

Pre-Service Teacher's Preparedness to Implement Competence-Based Curriculum in Secondary Schools in Tanzania

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Abstract

The need for education system to produce graduates with employable skills has necessitated the adoption of competence based curriculum in Tanzanian secondary schools. Consequently, teacher education institutions had to review their curriculum so as to provide pre-service teachers with teaching skills needed to implement competence based curriculum in secondary schools.

This study strived to investigate pre-service teachers' preparedness to implement competence based curriculum for secondary schools in Tanzania. It involved 16 purposively selected pre-service teachers trained at the University of Dar es Salaam. Findings showed that although pre-service were aware of the teaching and assessment methods stipulated to be used for the implementation of competence based curriculum they were not adopting the envisaged methods in their classroom practices. Pre-service teachers have continued to use traditional teacher centred teaching methods along with paper and pencil forms of assessments despite the fact that the newly adopted curriculum demands changes.

Key words

Teacher education, learner-centred method, authentic assessment, University of Dar es Salaam

1. Introduction

The growing need for education system to produce graduates with aggregate of employable knowledge, skills and attitudes has received significant attention in the recent education reforms in Tanzania. It has been recognized that skilled and knowledgeable labor force is pre-requisite to economic growth and development. This has been expressed in the Tanzania's Development vision 2025 which stipulates that:

Education should be treated as a strategic agent for mind-set transformation and for the creation of a well-educated nation, sufficiently equipped with the knowledge needed to competently and competitively solve the development challenges which face the nation. In this light, the education system should be restructured and transformed qualitatively with a focus on promoting creativity and problems solving (URT, 2000:19).

Therefore the education system was in need of significant reform so that schools could produce graduates who could generate knowledge, think creatively and solve the kinds of complex social and economic problems they will face in the society (Hamilton, Mahera, Mateng'e & Machumu, 2010).

Competence-Based education (CBE) was perceived to be desirable for aligning education provided to the dynamic social and economic demands of the society. It appeared to be an answer to the concerns raised about the capability and employability of the school graduates as it emphasized on the acquisition of knowledge, skills, attitudes and behaviors essential for effective performance of real world tasks (Maodzwa-taruvinga & Cross, 2012).

Thus, as part of the efforts to achieve the policy ambitions stated above, in 2005 the government of Tanzania through Tanzania Institute of Education (TIE) revised the secondary school curricula into competence-based curricula (CBC) with the aim of equipping school graduates with sufficient knowledge and life skills for them to survive academically and socially in the modern world (Kitta & Tilya, 2010). The revision process involved shift in paradigm from content-based to competence-based. Content-based curriculum has been criticized for equipping students with knowledge and skills which neither tally with the demands of the job market nor enable its recipients to overcome complex social and economic challenges of the 21st century world. It has been characterized by lack of integration between theory and practice with its graduates being unable to apply theory when doing real-life tasks (Cremers & Eggink, 2006).

1.1 Competence-based curriculum for secondary schools in Tanzania

The revised competence-based curriculum in Tanzania as in some other African countries e.g. South Africa's curriculum 2005, adopted learner-centred pedagogy, formative and authentic assessment approaches, and emphasized development of competencies and application of knowledge in real life context. These features are discussed in details as follows:

The revised curriculum emphasizes on competence development than acquisition of content knowledge. The introductory parts of the syllabi clearly indicate that the revision process entailed among other things change in paradigm from content-based to competence-based curriculum" (MoEC, 2005 p. iv). This means that teaching and learning process has to change its orientation from rote memorization of content knowledge to acquisition of skills and competencies useful for solving real life problems (Woods, 2008; World Bank, 2011). In competence-based programs the instructional process facilitates the development and evaluation of specified competencies (Elam, 1971). Thus, for each subject, competencies to be achieved by students which include subject and grade level competencies have been specified. For example, one of the competencies to be developed by form one students is the "ability to demonstrate appropriate use of biological knowledge, concepts, principles and skills in everyday life" (MoEC, 2005 p. 1).

