

**CONSTRAINTS FACING SUCCESSFUL IMPLEMENTATION OF THE  
COMPETENCY BASED CURRICULUM IN MACHAKOS COUNTY,  
KENYA**

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**E55/10518/2006**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF  
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## **DECLARATION**

I declare that this research project is my original work and has not been presented for an award of a degree in any university or institution for consideration. This research project therefore has been completed by referenced sources duly acknowledged, where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including internet these are specifically accredited and references' cited in accordance in line with anti-plagiarism regulations.

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## **DEDICATION**

This research work is dedicated to my children

## **ACKNOWLEDGEMENTS**

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## **ABBREVIATIONS AND ACRONYMS**

|                |   |   |
|----------------|---|---|
| <b>C2C</b>     | - | Curriculum into the Classroom                   |
| <b>CBC</b>     | - | Competency-Based Curriculum                     |
| <b>CBE</b>     | - | Competency-Based Education                      |
| <b>CSEE</b>    | - | Certificate of Secondary Education Examinations |
| <b>KICD</b>    | - | Kenya Institute of Curriculum Development       |
| <b>NACOSTI</b> | - | National Council for Science and Technology     |
| <b>PISA</b>    | - | Program for International Student Assessment    |
| <b>SPSS</b>    | - | Statistical Package for Social Sciences         |
| <b>TSC</b>     | - | Teachers Service Commission                     |

## ABSTRACT

Kenya is in the process of shifting from content-based to competency-based system of education. Teachers are likely to face challenges when implementing a new curriculum especially in relation to the content and subject demarcations, the underlying assumptions, goals, teaching approaches and assessment methods. With this regard, this study sought to investigate the constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya. The specific objectives of the study were to: establish the teacher factors affecting the implementation of the competency based curriculum; determine the effects of available infrastructure on the implementation of the competency based curriculum; find out the effects of government support on the implementation of the competency based curriculum; and determine the intervention measures necessary for ensuring prudence in the implementation of the educational reforms. The study findings are of significance to the Ministry of Education, school administrators, teachers and the community as it shows the areas that may hinder effective implementation of competency based curriculum in Kenya. The study was based on Dewey's Social Constructivism Theory, which emphasizes the nature of human experience as informed by the principles of interaction and experience. The study adopted a descriptive survey design targeting all the 828 headteachers and 8,320 teachers in all the 828 public primary schools in Machakos County. Stratified random sampling was used to select 83 headteachers and 367 Grades one to three teachers where competency based curriculum was being implemented. Purposive sampling was used to select three sub-county directors of education. A questionnaire, an interview schedule, document analysis guide and an observation checklist were used as tools for data collection. Data collected from the field was both quantitative and qualitative in nature. Quantitative data was analyzed using descriptive statistics such as frequency counts and percentages while qualitative data was analyzed thematically in line with research objectives. The results of the analysis were presented using frequency tables, bar graphs and pie charts. The study established that: teachers were not fully prepared for the implementation of new curriculum; infrastructure available in schools were not adequate for successful implementation of competency based curriculum; the government hurriedly implemented CBC in schools without first addressing challenges such as understaffing, inadequacy of teaching and learning material and unfriendly teaching and learning environment. The study recommends that the Ministry of Education should invest more on teacher training and involve teachers in curriculum change process to create a positive attitude among them for successful implementation of Competency Based Curriculum.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

Curriculum is the medium through which nations around the world empower the general public with the values, knowledge, skills and attitudes that are necessary for them to be economically and socially engaged, in order to attain national and personal development (Kabita & Ji, (2017). The term curriculum refers to all the learning that is designed and directed by schools, whether such learning takes place at individual or group situations, and whether outside or inside the school (Kelly, 1983). This definition implies that a curriculum encompasses learning programs such as the subjects offered, intramural and interscholastic programs, career guidance among others (Azuka & Kurumeh, 2015). The development and implementation of a curriculum entails planning of learning programs with the aim of deriving change in learners as well as assessing how much of the desired change has been achieved.

