American International Journal of Research in Humanities, Arts and Social Sciences

Available online at http://www.iasir.net

ISSN (Print): 2328-3734, ISSN (Online): 2328-3696, ISSN (CD-ROM): 2328-3688

AIJRHASS is a refereed, indexed, peer-reviewed, multidisciplinary and open access journal published by International Association of Scientific Innovation and Research (IASIR), USA

(An Association Unifying the Sciences, Engineering, and Applied Research)

Evaluating a Curriculum Using the Same Style and Strategy across Years: Lessons Gained from Tanzania

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Abstract: *Policy and practice in relation to curriculum evaluation systems are under review in many countries. Previous studies have indicated that, public examination system used in many countries, especially those using pen and paper to evaluate students' mastery of the curriculum objectives can provide us with illusions regarding how best a curriculum is implemented at school. In this study, Public examination conducted by the National Examination Council of Tanzania were studied to see whether, the type and structure of exams, and coverage of such exams do not affect teachers' curriculum implementation practice. Through content analysis of Grade twelve (form four) Public examinations offered since the year 2010 to 2014; and following an interviewing with students in grade twelve, results showed that: "*what is measured*" and "*how it is consistently measured*" through National summative examinations in Tanzania affect what is taught, what is assessed, and to a large extent, what is valued in the schooling process during curriculum implementation.*

Key world: *Curriculum, Curriculum evaluation, Public examination, Tanzania.*

I. Introduction

Relationship between summative and formative assessments has attracted scholar's debate since long with the perception that the former influence the later. As the interaction between curriculum development and examination systems appeared to become complex, it seemed meaningful to examine the matter. Grounded on this point of view, this study attempted to study the influence of National summative examinations on teachers' curriculum implementation practices.

Defining curriculum, and understanding curriculum development process is perhaps most difficult exercise, for the term curriculum and its associated development processes have been approached differently ever since the field took form. Many books have been written defining the curriculum in narrower or broader terms. On the one hand, curriculum is defined broadly when it provides us with what "ought" to happen. In this regard, such definitions more often than not are prescriptive, taking the form of a plan, or some kind of expert-opinion about what is expected to take place in the course of study. An example of such definition is that provided by Bobbit (1918), who defined a curriculum as the entire range of experiences, both directed and undirected, concerned in unfolding the abilities of an individual. On the other hand, narrow curriculum definitions use descriptive terms. As such, such definitions go beyond the prescriptive terms as they force thought about the curriculum with regard to how things are in real in practice. Tanner and Tanner (1995) and Beigi, Keramati and Ahmadi (2011) are among scholars whose definition falls in this line. According to them, curriculum refers to a program of all experiences which the learner encounters under the direction of a school. From the above clarification, a curriculum can be conceptualized as a set of ideas, knowledge and skills that are considered useful for the society to develop and gain control of the on-going socio-economic challenges. This conceptualization shows that, regardless of a definition one will opt, curriculum is a property of the public and its development is both a technical and social process demanding a public consensus. Moreover, such definition shows that a curriculum is not static; rather, it is a continuous changing framework that highlights knowledge or value priority areas for that society.

As a cyclic, on-going and intentional process, across the world, a curriculum has been practiced in four main phases: Planning (*noting a problem and conducting need assessment*), Designing (*developing a draft curriculum*), Try-out (*testing the drafted curriculum*) and Implementation (*disseminating the curriculum across the country for use*). At this point, it is important to note that, although some scholars (e.g., ACARA, 2009; Otunga & Nyandusi, 2010; Hussain, Dogar, Azeem, & Shakoor, 2011) include evaluation as a phase occurring at one point during curriculum development, a close look of this component shows that, it cuts across all phases from stakeholders' need analysis, to try-out stage, and during and/or after implementation stages. Since evaluation touches every phase and stage of the curriculum development, and since it helps us to have a holistic

picture as to how a given curriculum functions; it is recommended to consider it a cross-cutting and continuing process of curriculum development. Considering evaluation in this way might help curriculum developers to practice it all the time across the whole process of curriculum development.

Curriculum evaluation refers to the collection of information on which judgment might be made about the worth and the effectiveness of a particular educational programme (Tyler, 1949; Dunn & Mulvenon, 2009). Thus, feedback from this process are useful in that, they help in deciding whether to retain the programme as it stands, modify it, or throw it out altogether. As the aspect of curriculum evaluation continues to gain scholars' attention, a point to note is that, the best evaluation process that should be followed is that which will help evaluators to gather information that could help them guide their own decision-making in an educational programme and curriculum development. As such, the focus of curriculum evaluation should include Curriculum design, Learning environment, Instruction Process, Resources and Materials used in instructional process.