The revised syllabus also stipulates the use of learner-centred activity-based pedagogy during teaching and learning. It states that "teachers are advised to use participatory teaching and learning strategies as much as possible to help learners demonstrate self-esteem, confidence and assertiveness" (MoEC, 2005 p. vii). This means that classroom teaching are to be featured by role plays, problem solving, projects, case study, and study visits among other learner-centred strategies. In learner-centred teaching for competence development, teacher is supposed to switch from the role of an expert who transfers knowledge to a coaching role of facilitating and guiding learning process (Biemans, Nieuwenhuis, Poell, Mulder & Wesselink, 2004). While learners are supposed to take responsibility for their own learning through direct exploration and experience, teachers are supposed to design effective learning activities geared towards the development of specified competencies. Thus, student spend most of the instructional time engaging themselves in doing learning activities than listening or watching what teacher lectures or demonstrates (Burke, Hansen, Houston & Johnson, 1975).

Moreover, the revised curriculum stresses on the use of formative assessment focused on the prescribed competences. It emphasizes teachers to assess students frequently using authentic

assessment methods such as portfolios, classroom or field observation, projects, oral presentations, self-assessment, interviews and peer-assessment (Kitta & Tilya, 2010).

Authentic assessment methods are more useful for competence-based curriculum than other forms of assessment because they provide opportunity for students to demonstrate the competencies they have mastered in real life or analogous context. More importantly, teachers are required to change from norm-referenced to criterion-referenced judgment of learners' capabilities or competencies to determine their progress (Burke et. al., 1975; Kouwenhoven, 2003). Finally, teachers are supposed to provide continuous, timely and constructive feedback to inform student about the strength and weakness of their performance. Moreover, instructions and learning are reviewed and modified basing on the feedback data (Burke et al., 1975).

The revised curriculum is also characterized by emphasis on the application of knowledge to integrate theory and practice in real life context as opposed to the phased out curriculum which was criticized for being content-driven compelling teachers to adopt transmission approaches such as lecturing to cover overloaded curriculum content by emphasizing students to memorize their lesson notes which was deemed crucial for passing examination which often tests ability to recall memorized facts, knowledge and principles (Chonjo, Osaki, Possi & Mrutu, 1996; Osaki, 2004). It is stated in the revised curriculum that "student should have ability to make appropriate use of biological knowledge, concepts, skills, and principles in solving various problems in daily life" (MoEC, 2005). This curriculum demand appears to be supported by literature on competence-based education. For example, Mathijssen-Jansen (1999) cited in Kouwenhoven (2003) criticized learning of isolated knowledge and skills and later integration, arguing that learning environment should emphasize on contextualization (from theory to situation, from general to specific) and de-contextualization (from situation to theory, from specific to general). Thus, teachers are required to design a learning task which is to be carried out in a realistic context or authentic learning environment so as to develop the desired competences.

Generally, it can be realized that the introduction of competence-based curriculum in secondary schools calls for comprehensive change in instructional approach in terms of teaching, learning and assessment processes. Consequently, this necessitates changes in teacher education programs to equip teachers (both pre-service and in-service) with competencies that will enable them to effectively handle challenges associated with the implementation of competence-based curriculum in secondary schools (Woods, 2008; Kitta & Tilya, 2010).

2. Statement of the Problem

The introduction of competence based curriculum for secondary schools in Tanzania imposes new demands on teachers. This necessitates teacher education institutions to revise their curricula so as to respond to the demands imposed by new curriculum on the graduates of teacher education programs. However, since the competence based curriculum for secondary schools was introduced in the year 2005, there is no evidence that teacher education curriculum at the University of Dar es Salaam where secondary school teachers are trained has changed to cater for new demands arising out of the introduction of competence based curriculum in secondary schools. This raises a question on whether graduates of teacher education programs from the University of Dar es Salaam who are expected to teach in secondary schools where the curriculum is competence-based have been well equipped with skills and knowledge for them to effectively implement competence based curriculum. There is little evidence on the preparedness (to effectively implement competence-based curriculum) of the pre-service secondary school teachers graduating from the University of Dar es Salaam. Therefore, the current study strived to investigate pre-service teacher's preparedness to implement competence based curriculum for secondary schools in Tanzania.