Curriculum development is usually necessitated by the desire to respond to change, and as such any quality curriculum development is a continuous and on-going process. A good curriculum needs to align with global trends of rapid expansion of knowledge, broadening information and communication technologies, and the resultant constant change in the skills needed by learners to fit in the job market (Stabback, 2016). Currently, the world is experiencing a shift to competency-based education (Gardner, 2017). In the United States of America (USA), the competence based education movement has been around since 1980. The origin of competency-

based education, however, can be traced to the ideas of educational reform linked to business models specifying outcomes in objectives back in the 1920s (Williamson, 2000). Currently in the USA, schools implement a competency-based education system whereby learners proceed to higher educational levels once they have mastered preceding concepts and skills without regard to time, place or pace. The working definition of competency-based education system in the USA is guided by five principles of curriculum design: i) learners progress to a higher level once they master current skills and concepts; ii) the competencies comprise clear, quantifiable, and transferable learning objectives that empower learners; iii) there is a meaningful assessment process that provides learners with positive learning experience; iv) learners are provided with differentiated and timely support, which is in line with individual learning needs; and v) the outcomes of the learning process places emphasis on competencies such as knowledge creation and application, and development of critical skills and dispositions (Sturgis, 2016). There is a substantial difference between traditional systems of education and competency-based education, since in traditional systems learners are expected to spend a given amount of time on certain curricular subjects and progress to higher levels at predetermined intervals, even if they have not mastered the skills and concepts.

Finland's education system is highly respected as among the best around the world, with Finnish schools regularly emerging top in evaluations administered by the Program for International Student Assessment (PISA), which regularly appraises education systems in the Organization for Economic Co-operation and Development (OECD) countries. Finland's education system is considered a model of excellence

by proponents of competency-based education in Europe (Bristow & Patrick, 2014). The success of the Finnish education system is credited to reforms initiated in the country since 1970s. The reforms saw the localization of the national curriculum of Finland, which was before then highly centralized (Darling-Hammond & McCloskey, 2008). Finnish teachers were then empowered with skills in psychology, curricular theory, and research skills, to a level where they now are in charge of designing their own curricula guided by the national standards. School administrators and teachers in the country assume the responsibility of defining the overall goals of education for their schools, the assessment process for learners in their schools, as well as self-assessment of school improvement goals (Sahlberg, 2012). The society has a strong trust that the teachers and administrators will do a good job fulfilling these responsibilities. One of the main reasons for the success of Finland's education system is that the state invests heavily in teacher training. Teachers are chosen from among the top ten per cent of high school graduates and trained free by the government up to masters' degree level (Bristow & Patrick, 2014).

In Sweden, a group of schools known as Kunskapsskolan (knowledge schools) operate under a competency-based education model. The Knowledge Schools, which were launched in 1999, operate a model of learning that is grounded on personalized learning pathways. Students are guided to identify and set their own personal goals by trained coaches and tutors. When learners are in 8<sup>th</sup> grade, they start being encouraged to independently set goals. The Kunskapsskolan schools are consistent high performers when compared to the national average. Learners who attend the

Knowledge Schools are more likely to progress to universities than their peers who attend other schools in the country (Eiken, 2011).

New Zealand, another high performer in PISA assessments, is among the countries considered to have highly devolved school systems. New Zealand accords great individual autonomy to her schools in terms of the teaching and learning process. The country has a National Curriculum and National Education Standards framework, which help to set clear national education goals. National education performance expectations are set through Teacher Standards and the New Zealand Qualifications Framework, among other school review indicators (Nusche, Laveault, MacBeath & Santiago, 2011). Similar to Finland, the community in New Zealand has high level of trust in schools and educators to conduct effective learner assessment and school evaluation. The country does not run full-cohort national tests; instead, full autonomy is given to teachers for development of a standards-based curriculum and the assessment of learning. This is a distinguishing culture of a competency-based education system, whereby various measures of accountability are established. The schools in New Zealand are characterized by a tradition of teamwork among teachers, which could be a result of the high degree of autonomy accorded to teachers and their commitment to meeting school performance goals that they have participated in setting (Bristow & Patrick, 2014).

Tanzania introduced a competency based curriculum in 2005 to replace the content based curriculum that was in place since independence in 1961. This culminated in the development of competency-based education curriculum for secondary schools (Kafyulilo, Rugambuka & Moses, 2012). Curriculum review in Tanzania was

