



QUALITY ASSURANCE MECHANISMS IN CONSTRUCTING TEACHER-MADE TEST ITEMS IN THE TEACHER TRAINING COLLEGES, CAMEROON

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Abstract

The shift in paradigm from standardized tests to much more predominant teacher-made tests in the Teacher Training Colleges (TTCs) of Cameroon, especially against the backdrop of the progressive transformation of these institutions to align with the country's reality and goals of sustainable development, presupposes the construction and use of quality teacher-made test items that accurately capture students' acquisition of pedagogical content knowledge. This, apparently, is not often the case as teachers' test items have been found wanting with regard to quality. Thereby, raising concerns about teachers' adherence to quality assurance mechanisms inherent in their test construction processes, and on which basis, many critical decisions are often taken. Based on this premise, this study sought to assess quality assurance mechanisms in test item construction and their influence on the effectiveness of teacher-made tests in the TTCs. The study adopted the survey research design and conveniently selected five out of the seven government TTCs of the North West Region of Cameroon. Using a disproportionate stratified random sampling method, a sample of 134 teachers was selected out of a population of 207. A 12-item questionnaire was used for data collection. A reliability coefficient of 0.84 was determined using Cronbach Alpha and the content validity index was assessed to be 0.87. Data collected was analysed using descriptive statistics, one-sample t-test, and multiple regression analysis. The findings revealed ($P < 0.01$) that teachers of the TTCs do not significantly adhere to quality assurance mechanisms in the construction of their test items. The findings further refuted the fact that the qualification and teaching experience of teachers were perfect predictors of quality assurance mechanisms in constructing teacher-made test items in the TTCs. On the grounds of the above findings, and to improve adherence to quality assurance mechanisms in constructing teacher-made test items, it was recommended that the

Ministry of Secondary Education must make a conscious and sustained effort in the training and retraining of teachers of the TTCs in the development of quality test items to attain these enviable goals.

Keywords: *Quality assurance mechanisms, Teacher-made tests, Test construction processes, Sustainable development goals, Teacher Training Colleges.*

Introduction

Teacher Training Colleges (TTCs) of Cameroon are institutions earmarked for the training of teachers for the Basic Education sector (Nursery and Primary schools). This implies that the arduous task and responsibility of educating “young Cameroonians to successfully face life’s challenges and to provide the foundation of lifelong learning” (Titanji, 2017) rests squarely on the shoulders of the products churned out of these institutions. Not surprisingly, the government of Cameroon has embarked on a vision to progressively transform these institutions to respond to the country’s realities and needs for sustainable development (Cameroon Vision 2035). This vision presupposes equipping teachers at the primary levels of education with the pedagogical content knowledge to enable them to successfully perform assigned responsibilities related to the attainment of these goals. This vision, therefore, could become reality if the teachers of these institutions were to use quality assessment instruments that accurately capture students’ knowledge, skills, and competencies during training. According to Tchombe (n.d.) this will enable them to effectively take their places in the new social order and market economy.

Accordingly, researchers (Nenty & Fetogang, 2014; Aduloju & Agi, 2015; Afemikhe, 2015) attest without ambiguity that effective assessment constitutes the bedrock of effective teaching. This eloquently underscores the fact that the teaching-learning process in general will be ineffective, if not meaningless, in the absence of effective assessment instruments to measure learners’ true knowledge, skills, and abilities in whatever has been taught and learnt.

There seems to be no argument to the fact that testing of learning outcomes constitutes one of the most challenging and daunting tasks of the classroom teacher. Aduloju and Agi (2015) argue that a typical teacher can spend more than one-third of his class time engaging in one form of assessment or another. Also, Yussuf (2014) submits that constructing a valid and reliable test instrument for the classroom, which accurately captures learners’ knowledge and abilities, is a time-consuming process. This is vividly indicative of the fact that the art of constructing quality teacher-made test items is a painstaking process that must not be rushed over. Therefore, when teachers hurriedly construct test items and instantly administer them, it becomes obvious they lack the necessary quality assurance mechanisms to enable them to attain their intended objectives. This undoubtedly presupposes teachers having a mastery of the art of test item development as well as being conversant with quality assurance mechanisms hinging on the construction of these assessment instruments.