The study sought to answer the following questions:

1. Are pre-service teachers aware of competence-based curriculum for secondary schools?
2. What are the teaching approaches used by pre-service teachers during their second year teaching practice in secondary schools?
3. What are the assessment approaches used by pre-service teachers during their second year teaching practice in secondary schools?

3. Methodology

3.1 Participants

The study involved 16 purposefully selected second year pre-service teachers of the University of Dar es Salaam who were at the end of their block teaching practice in Tanga region in Tanzania. Second year students were selected because they were at their final year teaching practice thus they are perceived to have acquired substantial amount of knowledge and skills for teaching including implementing competence-based curriculum.

Moreover, by the time this study was conducted second year students were at the final part of their 16 weeks teaching practice experience thus they are presumed to have acquired sufficient field experiences for practicing knowledge and competences learnt at the University. Beside, after completing their third year pre-service teachers will be employed to teach in secondary schools where the curriculum is competence-based.

3.2 Instruments

The study used interview guide and observation checklist. The aim was to capture data that represents pre-service teacher's perspectives, actions, decisions and events in their real classroom and school setting (Yin, 2011).

3.2.1 Interview guide

Interview questions were constructed by the researcher basing on the main characteristics of competence-based curriculum for secondary schools in Tanzania (as described in section 1.1). The aim was to explore pre-service teachers' awareness of competence-based curriculum and approaches they used to implement it. The interview questions were categorized into pre-service teachers' conception of competence and competence-based curriculum, pre-service teachers' characterization of competence-based curriculum in terms of the intended outcomes, teaching and assessment approaches prescribed for its implementation. Moreover, pre-service teachers were also interviewed on their classroom practices in implementing competence-based curriculum. This specifically focused on teaching and assessment approaches they used in implementing the curriculum.

3.2.2 Observation checklist

Observation was used to crosscheck pre-service teachers' interview responses on their classroom practices. Thus, the observation checklist consisted of items on teaching and assessment approaches used by pre-service teachers during the actual teaching and learning process in their teaching practice classrooms. Classroom lessons conducted by pre-service teachers were observed to identify teaching and assessment approaches they used.

4. Results

4.1 Pre-Service Teachers' Awareness of Competence-Based Curriculum

4.1.1 Pre-service teachers' conception of competence

Pre-service teachers' defined the concept of 'competence' and describe competence-based curriculum by characterizing it during the interview. Responses showed that pre-service teachers consistently conceived competence as 'learners' capability to perform'. For example, pre-service teacher B said '*Competence is the ability to perform something*' yet pre-service teacher G explained '*Competence is what student can perform after the lesson*'. Similar conception of competence was also provided by Tuxworth (2005) who defined competence as a 'capacity in an individual'.

Pre-service teachers' responses also showed that competencies are acquired after learning process normally under the guidance of a teacher. On this pre-service teacher F explained that '*competence is an ability which the learner has to be able to practice after learning*' e.g. *Ability to prepare sulfuric acid after learning methods of preparing sulfuric acids*. Similarly, pre-service teacher A added '*competence is something that teacher wants students to achieve or understand* e.g. *ability to read literary work and understand*'. It is evident from their responses that pre-service teachers have basic understanding of the concept of competence. Also, pre-service teachers' view of competence is consistent with the description of competence stipulated in the current competence-based curriculum for secondary schools which states:

In this document, 'competences' describes what a secondary school learner should be able to do as the outcome of teaching and learning. Competences shall be developed over the student's entire life of learning and cut across all subject areas (TIE, 2013 p.13).