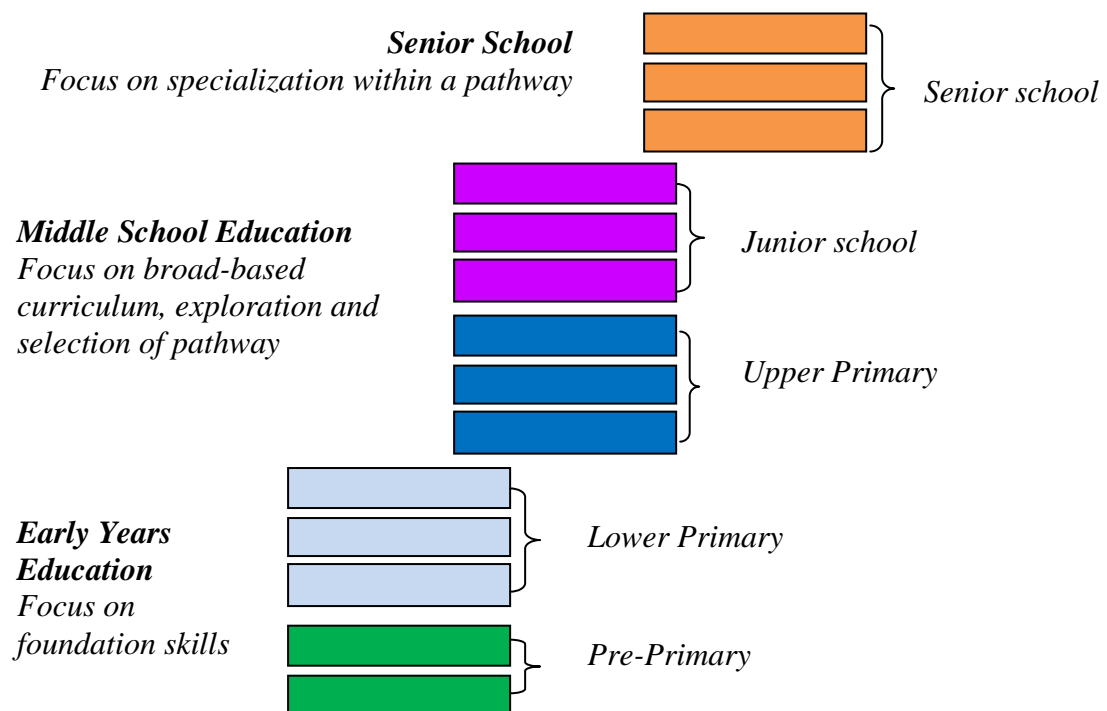
initiated as a response to the economic, cultural and political changes that were taking place in the country. There was a general feeling in Tanzania that the old content-based curriculum was not effective since learners who graduated under the curriculum could not demonstrate the competences and skills necessary to address national and global job market demands (Komba & Kira, 2013). The experience of Tanzania with competency-based education did not, however, register instant positive outcomes. For instance, research work by HakiElimu (2012) established that learners were performing poorly in Tanzania's national examinations mainly because teachers had not conceptualized the competency-based curriculum, and its implementation was poor in terms of curriculum implementation environment, teaching and learning methods, assessment methods, alignment of curriculum implementation and assessment, and professional development opportunities for teachers. HakiElimu (2012) recommended continuous teacher professional development in order to be conversant with the new curriculum and its implementation.

In Kenya, a major curriculum reform was experienced in 1985, when the 8-4-4 system of education was introduced as a response to recommendations by the Presidential Working Party on the Establishment of the Second University in Kenya (Republic of Kenya, 1981). The 8-4-4 system was mainly guided by a philosophy of self-reliance. Since then, various formative and summative reviews and task-force reports gave rise to reviews of the national curriculum in 1992, 1995 and 2002 (Republic of Kenya, 2017). The culmination of this curriculum review process was

the adoption by the Kenya Institute of Curriculum Development (KICD) of a competence based curriculum approach in the reforms.

Competency was conceptualized by KICD as learners' capacity for adequate application of learning resources and outcomes (attitudes, knowledge, skills, and values) in a defined context, either in school, personal, work, or professional development (Republic of Kenya, 2017). In the Kenyan context, competence-based education is considered as one where emphasis is placed on what a learner is expected *to do* as opposed to what the learner is expected *to know*. Competency-based curriculum is therefore learner-centred, with a lot of emphasis on the changing needs of learners, educators, and the society at large. The implication of this is that the curriculum accords learners an opportunity for acquisition and application of knowledge, skills, attitudes and values to day-to-day problem solving while placing emphasis on 21<sup>st</sup> century skills (Republic of Kenya, 2017).

With the introduction of competency-based curriculum, the country is shifting from an 8-4-4 structure to a 2-6-3-3-3 structure – pre-primary (2 years); primary (6 years); and secondary education (6 years). This newly introduced Competency-Based Curriculum puts emphasis on seven core competences, namely: i) Communication and collaboration, ii) Creativity and imagination, iii) Critical thinking and problem solving, iv) Digital literacy, v) Citizenship; vi) Learning to learn, and vii) Self-efficacy. Figure 1 shows the organisation of Kenya's basic education under competency-based curriculum.