In this regard, quality assurance mechanisms in test construction inadvertently imply the ability of classroom teachers to scrupulously and systematically respect the standard procedures inherent in the test item development process. The goal of the quality assurance mechanism in test construction, therefore, is to present to students' high-quality items and tests that will result in accurate and reliable assessment of their performance. This inadvertently underscores the indispensability of teachers' knowledge and skills in constructing valid and reliable test items for classroom assessment.

From this perspective, the adherence to quality assurance mechanisms in the construction of teacher-made test items undoubtedly constitutes one of the teachers' most daunting and challenging tasks in the Teacher Training Colleges (TTCs) of Cameroon. Especially, within the context of a shift in paradigm from standardized tests to much more predominant teacher-made tests in these institutions, as evidenced by the fact that scores obtained from such tests constitute a significant coefficient of the end-of-course Teacher Grade One Certificate Exam (CAPIEMP) in Cameroon. (Decision No. 690/MINSEC/SEESSEN/IGE/IP-DEN/DECC of 03 December 2013). As a matter of fact, the aggregate scores obtained by students from these tests are graded as coefficient 2 in the end-of-course Teacher Grade One certificate exam. Worthy of note also is the fact that the Ministry of Secondary Education further sets an average score of 7/20 as a minimum score expected of students in all these tests. This implies that students having an average score of below 7/20 on all these tests are automatically eliminated or are considered as having failed before they even sit for the final certificate exam. In this vein, quality assurance mechanisms in test construction demands of teachers to scrupulously comply and respect the standard procedures embedded in the test construction processes. These processes are many and varied, including determining the purpose of testing, review of content specification and instructional objectives, selecting the most appropriate test format, developing a test blueprint, item writing, item review, trial testing and item analysis, item selection and test assembly, and item banking. (Olatunji & Onofeghara, 2008; Akoko, 2015; Anene & Ndubuisi, 2015; Aduloju and Agi, 2015). This implies that the thorough mastery and respect of the systematic stages embedded in the process of test construction, from test purposes to test item banking, is the only option at the disposal of teachers to construct items for their test that are valid and reliable.

When it comes to teaching and learning in the TTCs in Cameroon, the importance and relevance attached to the teacher-made tests cannot be overemphasized. Buttressing this logic, Afemikhe (2015) submits that the teacher-made test is instrumental in capturing a broad range of outcomes even above those measured by other high-stakes examinations for certification. Nenty and Fetogang (2014) on their part contend that teaching that focuses on high-stakes examinations only most often tends to narrow the curriculum content only to those areas in which previous examination items have been developed. To them, this phenomenon "distorts the curriculum, hijacks education intention or cheats the society of her intentions". Teacher-made tests have also been touted as "a move towards reducing the over-reliance and over-dependence on one-shot public examination for certification." (Afemikhe, 2015). In this regard, it becomes disturbing to discern that teachers' test construction processes remain flawed by many

irregularities and still continue to remain the Achilles heel of many teachers, especially in the TTCs. For instance, it is a common phenomenon to see some teachers rush to construct test items at the last minute before they are to be administered. This makes one wonder when all the steps outlined above were respected. No doubt, Mbah (2018) notes that tests constructed at the last minute are often “too short and inadequately sample the whole area of understanding and abilities, and yet the results are quite often quoted as if they are a magical guide to the future of a particular child.” Again, when test items are constructed at the last minute, most often only trivial details are tested, and understanding, reasoning, creativity, and practical application and abilities of the test takers are neglected. This apparent lack of time to painstakingly construct valid and reliable test items while taking into consideration all the necessary quality assurance mechanisms undoubtedly defeat the very purpose of testing. In this respect, Adeola and Fajonyimi (1999), in Aduloju and Agi (2015), state that most teacher-made tests contain ambiguous and misleading questions, which may be some of the reasons why some of the students fail these tests. This fact is further corroborated in studies that indicate that 13% of students who fail in class is due to faulty questions set by teachers. (Rivera, 2005).