Over the years, in order to gain an overall picture regarding how best a curriculum is functioning, instruments that have been used to collect information regarding curriculum usability and usefulness include: tests, examinations, interviews, questionnaires and observation of the graduates' performance at work places as reported by employers (De Luca, 1994; Hussain et al., 2011**;** Hall, 2014). According to Hall (2014), when a country devotes its efforts in using information from a variety of these techniques, scholars are at a position of collecting valid and reliable information that would help them to evolve their curriculum for better outcomes. However, despite having different techniques of evaluating a curriculum, the most prominent tool used for curriculum-evaluation is the *National students' examinations* (De Luca, 1994; Boit, Njoki & Chang'achi, 2012**).** Across ages, scholars have been using the concept "examination" to refer to summative rather than formative assessments and testing which takes place as part of "formal" learning, or out-of-school "job related assessments". Whether such assessments are conducted by the Government ministry or its organ (as in Tanzania and Kenya), or by the receiving institutions (as in Japan), or by private agencies (as in the US); the most emphasis is given to evaluating the curriculum at the end of the program rather than during program implementation or after program implementation. As such, terms such as "*external examinations*", "*Public examinations*" and "*National examinations*" are frequently used, with some minor practical differences but to accomplish similar objectives (De Luca, 1994).

According to Darling-Harnmond (1988) as cited in De Luca (1994), due to financial reasons**,** most National Examination offered across countries tend to focus more on two issues: First, they weigh more theoretical aspects of the curriculum than the practical ones**.** Second, most questions come from the subject areas that can be tested more easily than those which are not. Although this practice has been predominant in the education system, studies have shown that, when theoretical aspects are given more weights in examinations, its consequence is that, it influence teachers to rely more on the traditional teacher-centred instructional approach; putting much emphasis on theoretical components than the practical areas suggested by the curricula (Saracaloglu, et al. 2010; Boit, Njoki & Chang'achi, 2012**).** Again, where those aspects of a subject which can be tested most easily are given prominence in the assessments, teachers will spend more time teaching such topics and leave those which are not frequently tested (Rehmani, 2003; Hewitt, 2006 as cited in Saracaloglu, et al. 2010; Haki elimu, 2012). Generally, one of the problems of using summative assessment is that, they provide us with illusions regarding the curriculum implementation process as well as students' mastery of curriculum objectives. Thus, in a long run, as the use of National examination to evaluate the curriculum product become prominent; a complete picture of how best such curriculum is functioning gets narrow.

II. The Present Study

Unlike previous Tanzanian curricula, the latest one gives formative and Summative assessments equal weights. For example, according to the 2007- Curriculum for Ordinary Level secondary education in Tanzania, "continuous assessments and the final examination shall weigh 50% each" (p.32). However, despite this curriculum demand, still, there is a claim that *focus, weight, frequency* and *emphasis* given to continuous assessments offered by teachers at school differ significantly. As a result, there is blame that some schools test less practical components than theoretical ones. Moreover, some schools offer summative evaluation once per semester while others do it on weekly and others on monthly basis.

Grounded on this observation, the question this study is addressing is: does that *what is measured* and *how it is consistently assessed* through National examinations in Tanzania not affect: (i) what is taught, (ii) what is assed, and to a large extent (iii) what is valued in the schooling process? In order to answer this question, this main question was divided into two sub-questions:

- Which subject-syllabus topics are assessed more frequently by the National examination in Tanzania? And which ones are frequently weighed using laboratory-experimentation?
- Do National examinations influence teachers' choice of the topic to teach, topics to assess, and the type of assessments to offer during curriculum implementation?

Answers to these questions is important as they will help to inform policy makers and implementers on the impact of the current practices related to curriculum evaluation on curriculum practices not only in Tanzania, but also in other countries with similar curriculum evaluation practice.

III. Methodology

A. Study Approach

In order to access detailed information required to accomplish the study objectives, both quantitative and qualitative information were needed. Thus, two data collection techniques were adopted: document analysis and interview with the participants.

B. Instruments

In terms of instruments, on the one hand, document analysis of Ordinary-level Biology-subject National examination was conducted to develop a list of topics that frequently contribute questions in the National examination papers. On the other hand, an interview using a semi-structured interview and check-list guide was used to explore students' thoughts about the syllabus-coverage by their teachers and the kind of tests they frequently do during continuous assessments.