**Figure 1.1: Organisation of Basic Education under CBC**

**Source:** Kabita and Ji (2017)

The implementation of competency-based curriculum is being done in phases beginning with pre-primary and lower primary classes, which started implementation in January 2018. When a new curriculum is being implemented, there is need for regular evaluations as a process of gathering and using information to detect problems and modify implementation strategies (Oluoch, 2011). The documented experiences from other countries that have adopted CBC show that the implementation of the new curriculum was faced with initial challenges (HakiElimu, 2012; Komba & Kira, 2013). In Tanzania, Kavindi (2014) identified such challenges to include shortage of teacher educators, overcrowded classes, inadequate teaching and learning resources and short time for teaching practice. As pointed out by Shiundu and Omulando (1992, p. 160), curriculum development is a process that

follows a number of stages, including conducting a situational analysis, formulating the objectives, setting up of the curriculum project, building the program, piloting the new programme in selected schools, improving the new programme, implementation, evaluation, and maintenance.

Indicators of successful implementation of CBC include the classrooms and the learning experience being learner focused, teachers focusing on the competencies that learners are expected to demonstrate, schools creating opportunities for local decision making, teachers establishing a balance between formative and summative assessment, availability of resources to support digital-based learning, the use of collaborative and co-development models in the teaching/learning process, and synchronous development, whereby teachers and community (parents) are involved in the learning process of the pupils. This study sought to establish the constraints experienced during the implementation of the Competency-Based Curriculum in Kenya, with specific focus on Machakos County, which is one of the Counties where CBC was implemented at the piloting phase.

## **1.2 Statement of the Problem**

Kenya is in the process of shifting from content-based to competency-based system of education, with an aim of aligning basic education with children's career interests, aptitudes, and abilities. Going by the experiences of other countries, notably Tanzania, which implemented CBC before Kenya, the process of introducing the new curriculum is expected to pose a range of challenges. Countries that have succeeded in the implementation of CBC, such as Finland and New Zealand, have placed a lot of emphasis on teacher training and placement of

adequate staff to schools. The countries have also invested in school infrastructure such that all public schools are fully equipped.

Teachers, as the key agents of successful curriculum implementation, are likely to be faced with challenges when implementing a new curriculum, such as the competency based curriculum being introduced in Kenya. Unless the challenges are identified early enough during the piloting stage, the problems can be carried forward to a national level when the new programme is being implemented on full scale. The study therefore sought to establish the constraints facing implementation of the competency based curriculum in Machakos County, Kenya.

### **1.3 Purpose of the Study**

The purpose of this study was to investigate the constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya.

### **1.4 Objectives of the Study**

The objectives of the study were:

- (i) To establish the teacher factors affecting the implementation of the competency based curriculum in Machakos County;
- (ii) To determine the effects of available infrastructure on the implementation of the competency based curriculum in Machakos County;
- (iii) To find out the effects of government support on the implementation of the competency based curriculum in Machakos County.
- (iv) To determine the intervention measures necessary for ensuring prudence in the implementation of the educational reforms.

## **1.5 Research Questions**

The research questions of this study were:

- (i) What are the teacher-factors affecting the implementation of the competency based curriculum in Machakos County?
- (ii) What are the effects of available infrastructure on the implementation of the competency based curriculum in Machakos County?
- (iii) What are the effects of government support on the implementation of the competency based curriculum in Machakos County?
- (iv) Which intervention measures are necessary for ensuring prudence in the implementation of the educational reforms?

## **1.6 Significance of the Study**

The study was necessitated by a growing concern by education stakeholders in the country over the delayed implementation of the competency based curriculum. The curriculum is anchored on the national goals of education and is designed to ensure provision of opportunities for the identification of talents and the potential brought by learners to schools and nurture such talents and potential through pathways and provided tracks. Findings of the study may be of significance to the Ministry of education, school headteachers and teachers, as well as the community in the following ways:

The Ministry of Education and the Kenyan Institute of Curriculum Development could find the study useful as it highlights the constraints that could hinder effective implementation of the competency-based curriculum in Kenyan schools. Such

information is important for the Ministry to address the challenges early enough to ensure success of the new curriculum.

The study could be of significance to school headteachers and teachers, who are the main agents of the curriculum change process. By studying how the change process is influenced by the knowledge, attitudes and beliefs of teachers, the study comes up with crucial recommendations that could make teachers better prepared to successfully implement the new curriculum. The study findings also add to the existing body of knowledge on curriculum change implementation and competency-based education.

### **1.7 Limitations of the Study**

- i) The competency-based education system is being implemented in Kenya for the first time. This means that the researcher did not have adequate local empirical literature on the new system of education. This limitation was addressed by comparing the issues and challenges experienced in other countries that implemented the competency-based education system before Kenya.
- ii) The issue under investigation was sensitive in nature and this led to restriction of information by some respondents. This limitation was addressed by assuring the respondents of confidentiality of the information given that it would be classified.