Nonetheless, the accomplishment of the idealistic objectives of the teacher-made tests in the TTCs of Cameroon demands teachers' strict respect of quality assurance mechanisms inherent in the construction of their test items. It therefore goes without saying that the classroom teacher is and remains the kingpin actor in the process of constructing these test items. However, surrendering the entire process to the whims and caprices of individual classroom teachers who, in most cases, lack the requisite knowledge and competencies in test item development, as is apparently the case, is problematic. Consequently, efforts have to be harnessed to guarantee that these teachers comply with and respect the quality assurance mechanisms embedded in the construction of teacher-made test items. This, obviously, will enable them to better assess students' true acquisition of pedagogical content knowledge, indispensable in the attainment of Cameroon's goals of sustainable development at the primary education level.

Statement of the Problem

The shift in paradigm from standardized tests to much more predominant teacher-made tests in the Teacher Training Colleges (TTCs) of Cameroon presupposes the use of quality teacher-made test items that accurately capture students' acquisition of pedagogical content knowledge, critical in Cameroon's attainment of the goals of sustainable development in the Basic Education sector. Unfortunately, this is not a true picture of what actually prevails, as the construction of quality teacher-made test items remains an issue of great concern in these institutions.

As observed, the quality of teachers-made test items in the TTCs during the period of class assessment, in most cases, continues to be flawed by many irregularities. Most of the time, some of the test items are characterized by ambiguous, imperfectly worded items and testing only trivial details. Similarly, it is not uncommon for teachers to set test items to be administered instantly. As a consequence, such test items most often hardly capture students' true abilities, reasoning, creativity, and practical application of concepts. This

state of affairs undoubtedly defeats the purpose and relevance of the teacher-made tests in these institutions and has raised concerns about teachers' knowledge and respect for the quality control mechanisms embedded in the process of test construction, and consequently, the reliability and validity of the scores obtained from such tests.

From this perspective, studies (Yusuf, 2014; Aduloju & Agi, 2015) have identified poor-quality test items set by teachers as one of the causes of learners' poor performance in tests. Rivera (2005) further indicates that up to 13% of students who fail in class are caused by faulty questions set by teachers. In the same vein, researchers (Kolawole, 2006; Njoke, 2006; Ugwa, 2008; Ariyo & Lemut, 2015) in (Aduloju & Agi, 2015) attribute this state of affairs to teachers' lack of knowledge and incompetence in item construction, analysis, and evaluation of learners at each stage of learning. Thus, teachers' non-respect of the quality assurance mechanisms inherent in their testing practices ultimately impacts students' performance and, by extension, frustrates the government's intentions to revitalize these institutions and to make its graduates more competitive in the job market.

Therefore, to achieve the government's vision of transforming these institutions in line with the country's realities and needs for sustainable development (Report of the Sector-wide Approach to Education, 2006), it is incumbent on the teachers of these institutions to demonstrate knowledge of test construction skills as evidenced in the respect of quality assurance mechanisms embedded in such test items. This study, therefore, is conceived from the need to assess the extent of teachers' adherence to quality assurance mechanisms in the test construction process and its possible effects on the effectiveness of the teacher-made tests in the TTCs of Cameroon.

Research Questions

The following research questions guided this study.

1. How well do teachers of the TTCs adhere to quality assurance mechanisms in the construction of teacher-made tests?
2. To what extent do quality assurance mechanisms in test construction influence the effectiveness of the teacher-made tests in the TTCs?
3. How well do teaching experience and the qualifications of teachers predict adherence to quality assurance mechanisms in teacher-made tests in the TTCs?

Methodology

This study used a survey research design to collect data from the respondents. The target population of this study consisted of teachers of all the government teacher training colleges (TTCs) of the North West Region of Cameroon. However, due to the tense socio-political atmosphere reigning in the region at the time of carrying out this study, only five (5) out of the seven (7) TTCs were accessible. Thus, the convenience sampling technique was adopted to select these 5 TTCs. Using a disproportionate stratified random sampling method, a sample of 134 teachers was selected out of a population of 207.

A questionnaire for teachers on quality assurance mechanisms in teacher-made tests in the TTCs was used for data collection. The questionnaire was divided into sections

A and B. Section A consisted of background Information about the respondents. Section B consisted of a list of 12 statements (items) used to collect information on the variables of the study. Each item was structured along a 4-point Likert scale. Strongly Disagree (SD), Somewhat Disagree (SWD), Somewhat Agree (SWA), Strongly Agree (SA), with a four-point (4) scoring system. The validity of the questionnaire was ensured by calculating the content validity index, which stood at 0.87, thus validating the instrument. Equally, to establish the reliability of the instrument, two internal consistency estimates of reliability (split-half coefficient and coefficient alpha) were computed using SPSS. The calculated reliability indices for coefficient alpha and split-half coefficient were the same, 0.84, indicating that the instrument was very reliable. The Direct Delivery Technique (D.D.T) was used in the administration of the instrument.

