, Gronlund (1985) is of the view that evaluation is a systematic process of collecting, analyzing and interpreting information to determine the extent to which pupils are achieving instructional objectives. From the foregoing, evaluation is the assessment of the worth or value of what is being evaluated.

Generally, there are four classes of evaluation models. They are:

1. Goal oriented models
2. Judgemental models emphasizing intrinsic criteria
3. Judgemental models emphasizing extrinsic criteria, and
4. Decision-facilitation models (Popham, 1975)

The models that guided the present study are the judgemental models emphasizing intrinsic criteria and judgemental models emphasizing extrinsic criteria. In the intrinsic judgemental models, the focus is on the process criteria which Scriven cited in Popham described as relating to judging a textbook on its internal characteristics such as whether the textbook is well illustrated to convey the knowledge and skill intended. Extrinsic criteria on the other hand relates to how well students can comprehend what is being conveyed in the textbook. This is referred to as product criteria.

Over the years, procedures for evaluating textbooks used in the classroom have been developed. For example, Nworgu (1988a) developed and validated a Qualitative Approach to Content Evaluation of Science Textbooks (QACEST). The procedure is used in assessing the suitability of textbook contents on the basis of the extent of topical coverage, adequate provision of

relevant study questions, learning activities, illustrations and chapter summaries. Using QACEST to determine the index of topical coverage of textbook (ITC), the extent of content coverage is measured in terms of the face coverage and depth coverage. According to Nworgu, face coverage is the number of topics covered by the textbook vis-a vis the topics in the in the syllabus. Depth coverage is measured by comparing the number of subtopics covered in the textbook to the number in the syllabus. The formula for calculating the index of topical coverage of textbook (ITC) is:

$$ITC = \frac{T_t + ST_1}{T_s + ST_2}$$

Where T_t is number of topics in the syllabus covered by the textbook

T_s is number of topics in the syllabus

ST_1 is number of subtopics in the syllabus covered by the textbook

ST_2 is number of subtopics in the syllabus

The index of topical coverage of a textbook varies between 0 and 1. The index of 0 implies that none of the topics and subtopics in the syllabus was covered by the textbook. A value of 1 means all the topics and subtopics in the syllabus were covered by the textbook.

Contents of the study questions provided in textbook used in the classroom are also essential in content evaluation of textbook (Nworgu, 1988a). Study questions are questions provided at the end of each topic by the author(s) for students to use in assessing the extent they have mastered the knowledge and skill presented. The self assessment is by providing the correct answers to the study questions provided. Study Question Index (SQI) is the difference between the proportion of the questions which demand the learner to show some thinking and knowledge application and those which require mere recalling of knowledge acquired from the textbook. The formula for measuring Study Question Index is (SQI);

$$SQI = \frac{T - R}{T + R}$$

Where T is Total number of questions requiring students to think and apply knowledge (i.e higher order questions)

R is Number of questions requiring mere horizontal transfer or recalling of knowledge learnt from the textbook (i.e. Lower order question)

Study question index of 0 means a balance of the two categories of questions. A balance of the two categories of question is meant to cater for students of different abilities. A positive (+) value implies that there are lower questions than higher questions.

Textbook evaluation studies using QACEST approach with particular reference to measuring the topical coverage and study questions provided by author(s) have been documented in the literature. For example, Marwa cited in Ozoemenem (2002) used the procedure to evaluate the content of six agricultural science textbooks recommended for senior secondary students of Enugu State, Nigeria in terms of topical coverage and provision of study questions. The population of study which consisted of six recommended agricultural textbooks for senior secondary school students was also used as sample of study. Applying the Qualitative Approach to Content Evaluation of Science Textbooks (QACEST) on the data generated, the result showed that four of the six textbooks made adequate topical coverage of the agricultural science syllabus. However, except in two of the textbooks the author did not provide the required number of study questions for students to use in assessing themselves. The authors provided more knowledge recall questions than knowledge application which at that level was inadequate to equip students with skills to solve problem. In another study, Ozoemenem (2002) evaluated three agricultural science textbooks recommended for public junior secondary school students of Rivers State, Nigeria based on the

topical coverage and provision of study questions. The three agricultural textbooks constituted the population and also the sample of study. Using QACEST to analyze the data revealed that two of the three textbooks covered all the topics prescribed while the study questions provided were inadequate. In a similar evaluation study, Eze in 1993 investigated three major health science textbooks used in all secondary schools and by all the General Certificate Examination O/L private candidates in Anambra State of Nigeria. The three textbooks constituted the sample of study. A researcher-developed questionnaire was used in collecting data. Flesch's readability formula and Nworgu's QACEST were respectively applied in analyzing the readability score and content indices of Topical Coverage (ITC) and Study Question Index (SQI) of the textbooks. The results of data analysis for the ITC for the three health science textbooks showed that 0.94, 0.54 and 0.54 for SPS, NPA and GAG respected were recorded while 0.22, 0.00 and 0.30 for SQI were respectively recorded for each of the three textbooks. He concluded that NPA did not provided study questions, SPA provided more higher order questions than lower order questions while more lower questions were provided than higher order questions in GAG.