## **1.8 Delimitations of the Study**

The study was restricted to Machakos County. The study involved teachers, headteachers and Education Officers in selected sub-counties to enable the researcher to have a wider view of the responses on the problem under study. This study addressed itself to the constraints facing the implementation of the competency based curriculum.

## **1.9 Theoretical Framework**

The study was based on Dewey's (1938; cited in Ültanır, 2012) Social Constructivism Theory, which emphasizes the nature of human experience as informed by the principles of interaction and experience. Dewey believed learning should be organized around learners' prior experiences and the society. Dewey suggested that learners be provided with opportunity to engage in real world experiences, practical learning through creativity, and innovation to fully participate in the society. Social constructivism theory places emphasis on lifelong learning, experiential learning and participatory learning. The term constructivism connotes the idea of students constructing knowledge for themselves, that is, each learner independently (as well as socially) creates meaning, as s/he learns. This view has two implications: 1) teachers are urged to focus on each student individually and guide them to think about learning (as opposed to the subject or lesson being taught), and 2) knowledge is not independent of the meaning ascribed to experiences that are constructed by the student or the community of students. This supports the main focus of CBC, which emphasizes on what the learner is supposed *to do* as opposed to what the learner is supposed *to know*.

Social Constructivists argue that the learner should have the responsibility of learning. In other words, there is a lot of emphasis by social constructivists on active involvement of the student in the learning process. This is a marked difference from earlier educational perspectives, in which responsibility of learning solely rested with the teacher, and the student only played a passive role. For Dewey, learners do not simply mirror and reflect what the teacher teaches or what they read; rather, they actively construct their own understanding. Students actively seek meaning as they try the role of facilitators as opposed to teachers (Bauersfeld, 1995). Facilitators assist learners to make their own meaning from the content, which is different from a teacher whose role is to give didactic lectures to cover the subject matter. In competency based curriculum, the teacher plays the role of a facilitator, which promotes active participation of learners in the learning process.

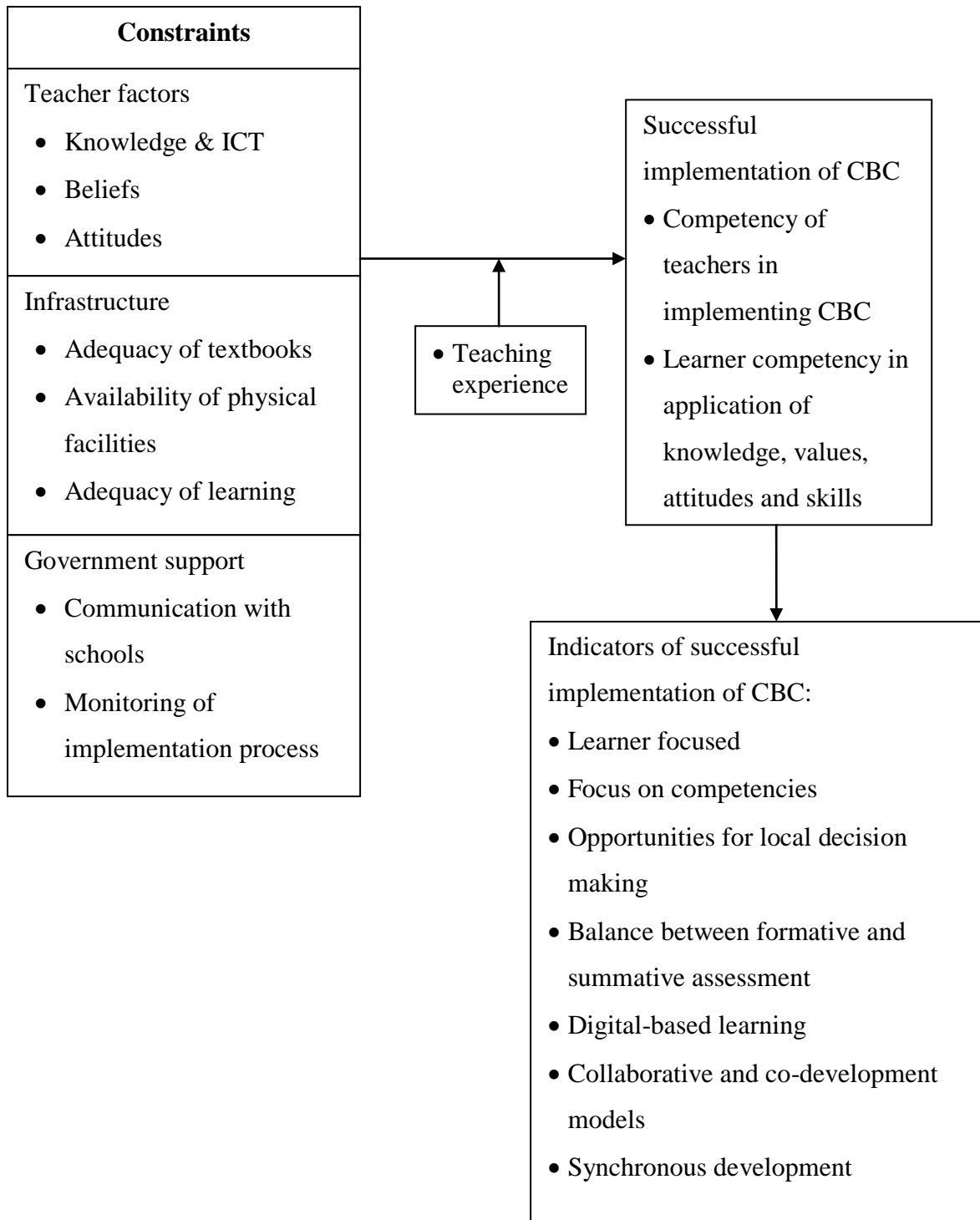
When approached from the viewpoint of a teacher, the students' role in the learning process becomes passive; while on the other hand, a student who learns under the guidance of a facilitator plays an active learning role. Social constructivism theory therefore advocates for a major paradigm shift, with emphasis turning away from the content and the instructor towards the student (Gamoran, Secada, & Marrett, 1998). Brownstein (2001) points out that, the dramatic role shift from teacher to facilitator calls for the facilitator to possess and exhibit an entirely different set of skills. While the teacher tells, the facilitator is expected to ask; while the teacher conducts lectures from the front of the classroom, the facilitator offers support from the back; while the teacher provides answers, the facilitator offers guidelines while creating an environment for students to arrive at their own conclusions; while the teacher spends