Inferential statistical test methods (one-sample t-test and multiple regression analysis) were employed to analyse the data collected. The statistical analysis was done using SPSS version 20.0.

Results

Research Question 1:

How well do teachers of the TTCs respect quality assurance mechanisms in the construction of teacher-made tests?

A one-sample t-test analysis was conducted to test whether teachers of the TTCs consider quality assurance mechanisms in the construction of teacher-made tests.

Table 3: One-Sample Test for research question one

Variable	Test Value = 12								
	N	Mean	Std deviation	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Consideration of quality assurance mechanisms	134	16.66	2.60	74.492	133	.000	16.664	16.22	17.11

Table 3 reveals that with alpha at 0.05, the mean (16.66) for the one-sample t-test was significantly different from the test value of 12 with $t = 74.49$, $df = 133$, $p = .000$ ($p < 0.05$) and the 95% confidence interval ranging from 28.22 (i.e., $12 + 16.22$) to 29.11 (i.e., $12 + 17.11$). The results from this table, therefore, attest overwhelmingly to the fact that the teachers of the TTCs do not consider the necessary quality assurance mechanisms in the test construction processes of the teacher-made tests.

Research Question Two

To what extent do quality control mechanisms in test construction influence the effectiveness of the teacher-made tests in the TTCs?

A one-sample t-test analysis on the extent to which quality control mechanisms in test construction influence the effectiveness of the teacher-made tests in the TTCs.

Table 4: One-Sample Test for research question 2

variable	N	Mean	Std deviation	Test Value = 12		
				t	df	Sig. (2-tailed)
Quality assurance mechanisms on test effectiveness	134	18.10	2.51	83.470	133	.000

Table 4 shows that with alpha at 0.05, the mean (18.10) for the one-sample t-test was significantly different from the test value of 12 with $t = 83.47$, $df = 133$, $p = .000$ ($p < 0.05$) and the 95% confidence interval ranging from 29.67 (i.e., $12 + 17.67$) to 30.53 (i.e., $12 + 18.53$). This means that the teachers of the TTCs acknowledged the fact that quality control mechanisms in test construction enhance the effectiveness of the teacher-made tests.

Research Question 3

How well do the qualifications and teaching experience of teachers predict the respect of quality assurance mechanisms in teacher-made tests in the TTCs?

The verification of this research question was done using two multiple regression analysis. With teaching experience of teachers of the TTCs as set 1 and teachers' qualification as set 2, and quality assurance mechanisms as the dependent or criterion variable.

Table 5: showing multiple regression analysis for research question 3

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df 1	df2	Sig. F Change
1 Teaching experience	.194 ^a	.038	.030	2.550	.038	5.178	1	132	.024
2 teachers' qualifications	.251 ^b	.063	.049	2.526	.025	3.509	1	131	.063

Two Multiple Regression Analyses were conducted to predict quality assurance mechanisms in teacher-made tests from teaching experience and the qualifications of teachers of the TTCs. The results thus present an evaluation of how quality assurance mechanisms in teacher-made tests are predicted by the teaching experience of teachers

of the TTCs (set 1), and how well the qualification of teachers of the TTCs (set 2) predicts quality assurance mechanisms in teacher-made tests.

The analysis of the first set of predictors (teaching experience) accounted for an insignificant variability of quality assurance mechanisms in teacher-made tests, $R^2 = 0.038$, $F(1, 132) = 5.19$, $p > 0.05$. Indicating that teachers' teaching experience is not necessarily a predictor of quality assurance mechanisms in teacher-made tests, as previously popularly assumed.