Despite the application of QACEST to evaluate textbooks used by students in public secondary schools in Nigeria, there seems to be none on recommended Government textbooks for senior secondary two students in Rivers State. Furthermore, my experience over the years as senior secondary students two government teacher shows that students find it difficult to comprehend and effectively use the recommended textbooks for assignment based on the study questions provided in the textbooks. This situation is deplorable as it is bound to hamper effective and quality learning and preparation of the students for both internal and external examinations. Could this problem be explained by the non-coverage of the topics prescribed in the syllabus and inadequate provision of study questions that would cater for students of different abilities? Providing answer to this poser necessitated the need to conduct the present

evaluation study on the contents of the three recommended government textbooks.

It is in the light of the foregoing that the present study sought to investigate the content of recommended government textbooks for senior secondary students of Rivers State, Nigeria. To achieve the objective, the study addressed the following questions:

- 1 To what extent does each of the three recommended government textbooks for SS2 cover the topics in the scheme?
- 2 How do the study questions provided in each of the three recommended government textbooks adequate to cater for students of different abilities?

The following null hypotheses were tested at .05 significant level:

- 1 There are no significant differences among the topics covered in the three recommended textbooks.
- 2 There are no significant differences among the frequencies of higher and lower order questions provided in the three recommended textbooks

3.METHOD OF STUDY

The study adopted evaluation research design. Education evaluation research design deals with making decisions on the value or worth of educational materials, methods and programmes based on empirical data. It involves a systematic process of collecting pertinent data on the basis of which decision could be made about individual programme, material or method. Simple random sampling was employed to select three of the four government textbooks recommended for senior secondary two students (SS2) of Rivers State, Nigeria as at 2016/2017 academic session (see appendix 1 for the recommended textbooks).

3.1 Measures

The instruments used for data collection were checklist named Government Textbook Topical Coverage Checklist (GTTCC) and a rating scale

named Government Textbook Study Question Rating Scale (GTSQRS). The two instruments were developed by the researcher. The procedure used in developing GTTCC was first analyze the topics and subtopics covered in each of the textbooks and those prescribed in SS2 government scheme. The two lists were then prepared as a checklist, typewritten and given to two experts in curriculum design to check (✓) the level of topic/subtopic coverage as prescribed in the scheme. Similarly, GTSQRS was developed by listing the study questions provided at the end of each chapter in each of the three textbooks or a sample of one-third (1/3) where the questions are more than ten. The study questions were then prepared and grouped as category one (memory recall questions) and category two (knowledge application questions). Finally, the questions were typewritten and given to two experts in measurement and evaluation to rate. The instruments were content validated by measurement and evaluation experts.

The reliability of GTTCC and GTSQRS for each of the three government textbooks was determined using Pearson r. For GTTCC, the reliability coefficients for NAG, MOG and NSG were 0.74, 0.95 and 0.75 respectively while 0.71, 0.86 and 0.84 for NAG, MOG and NSG respectively were determined for GTSQRS.

3.2 Procedures

Copies of the two instruments were personally given to each of the two experts in measurement and evaluation and curriculum design. The checked and rated copies were retrieved from them a day after they were given. Nworgu(1988a) QACEST was then applied on the data generated to compute the topical/subtopical coverage index of topical coverage (ITC) and Study Question Index (SQI) for research questions one and two respectively. Chi-square was used in testing null hypotheses one and two

4. RESULTS

Research question one: To what extent does each of the three recommended government textbooks

cover the topics and subtopics in SS2 scheme. To answer this question, Nworgu (1988a) QACEST was applied to determine the level of topic/subtopic coverage (ITC) in the three textbooks under investigation.

Table 1: Results of the indices of topic/subtopic coverage of NAG, MOG and NSG.