most of the time giving monologues, the facilitator is often engaged in dialogue with the students (Rhodes & Bellamy, 1999). The shift to CBC in Kenya is characterized by a major change in the role of the teacher – from that of an instructor to a facilitator.

The social constructivist approach to learning is directly related to the concept of competency-based education, which in reality is the same thing but in another language of explanation. The idea concurs with that of Kimaro (2012) who states that competency based education practice is intended to build knowledge, skills, attitudes and competencies to the learner so that the learner can use them to solve problems in daily life. Just like in Dewey's Social Constructivism theory, CBC is all about what the learner can do practically and important but not the quantity of theoretical knowledge that the learners memorize.

### **1.10 Conceptual Framework**

The study investigated the constraints facing the implementation of the competency based curriculum in Machakos County, Kenya. Figure 2 presents the conceptual framework of the study. The study focused on four factors that could affect the implementation of the competency-based curriculum. The first of these is teacher factors, specifically their knowledge, ICT training, beliefs and attitudes. Researchers such as Shriner, Schlee and Libler (2010) have shown that the perceptions, attitudes and beliefs of teachers towards curriculum change determine the support that they give to its implementation.



Independent variables

Intervening variables

Dependent variable

**Figure 1.2: Conceptual framework on challenges facing implementation of CBC**

**Source:** Researcher (2019)

Teachers must also be trained on the new curriculum in order to implement it effectively. The second component is infrastructural resources such as textbooks, physical facilities and other learning resources that are required for the competency-based curriculum to be implemented. Schools lacking such resources would find it difficult to effectively implement the new curriculum. Implementation of the CBC could also be influenced by government support factors such as communication with schools, monitoring and evaluation of implementation process, and the amount of government support to schools in terms of finances and other resources. These four factors were the independent variables of the study.

The dependent variable of the study was the effectiveness with which competency-based curriculum was being implemented in Machakos County, as reflected through the competency of teachers in implementing CBC and learner competency in application of knowledge, values, attitudes and skills. The intervening variables of the study included teacher preparation for CBC and their years of teaching experience. It was expected that the extent to which teachers had been trained on the implementation of curriculum-based education would influence their attitudes towards CBC and their effectiveness in implementing the new curriculum. The indicators of successful implementation of CBC included the following: a) Learner focused – curriculum focuses more on education and learning and less on the school and the system; b) Focus on competencies – more focus is directed to competencies. Ultimately the goal should be on the appropriate application of knowledge, and not just knowledge acquisition; c) Opportunities for local decision making and greater depth of study – greater flexibility for the teacher is emphasised; d) Balance between

formative and summative assessment – a range of assessment that focuses on the development of learning outcomes, cross-curricular competencies, literacy and numeracy are adopted; e) Digital-based learning: The design of the curriculum within a collaborative digital application enables it to be improved continuously and supports learning with flexible timing and pacing through a range of learning environments; f) Collaborative and co-development models – co-creation of the curriculum with partners and stakeholders taps into local expertise to enhance its design and development; and g) Synchronous development – an integrated approach to develop programmes of study, assessment, learning and teaching resources supports a common approach that encourages interdisciplinary learning.