Due to variation in usage the term competence has no common conception in the literature. However, Kouwenhoven (2003) defined competence as the ability to choose and use the knowledge, skills and attitudes that are needed for performance at a desired level. Also, Mosha (2012) defined competence as an integrated set of skills, knowledge and attitudes that enable one to effectively perform the activities of a given occupation to the standards expected at school and later in the world of work. Unlike the literature, pre-service teachers' conception of competence does not stress on the 'desired standards or level of performance'.

4.1.2 Pre-service teachers' characterization of competence-based curriculum

Generally, interview responses showed that pre-service teachers viewed competence-based curriculum as a curriculum focused on 'building students' performance abilities'. For example, pre-service teacher J described: '*Competence based curriculum is a curriculum which focuses on building performance ability on students that is making them more practical than theoretical*'. Similarly, pre-service teacher G said: '*Competence based curriculum is a curriculum which focuses on building performance ability basing on classroom subjects or classroom teaching*'. Since pre-service teachers conceived 'competence' as 'students' performance abilities', it is reasonable to infer that pre-service teachers view competence based curriculum as a curriculum focused on building competences.

Pre-service teachers' responses on the features of competence based curriculum in terms of the expected outcomes and prescribed teaching and assessment methods showed that they had varied understanding of the features of competence based curriculum. Each characteristic of competence based curriculum was split into three categories and the number of responses for each category is shown in table 1:

Table 1: pre-service teachers' characterization of competence based curriculum

Characteristic	Categories	No. of Responses
<i>Expected Outcomes</i>	<i>Competencies</i>	13
	<i>Content knowledge</i>	2
	<i>None prescribed</i>	1
<i>Teaching Methods</i>	<i>Learner-centred</i>	14
	<i>Teacher-centred</i>	1
	<i>None prescribed</i>	1
<i>Assessment Methods</i>	<i>Performance-based</i>	4
	<i>Paper-pencil</i>	11
	<i>None prescribed</i>	1

Findings in table 1 shows that majority of pre-service teachers interviewed characterizes competence-based curriculum as a curriculum focused on building competences using learner-centred teaching methods. This view is consistent with the outcomes and teaching methods prescribed in the competence based curriculum (TIE, 2013). The current competence based curriculum is aimed at building 'competences' which describe what a secondary school learner should be able to do as an outcome of teaching and learning (TIE, 2013). The curriculum stipulates six key competences which include: critical and creative thinking, communication, independent learning, numeracy, personal and social values, and technological literacy (TIE, 2013 pp. 13-16). In this curriculum, learner-centred teaching approaches have also been envisaged for implementing the curriculum. 'The implementation of ordinary level secondary education shall emphasize learner-centred approach' (TIE, 2013 p. 29). These results substantiate pre-service teachers' awareness of the recommended teaching methods and the outcomes expected to be attained by learners using competence based curriculum for secondary schools.

However, findings on assessment methods showed that pre-service teachers were not aware of the assessment approaches required for the implementation of competence based curriculum. This is because 68.75% of the teachers interviewed named paper and pencil assessment methods to be characteristic of competence based curriculum. This is contrary to the current curriculum which stipulates the use of assessment methods that measures students' understanding, reasoning and critical thinking rather than ability to regurgitate memorized facts. The assessment methods stressed include portfolios, rating scales, rubrics, checklists, project work, oral presentations, writing reports, analysis of text and practical tasks for demonstrating performance (TIE, 2013 p. 32). Pre-service teachers' characterization of competence based curriculum has some implications on their classroom teaching practices as described in the next sections.

4.2 Teaching Approaches used by Pre-Service Teachers during the Teaching Practice

Interview responses showed that pre-service teachers named group discussion, questions and answers and lecture as the teaching methods they most frequently used while guest speaker, study visits and practical work were least used methods as shown in table 2.