A second analysis was conducted to evaluate whether the second set of predictors (teachers' qualifications) accounted for a significant proportion of the variability of quality assurance mechanisms in teacher-made tests after controlling for the effect of teachers' teaching experience. As observed, teachers' qualifications also accounted for an insignificant proportion of the variability of quality assurance mechanisms in teacher-made tests after controlling for the effect of teaching experience, $R^2 \text{ change} = 0.063$, $F(1, 131) = 3.51$, $p > 0.05$. Indicating that teachers' qualifications equally do not necessarily predict teachers' consideration of quality assurance mechanisms in the teacher-made tests.

Discussion

The findings from research question one of this study revealed overwhelmingly that teachers of the TTCs hardly consider quality assurance mechanisms in the construction of teacher-made tests. This result supports Aduloju and Agi (2015), who argue that most teachers lack the necessary competencies and skills in test construction and may be using poorly constructed test items to measure students' achievements in various school subjects. In addition, Tanyi and Wirngo (2015) contend that assessment tools employed in the educational system in Cameroon are characterized by items that are poorly constructed, with validity and reliability issues not addressed.

Research question two portrays that quality assurance mechanisms in test construction significantly enhance the effectiveness of the teacher-made test items. These findings tie with the viewpoint of Tanyi and Wirngo (2015), who hold that the ability for teachers to engage in high-quality assessment is a sine qua non for effective assessment, which requires mastering the professional knowledge and skills involved in the field of assessment and evaluation. Also, Ohuche and Akeju in Nworgu (2017) believe that the quality of items that make up a test determines the quality of the test as a whole.

Research question three sought to know whether adherence to quality assurance mechanisms in test construction could be predicted by the teaching experience and qualification of teachers of the TTCs. The findings showed that they accounted for an insignificant variability of quality assurance mechanisms in test construction. Thus, rejecting the fact that the qualification and teaching experience of teachers was a perfect predictor of adherence to quality assurance mechanisms in teacher-made tests in the TTCs. Thereby indicating that teachers' professional qualification and longevity in service were not necessarily associated with the effectiveness of the tests they set, as is apparently assumed. This discovery, however, does not seem to tie with the opinion of Mbah (2018), who asserts that developing an effective teacher-made test is not a skill that can be learned

from textbooks only, but rather one that takes time and practice. According to him, therefore, the key to the effectiveness of the teacher-made tests comprises not only technical know-how on the part of the teachers but equally experience. In addition, Ashworth (2003) seems to agree with him on this point when he contends that it is often not until a teacher has taught for several years that he comes to realize the pertinence of the teacher-made test as far as classroom teaching is concerned. Thereby, reemphasizing the importance of experience as far as teachers' testing practices are concerned.

Nonetheless, Bielher and Snowman (1997), in Aduloju and Agi (2015), to an extent agree with the findings of this study when they believe that only teachers with more training in measurement and assessment adopt appropriate assessment practices than teachers with less training. The implication here is vivid, meaning that what matters in constructing quality test items is not necessarily an issue of qualification or teaching experience of the teacher, as is commonly believed, but what makes the difference is having more training in measurement and evaluation. In this perspective, Nenty and Lusweti (2014), in Aduloju and Agi (2015) prescribe that teachers should be assessment literate, implying having good and practical knowledge of testing procedures.

Conclusion and Recommendation

The findings of this study have proven without doubt that most teachers of the TTCs of the North West region do not adhere to quality assurance mechanisms in the construction of test items. From this research, it is also evident that adherence to quality assurance mechanisms in test construction significantly enhances the effectiveness of teacher-made tests in the TTCs in terms of the validity and reliability of the test items. The study equally rejected the popularly assumed view that the qualification and teaching experience of teachers was a perfect predictor of adherence to quality assurance mechanisms in teacher-made tests in the TTCs. Based on these findings and to improve upon teachers' adherence to quality assurance mechanisms in constructing teacher-made test items in the TTCs, on which basis certain crucial decisions are often taken, the following recommendations were made:

1. There must be a conscious and sustained effort in the training and retraining of teachers of the TTCs in the development and use of test items. This will increase their knowledge and adherence to quality assurance mechanisms in test item construction and evaluation.
2. Regular workshops and seminars to provide capacity building support and upgrade teachers' skills and competences in test development should be encouraged.
3. More openings for the continuous professional development of teachers in measurement and evaluation should be made available.
4. Also, it is of paramount importance that the review of teachers' test items should be made mandatory at the level of the respective departments to ensure adherence to standard procedures of test construction.

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