### **1.11 Definition of Terms**

**Competency:** Refers to the capabilities needed to act in particular contexts, including cognitive skills, knowledge, attitudes, values, and practical skills and motivation needed to perform a given task.

**Competency-based curriculum:** Refers to a program of study which places emphasis on equipping learners with knowledge, skills and attitudes to be applied by learners and not merely what students are expected to learn about.

**Competency-based education:** Refers to a system of teaching, assessment, and grading whose main focus is ensuring learners demonstrate that they have gained the intended knowledge and skills in the course of their interaction with the schooling process.

**Constraints:** Refers to any factors that limit or restrict the success of schools in implementing the competency based curriculum.

**Curriculum:** Refers to all the learning which is planned and guided by the school, whether such learning takes place in group or individual settings, and whether the learning takes place outside or inside the school.

**Curriculum implementation:** Refers to the phase of the curriculum process in which the student, under the guidance of a teacher, engages in learning activities that maximize learning with a view to develop, in the learner, new behaviour or new approach to issues.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

This chapter provides the review of literature related to the constraints facing the implementation of the competency based curriculum. The chapter covers educational outcomes of a competency- based curriculum, challenges facing the implementation of competency based curriculum and strategies for effective implementation of competence-based curriculum. Finally the chapter gives the summary of the literature reviewed.

#### **2.2 Educational Outcomes of a Competency-Based Curriculum**

Curriculum has been defined as the totality of all school experiences, the materials expected to be learned, the behaviours expected to be nurtured, the nature of the processes, techniques and approaches or methods employed, as well as all the relevant facilities and equipment needed to accomplish this. Curriculum development and implementation is a dynamic process as it responds to changes in the society which it services. Changes in the curriculum take place in response to the changing needs that the society views as necessary for the wellness of the general population. In other words, changes in the curriculum are a result of reforms in the existing curriculum, which arises as the old curriculum loses relevance in dealing with the problems of the society (Igbokwe, Mezieobi & Eke, 2014).

The process of curriculum change entails changes in the content, goals, as well as resources for the teaching and learning process, in order to address deficiencies or

inadequacies of the existing curriculum (Pretorius, 1999). The process of curriculum change leads to infusion of new ideas – be it cultural, political, social, economic or technological – leading ultimately to strengthened school processes, both internal and external. At the heart of curriculum change is the need to align education process with the needs of the populace and national development goals (Alibi & Okemakinde, 2010). It is this search for quality education for Kenyans that led to a move from the current 8-4-4 curriculum to competency-based curriculum (Republic of Kenya, 2017).

The move by the Kenya Institute of Curriculum Development to shift away from the traditional knowledge-based model to the competency-based education, is aimed at developing in learners the habits of independence and lifelong learning; inculcating appropriate values, skills and knowledge for application to real-life situations. This is based on the growing realization around the world of the potential of competency-based education to build in learners the essential capabilities and competencies necessary for success in the knowledge-based economy of today (Darling--Hammond, 2012).

The historical root of competency-based education (CBE) can be traced back to the 1950s in the US (Morcke, Dornan & Eika, 2013). The term Competence-based education was derived from the notion of mastery learning and criterion-reference assessment. Competency-based education gives a personalized approach to learning and awards credit to learners based on their demonstration of mastery of competencies, without considering the length of time taken for that learning to take place (Surr & Rasmussen, 2015). According to Le, Wolfe and Steinberg (2014),

there is a high level of learning expectation for students in a competence-based model, with each learner taking responsibility for reaching the established learning goals (competencies). In a competency-based education model, educators seek to ensure success for all learners in meeting learning targets by providing highly personalized opportunities for learning and supporting and allowing learners to study at different times and places. Learners are assessed when ready, and they progress at their own pace.