Name of book	No. of topics in the scheme covered by the textbook	No. of topics in the scheme	No. of sub-topics in the scheme covered by the text	Number of sub-topics in the scheme	ITC
	Tt	Ts	STt	STs	
NAG	29	29	46	46	1.00
MOG	28	29	39	46	0.89
NSG	27	29	40	46	0.89

As Table 1 indicated, the number of topics and subtopics covered by New Approach Government (NAG) were 29 and 46 respectively. Applying Nworgu (1988a) QACEST, the Index Topical Coverage (ITC) was 1.00. This means that all the topics and subtopics were covered in NAG. For Modern Government for West Africa (MOG), the number of topics and subtopics as indicated in Table 1 were 28 and 39 respectively. Applying QACEST on the data, the Index Topical Coverage (ITC) for MOG was 0.89. This suggests that most of the topics and subtopics were covered in the textbook. As indicated in Table 1, New Syllabus Government (NSG) textbook had 27 for topics and 46 for subtopics covered. Applying QACEST, the Index Topical Coverage (ITC) was 0.89, implying that most of the topics and subtopics were also covered.

Research question two: To what extent are the study questions provided in each of the government textbooks adequate to cater for different learners. To answer this question, Nworgu (1988a) QACEST was applied on the data to

determine the study question indices for the government textbooks.

Table 2: Results of Study Question Indices (SQI) for NAG, MOG and NSG textbooks

Name of book	Study questions provided and their categories	
New Approach Government (NAG)	Number of higher order questions (question requiring thinking and application of knowledge)	63
	Number of lower order questions (questions requiring mere recall)	11
	Total	74
	SQI	+0.70
Modern Government for West Africa (MOG)	Number of higher order questions (question requiring thinking and application of knowledge)	20
	Number of lower order questions (questions requiring mere recall)	13
	Total	33
	SQI	+0.21

(higher order question) and apply knowledge while 11 of the questions require recall of knowledge (lower order question). Applying Nworgu’s QACEST, the Study Question Index (SQI) was +0.70. The positive sign on the index implies that the authors provided more of higher order than lower order questions. As shown in Table 2, of a total of 33 study questions provided by the author of Modern Government (MOG), 20 of the study questions require thinking (i.e higher order questions) while 13 were provided for recall of knowledge. Applying Nworgu’s QACEST, the Study Question Index (SQI) is +0.22, suggesting that there were higher order questions than lower order questions. For the New Syllabus Government for SS2(NSG), Table 2 showed that 60 study questions were provided out of which 46 require students to think (ie higher order questions), the remaining 14 study questions provided in the textbook require horizontal transfer(recall) knowledge. Applying Nworgu’s QACEST, the index of +0.53 was calculated as the Study Question Index (SQI). The positive sign (+) suggests that the author provided more higher order questions that would make students to think than lower order questions that require horizontal transfer (recall) of knowledge.

Hypothesis one: There are no significant differences in the number of topics and subtopics covered in each of three textbooks. ($p < .05$).

Table 2 indicated that the authors of New Approach Government (NAG) provided a total of 74 study questions, 63 of which require students to think

To test this hypothesis, Chi-square (χ^2) test was applied

Table 3: Summary of Chi-square (χ^2) test of the topics covered in NAG, MOG and NSG textbooks

Textbook	Frequency of topics and subtopics covered in each of the three textbooks		N	Cal χ^2	df	Crit χ^2
	Topic	Subtopic				
	Ob/Exp	Ob/Exp				
NAG	75 (69.7)	00 (5.3)	75			

MOG	67 (69.7)	08 (5.3)	75	8.663	2	5.991 *
NSG	67 (69.7)	08 (5.3)	75			
Total	209	16	225			

5.991. The null hypothesis of no significance difference in the topics and subtopics covered in the three textbooks was therefore rejected.

*significance at .05 probability level

$$\chi^2_{cal} = 8.663$$

$$\chi^2_{tab} = \chi^2_{(2, 0.05)} = 5.991$$

$$df = (3-1)(2-1) = 2$$

A look at Table 3 showed that the calculated χ^2 value of 8.663 was greater than the critical of χ^2

Hypothesis two: There is no significant difference between the frequencies of higher order and lower order questions provided in each of the three textbooks.

To test this hypothesis Chi-square (χ^2) test was applied

Table 4: Summary of Chi-square (χ^2) test on the frequencies of higher order and lower order study questions provided in New Approach Government (NAG), Modern Government for West Africa (MOG) and New Syllabus Government (NSG).

Textbook	Categories of study questions	O	E	O - E	(O-E) ²	$\frac{(O-E)^2}{E}$	χ^2_{cal}	df	χ^2_{crit}
NAG	HOQ	62	37	25	625	16.89	33.78 *	1	3.84 *
	LOQ	12	37	-25	625	16.89			
Total		74	74	00					
MOG	HOQ	20	16.5	3.5	12.25	0.742	1.484 *	1	3.84 *
	LOQ	13	16.5	-35	12.25	0.742			
Total		33	33.0	00					
NSG	HOQ	46	30	16	225	8.53	17.06 *	1	3.84 *
	LOQ	14	30	-16	225	8.53			
Total		60	60	00		17.06			

3.84 for NAG textbook. Thus, the null hypothesis of no significant difference between the frequencies of higher order questions and lower order provided in NAG was rejected.