C. Sample

On the one hand, National examination papers offered by the National Examination of Tanzania (NECTA) over the past four years (2011 – 2014) were used for document (content) analysis to establish the topics that frequently contributed questions in the exams. However, due to time limitation, the topics that were focused are those designed for grade eleven (i.e., form three in Tanzania) and grade twelve (i.e., form four in Tanzania) only. On the other hand, 100 randomly selected form-four (grade twelve) students from 10 public secondary schools were involved. To improve ecological validity, students from both rural and urban secondary schools were used, with each school contributing 10 students.

D. Procedure and Ethical Consideration

Simple random sampling was used to select participating schools. Before data were collected, consent was at first sought from the school principal of each selected secondary school. Further, to maximize freedom of participation among students, a briefing regarding study objectives, rationale and confidentiality of their opinion was made before each interview session. During interview, a researcher met with students once in each school. Thus, a total of 10 interview sessions were conducted with each session consisting of 10 students.

IV. Results

A. Topics That Are Frequently Weighed During Summative Exams and the Prominent Approach Used

In order to understand the extent to which National exams weigh equally all the subject-topics as they are in the subject curriculum, a matrix was developed to analyze whether topic contributed a question, the number of question contributed and whether such questions test the theoretical or practical component. Results (see table 1) shows that, although assessment of some topics e.g., HIV/AIDS was not satisfactory, summative examinations offered by the National examination council of Tanzania test a wide range of the content areas as indicated in the syllabus. However, one major problem that has been noted is that, such wide-coverage is for theoretical components rather than practical components. Specifically, it has been found that, across years, students are subjected into practical tests on the same permanently-selected topics i.e., Nutrition and Classification.

Table 1: ***Syllabus Coverage during Summative Assessments***

Year →		2010		2011		2012		2013	
		Number of question		Number of question		Number of question		Number of question	
Grade level ↓	Topic ↓	Theory	Practical	Theory	Practical	Theory	Practical	Theory	Practical
Form three (grade eleven)	1.Classification (Kingdom Plantae)	1	1		1		1		1
	2. Movement	3		3		2			
	3. Coordination	4		2		2		2	
	4. Excretion	1		1					
	5.Regulation	2		4		2		1	
	6.Reproduction	4		1		1		2	
Form Four (grade twelve)	1.Growth			1		2		1	
	2.Genetics	4		3		1		1	
	3.Classification (kingdom Animalia)	2	1	1	1	1	1	1	1
	4.Evolution					1		1	
	5. HIV/AIDS & STIs							1	

B. Students' Perception of the Topics Coverage and Assessment Strategy Used At School during Curriculum Implementation

Students' were given a check-list from which they were required to show whether topics were taught or not. For those which were taught, they were further asked to rate whether all sub-topics were thoroughly covered or not. As it can be seen in table 2, with the exception of HIV/AIDS and STI, all other main topics were reported to be covered by teachers during instruction by more than 70%. However, despite teachers attempt to pass over each topic, a highest percentage of students reported that, coverage of such topics was not thorough i.e., there are some sub-topics which were not taught.

Table 2: ***Teachers' Syllabus Coverage and Structure of Their Formative Assessments***

Grade	Topic	Has the topic been covered?		Were all sub-topics covered?		In the following topics, were you assessed practically or theoretically in the last two grades of your secondary education?	
		Yes	No	Yes	No	Theory test	Practical test
Form three (grade eleven)	1.Classification (Kingdom Plantae)	91	9	70	30	24	76
	2. Movement	95	5	73	27	100	0
	3. Coordination	97	3	57	43	100	0
	4. Excretion	90	10	90	9	100	0
	5.Regulation	89	11	88	12	100	0
	6.Reproduction	100	0	55	45	100	0
Form four (grade twelve)	1.Growth	80	20	75	25	92	8
	2.Genetics	70	30	40	60	98	2
	3.Classification (kingdom Animalia)	89	11	60	40	14	86
	4.Evolution	76	24	59	41	100	0
	5. HIV/AIDS & STIs	48	52	30	70	100	0

During an interview, most students were of a view that, some subtopics were not exhaustively taught. To exemplify, the following are some response from respondents:

- S67 said, "*You know, the syllabus wants us to be able to demonstrate some competences like counselling and how to help a victim of accidents. Yet, despite such objectives, I assure you that I cannot counsel someone"*
- In a similar way, S_{43} responded, "*you know when I did my Form II National exam, I found many questions from topics and topic-areas we had not covered in the class.....I anticipate the same in the exam to be conducted at the end of my Form IV next month"*