Table 2: Teaching methods used by pre-service teachers

Teaching methods	NO. of PT using it (N=16)	Percentage (%)
Group discussion	15	93.8
Questions and answers	14	87.5
Lecture	12	75
Presentations	7	43.8
Demonstrations	5	31.3

practicals	4	25
Jigsaw	2	12.5
Observations	2	12.5
Practical work	1	6.3
Study visits	1	6.3
Guest speaker	1	6.3

To large extent pre-service teachers' responses on the teaching methods they use in implementing competence based curriculum were consistent with the results of researchers' observations which found *lecture* to be the most frequently used teaching method among the top five methods commonly used. Other methods and their respective frequencies of use are presented in Table 3.

Table 3: Teaching methods observed during the pre-service teachers classroom lessons

Teaching Method	Frequency in 20 observations	Average Time (in min)
Lecture	15	28
Group Discussions	13	16.5
Questions and answers	9	6
Demonstrations	5	6
Presentations	2	5

Classroom observations also revealed that in all the lessons observed pre-service teachers dominated the teaching and learning process by assuming most of the roles during the learning activities except for short recall based verbal questions which interspersed teachers' verbal instructions. Moreover, where small groups were formed, they were too large (8-12 members each). This limited both the participation of students in group activity as well as interaction between the teacher and individual group members.

These findings imply that despite pre-service teachers awareness of the teaching methods prescribed to be used in the implementation of competence-based curriculum as found in section 4.1, majority of the pre-service teachers were not able to adopt most of the prescribed learner-centred teaching methods thus they were implementing the curriculum using the conventional teacher-centred methods. Similar findings as reported by Kyafulilo, Rugambuka & Mosses (2012) showed that despite high level of awareness about competence-based teaching approaches among pre-service diploma teachers as indicated in the self-reporting instrument (questionnaire) pre-service teachers were unable to practice competence-based instructional approaches. Thus, it is likely that pre-service teachers' knowledge of competence teaching methods is theoretical and superficial.

The failure to adopt the prescribed learner-centred methods and thus the implementation of competence-based curriculum using the convention teacher-centred methods by pre-service teachers trained at the University of Dare s Salaam imply superficial knowledge and skills on how to adopt the recommended methods. It is likely that teaching method courses which build pre-service teachers' skills and competences for teaching secondary school subjects have not responded to the new demands posed by the revised competence based secondary school curriculum.

Implementation of competence based curriculum using traditional teacher centred teaching methods is against both the demands of the current competence-based curriculum which are based on current perspectives on teaching and learning.

In the current perspectives on teaching and learning, learner-centred methods are deemed best practice in situations where curriculum aims to build students independent study skills, working collaboratively with others and application of academic knowledge and skills in real life situations (Westwood, 2008).

4.3 Assessment Methods used by Pre-service Teachers during Teaching Practice

Interview responses showed that 81.3% of the interviewed teachers named verbal questioning as the most frequently used method of assessing students learning followed by assignments and exercise as presented in table 4.

Table 4: Assessment methods reported to be used by pre-service teachers

Assessment methods	NO. of PT using it (N=16)	Percentage (%)
Verbal Questioning	13	81.3
Assignments	10	62.5
Exercise	6	37.5
Quizzes	5	31.3
Tests	4	25
Homework	3	18.8
Practical task presentation	2	12.5

Classroom observations also revealed similar pattern where verbal questioning was observed to be the most frequently used assessment method particularly during the introduction part of the lesson. Other methods and their respective frequencies are presented in table 5.

Table 5: Assessment methods used by pre-service teachers

Assessment Method	Frequency in 20 observations
Verbal questioning	14
Assignments(Group/Individual)	10
Homework	6
Exercise	3
Quizzes	2

These findings imply that majority of the pre-service still rely on traditional paper-pencil assessment methods despite changes in curriculum which demands the adoption of authentic and performance-based assessment methods. This confirms earlier findings by Hakielimu (2012) who reported that portfolios, project work, practical tasks, and written reports though envisaged in the competence based curriculum as among the most important assessment methods were the least used methods by teachers.

Teachers asked verbal questioning to assess what students remember about the previously learned material. They interspersed their lectures with verbal questioning which called forth memory of facts learned.