Table 4 revealed that the calculated χ^2 value of 33.78 was greater than the χ^2 critical value of

Regarding MOG textbook, Table 4 revealed that the calculated χ^2 value of 1.484 was less than the critical value of 3.84. The null hypothesis of no significant difference between the frequencies of higher order and lower order questions was therefore retained. This suggests that equal number of the two types of questions were provided as required. For the NSG textbook, Table 4 indicated that the calculated χ^2 value of 17.06 was greater than the critical value of 3.84, hence the hypothesis of no significant difference in the proportions of higher order and lower order questions provided by the author in the textbook significantly differed.

5. DISCUSSION

The index value of a textbook that covers prescribed topics and subtopics vary between 0 and 1. If prescribed topics and subtopics are not covered, the expected Index Topical coverage (ITC) value is 0 or 1 if all the topics and subtopics are covered. For the Study Question Index (SQI), index value of 0 is an indication of a balance of higher order questions and lower order questions. A positive (+) sign on a value is an indication that there are more higher order (knowledge application) questions than lower order (recall or memory) questions while a negative sign (-) means there are more lower order questions than higher order questions.

The Index of Topical Coverage (ITC) of 1.00 for NAG suggests that the authors of the textbook covered the prescribed topics and subtopics for senior secondary two students (SS2). For MOG and NSG textbooks, their respective topical coverage indices however showed that all the topics and subtopics were not covered as prescribed. Regarding the Study Question Index (SQI) for each of the three textbooks, their respective index of +0.70 for NAG, +0.20 for MOG and +0.53 for NSG suggests that the author(s) provided more higher order questions than lower order questions for the students. Similar results of textbooks not covering the prescribed topics and subtopics and not providing a balance of higher order and

lower order questions were found in the textbook evaluation literature reviewed. In the three agricultural science textbooks recommended for junior secondary students of Rivers State public schools investigated by Ozoemenem (2002), the findings showed that the topics and subtopics as prescribed were covered in two of the three textbooks while the study questions provided in the three textbooks were inadequate. Ezeh (1993) also found similar result in the evaluation study he conducted in which the results of data analysis for Index topical Coverage (ITC) for three health science textbooks recommended for senior secondary schools showed that 0.94, 0.54 and 0.54 for SPS, NPA and GAG were respectively recorded and 0.22, 0.00 and 0.30 for Study Question Index (SQI) were respectively recorded for each of the three textbooks. He concluded that NPA did not provide study questions, SPS provided higher order questions than lower order questions, while more lower order questions than higher order questions were provided in GAG. The implication of this is that in terms of responding correctly to the higher order study questions provided, students who are above average in terms of intellectual ability are more likely to be encouraged to further use the textbooks while students who are below average are likely to be discouraged from further use of the textbooks on failing to provide the correct answers to the questions. This is likely to affect the use of the books and by extension their internal and external performance

Appropriate and suitable textbooks in terms of provision of relevant study questions have study question index of 0 indicating a balance in number of higher order and lower order questions to cater for both low and high ability students (Nworgu, 1988). The reason for the non-coverage of all the topics and subtopics in MOG and NSG was not directly investigated. However, a hypothetical explanation that may suffice is that the author(s)' inadequate knowledge of the details of topics and subtopics prescribed for senior secondary two (SS2) may have accounted for it.

The result of Chi-square (χ^2) test relating to null hypothesis 1 was significant at .05 level at 2 degrees of freedom. This means that the three textbooks significantly differed with respect to the number of topics and subtopics covered, hence the hypothesis was rejected. Regarding hypothesis 2 of no significant difference in the two categories of study questions provided in each of the three textbooks, NAG and NSG were rejected respectively.

6. CONCLUSION

The findings of this evaluation study revealed that of the three recommended textbooks, only NAG covered the prescribed topics and subtopics. However, none of the textbooks provided a balance of the two categories of higher order and lower order study questions to cater for all categories of students.

7. RECOMMENDATION

It is recommended that the Rivers State Ministry of Education should employ the services of experts in measurement and evaluation to evaluate the contents of recommended textbooks with regards to topical and subtopical coverage and the relevant and quality of study questions provided by author(s). It also recommended that the authors of the three textbooks should review them in the next edition in the following areas:

NAG – balance the two categories of higher order and lower order questions

MOG – balance the two categories of study questions and include topics and subtopics not included.

NSG – balance the two categories of study questions and include topics and subtopics not reflected.

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