When students were asked to reason why, during curriculum implementation, they think some topics were neither taught, nor demonstrated in the laboratory, and nor were they tested using practical; students' answers revolved around issues related to appearance of such topics in examinations, teachers' competences and time insufficiency to cover the syllabus. The following are representative responses from some of the respondents:

- S_{22}, one of the students argued, *"you know, many reasons can be attributed to this, it could be due to insufficient time allocated to cover the syllabus, or even because these topics do not appear in the final examinations....."*
- A similar response was noted from S_{99} who said "*why should we spend our time covering areas that will not appear in our final exam? Teachers know that. ..... That's why they are not teaching us such Topics"*.
- Again, $S_{25,}$ a classmate of S_{67} added*, "..... my conclusion on this is that, may be a topic is difficult to deliver..... or useless at all"*.

Generally, content analysis of the interview showed that, 69% of the students had views similar to those reported above.

C. Discussion

These results are similar to those reported by Rehman (2003) in Pakistan and Saracaloglu and his colleagues (2010) in Turkey, who assessed teachers' views regarding the influence of public examination on their teaching practice. According to them, participant teachers were of the views that, they are bound to switch their teaching methods and strategies to cover topics that appear most in exams so that the students can pass. Although samples of the present study were students, the objective was the same: to find out whether teachers' practices in relation to curriculum are influenced by the National Curriculum Evaluation strategies. This therefore shows that, the *kind of questions*, *format of questions*, and *general structure* of exams we offer to students affect teachers practice on their teaching as well as their formative assessment practice. When teachers perceive that some curriculum skills are weighed more than others, then, they will in a similar way invest much of their instructional efforts on emphasizing such areas and not others. In principal, teaching of science is evidence-

based. Thus, when more weights to practical tests is given to some topics and not others, teachers will skip the less tested ones, thereby sending a message to students that learning experimentally is unique for some topics and not others.

V. CONCLUSION AND RECOMMENDATION

This study thought to establish a relationship between examination coverage and teachers' practice on the curriculum. On the one hand, although results have shown that National examinations are testing somewhat a wide range of topics as shown in the National subject syllabus, such coverage is for theoretical components. It has been found that, across years, practical tests are designed for some selected topics only. On the other hand, this practice was found to match with two issues: First, it was found that, summative assessment practices influence teachers' choice of the topic to cover during syllabus implementation. Secondly, it influenced teachers' formative assessments practices in which students were tested through laboratory experimentation only for the topics which contribute to practical exams at the end of their study programme.

Grounded from this study-finding, it can be concluded that, when same mechanism or strategy is used to evaluate a curriculum (as it is for the use of National Summative pen-paper examinations), in a long run, a public may lack a complete picture regarding how best and comprehensive their children are learning at school. Moreover, when a curriculum is largely assessed using National examination, in a long run, it might influence teachers practice regarding the curriculum implementation. This is because; most examination systems test the same easier and less expensive examinable areas of the curriculum.

A. Recommendation for Future Practice on Curriculum Evaluation

As Dunn and Mulvenon, (2009) argued, it is the actual methodology, data analysis, and use of the results that determine whether an assessment is formative or summative. Grounded on this point:

i. Even if National summative assessments are used, Governments are alerted that, exams should be structured in a way that, both students and teachers can never predict (i) how some areas will be tested, and (ii) whether some areas will be tested or not.

ii. Across the world, policies have been developed to ensure the use of continuous assessments in making summative judgements. However, what has been noted is that, there is either non-use of such assessment results, or teachers are not sure whether results of formative assessments they conduct at school are considered during final curriculum evaluation. Grounded on this, if Governments make a serious use of continuous assessment results, a mechanism should be set to assure teachers regarding it so that they can have appropriate and positive perception regarding it. In a long run, this will positively affect their performance.

iii. To gain a comprehensive reflection from the wider society, countries which evaluate a curriculum using National summative evaluation alone should change and make use of other curriculum evaluation techniques such as observation reports regarding the graduates' performance at work places as reported by employers.

B. Recommendation for future study

Since the sample of the study were secondary school students, due to difference in school cultures across all education levels, generalization is neither guaranteed across all education levels nor to school of different cultures such as to private schools. As such, future studies are suggested on using samples from such population of students so as to gain a wide picture regarding the topic in question.

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