Example:

Teacher G started the lesson by asking *'who can name any triangle that you know?'*

Students responded by mentioning several types of triangles.....

Teacher G (seems satisfied by his students responses) *'draws the triangle on the chalk board and ask students who can name this triangle?'*

No student volunteers to answer that, teacher G mention some students one after another but none of them had an answer.

The teacher proceeds *'this is the triangle'*

Innovative modes of assessment require teachers to move from the routine limited factual questions (as in the above example) to more open-ended questions and problem solving tasks which evoke

broad ranging discussions and thinking in classroom (Black, Harrison, Lee, Marshall & William, 2005).

The researcher further observed and rated pre-service teachers classroom questioning basing on several attributes as indicated in table 6.

Table 6: Pre-service Teachers Classroom Questioning

Attribute	N	Mean	Std. Deviation
Encouraged questioning	20	4.15	.745
Encourage students question one another	20	2.15	.366
Encourage student to question teacher	20	2.45	.510
Gave students an adequate amount of time to respond to questions	20	2.60	.503
Ask factual questions which calls for memorized facts, ideas, methods	20	4.45	.605
Ask open ended questions which calls for opinion, debate, dialogue	20	2.25	.639
Provide assessment tasks which measure the attainment of specified objectives or competences	20	2.70	.657
Provided feedback that gave students direction for improvement	20	2.25	.444

Findings in table 6 showed that although pre-service teachers encouraged and asked questions (mean=4.15), questions were mostly posed by teacher to students than students to teacher or student to student. Moreover, most of the questions were factual and called forth memorized facts (mean=4.45) with short wait time between the question posing and requiring response from students. None of the pre-service teachers whose lessons were observed allowed more than ten seconds 'wait time' between questions and student's response. Short wait time denied students the opportunity to think and formulate answers (Rowe, 1974). The researcher further reported that a wait time of less than one second prevented most students from taking part in the classroom discourse.

Further, pre-service teachers' feedback to students' responses to verbal questions consisted short non-specific remarks of praise or censure depending on whether the answer was right or wrong. This pattern of questioning divides students in most classes into groups of few who volunteer to respond to teachers' questions and majority who never try to respond. Students who volunteer to answer questions become even more motivated to try answering questions as they get praised by teacher while majority feel shy of answering questions to avoid teachers' censure for wrong answers. Successful feedback needs to be immediate, specific and descriptive enough to identify learning strength and weakness as well as direction for improvement (Manitoba Education Citizenship and Youth, 2006).

Lack of awareness and consequently low level of adoption of the prescribed assessment methods for competence based curriculum among pre-service teachers trained at the University of Dar es salaam is likely to be an indication of gaps in pre-service teachers' skills on how to conduct learning assessment under competence based curriculum. It may also imply the need for pre-service teaching method courses to respond to the new demands arising out of the introduction of competence based curriculum in secondary schools.

5. Conclusion and Recommendations

This study concludes that pre-service teachers trained at the University of Dar es Salaam are aware of some aspects of the revised competence based curriculum for secondary schools in Tanzania. This includes the learner-centred teaching methods prescribed for the implementation of competence based curriculum as well as the competences intended to be acquired by secondary

school students. Nevertheless, pre-service teachers are not aware of the performance based assessment methods prescribed for the implementation of competence-based curriculum.

Despite their awareness, pre-service teachers are not adopting the teaching methods envisaged for the implementation of competence based curriculum for secondary schools. It is likely that their knowledge of these methods is theoretical thus they are unable to apply them in their actual classroom teaching.

Since pre-service teachers are not aware of the prescribed assessment methods for the implementation of competence based curriculum, they have continued using paper and pencil assessment methods to assess learning contrary to the demands of the revised competence based curriculum for secondary schools.

It is recommended that teacher education curriculum at the University of Dar es Salaam in particular and other Universities in Tanzania should be reviewed to respond to the new demands in teachers' pedagogical content knowledge arising out of the introduction of competence based curriculum in secondary schools in Tanzania.

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