One benefit of competency based programmes is flexibility since the structure of CBE is dependent on the individual learner (Surr & Redding, 2017). Competency-based education does not have rigid schedules, and there no set classes or semesters. Instead, learners have the freedom to direct their learning and determine when they will complete programmes or take assessments. The flexibility of competency-based education can also be seen in the fact that it allows learners to join a programme at any level at what point they are awarded credit for previous experiences. Another key benefit of competency-based education is that learning under this model revolves around real-life skills and the development of competencies (Bral & Cunningham, 2016). When designating CBE programs, the educator puts in mind the competencies needed by learners to succeed in a particular career and making sure that the all materials are relevant. This ensures that learners graduate from the programme when they are workplace-ready and have gained expertise in their chosen careers.

In competency-based model, the main is the final outcome as opposed to the journey. Focusing on the final outcome allows each learner to control his or her

pacing because the learner is not confined by a set learning process. Learners take an assessment when they feel that they are ready and can prove mastery, after which they are given credit and they commence on the next material. Learners move as fast or as slow as they wish, and they complete a given level only when ready. Competency-based education is also credited with increasing learner engagement because students have ownership over their learning (Gardner, 2017). Under CBE, students become empowered since they have control over how, where and when they study. The CBE model is considered a truly personalized experience as it encourages individualized learning and promotes the use of diverse learning styles. The CBE model leads to increased student engagement since content is more relevant and is tailored to each learner.

### **2.3 Challenges facing the Implementation of Competency Based Curriculum**

Researchers from different parts of the world have investigated on the challenges faced in the process of curriculum implementation. In Tanzania for instance, Makunja (2016) carried out a research to find out the challenges facing teachers in the implementation of the competency-based curriculum in secondary schools. The study, which was a case study that utilized a qualitative research approach, had a sample of 102 teachers, six school principals and six academic masters/mistresses drawn from six public secondary schools in Tanzania's Morogoro Municipality. The study used questionnaires and interview schedules to collect data, which were analyzed using content analysis. The study found out that teachers faced a number of constraints which negatively affected the effectiveness of implementation of the

competency-based curriculum. The challenges faced included inadequate in-service training of teachers on issues related to CBC, overcrowded classrooms, lack of teaching and learning resources, and lack of readiness by learners to accept learner-centred approach. Makunja (2016) recommended that, for effective implementation of CBC to be possible, teachers as the primary agents of curriculum implementation ought to be afforded the opportunity to actively participate in the process of curriculum review and formulation. Makunja (2016) further recommended that the Ministry of Education ensure that schools are provided with all the relevant teaching and learning resources. This study sought to find out whether similar challenges to those reported by Makunja (2016) in Tanzania are being experienced in Kenya.

Dzimiri and Marimo (2015) assessed the problems associated with in the implementation of a localised Advanced Level Geography syllabus in Zimbabwe. The study used a mixed methods research design following a post-positivist framework. Data for the study was gathered using questionnaires and interview schedules. The research participants were teachers, students, and education officers from 12 schools, which were sampled using stratified random sampling from among low-density high schools, rural day schools, high-density high schools and mission schools. The results of the study showed that most of the teachers used teacher-centred teaching approach, the schools had inadequate instructional resources, most teachers faced syllabus interpretation challenges, while the learners showed negative attitudes toward some topics in the syllabus. In this study, the focus was on competency-based curriculum to find out whether teachers were facing any constraints related to the use of learner-centred approach.

Chand (2015) conducted a study to determine the challenges experienced by curriculum developers in the process of implementation of multilingual education in Fiji. The study employed a qualitative research approach using the phenomenological method of study. The study utilized interview schedules as the primary data collection instruments. Findings of the study revealed that the process of Curriculum development and implementation was highly influenced by administrative and political factors. The staff members charged with the responsibility of curriculum development suffered lack of autonomy to do their job effectively, they did not have the requisite skills, the staff members were hired irregularly, high staff turnover, and there was inadequacy of resources. These factors made it difficult for the multilingual education program to be effectively implementation in Fiji. This study aimed at finding out whether similar challenges as those experienced in Fiji are being faced as the competency based curriculum ins being implemented in Kenya.

In Nigeria, Odey and Opoh (2015) investigated on the perceptions of teachers regarding the challenges faced in implementation of the curriculum in tertiary colleges. The study sample comprised of 480 purposively selected teachers of tertiary institutions in Cross River State. Data was collected using a validated questionnaire. The data were subjected to statistical analysis using frequencies, means and ranking. The findings revealed that the most frequently occurring problems in curriculum implementation included lack of a curriculum implementation monitoring strategy, government failure to offer training to teachers on curriculum implementation strategies, learners craving for success in

examinations at all costs even without working hard, lack of motivation among tutors, and failure by tutors to focus on teaching responsibilities as they spend more time on scholarly research. Odey and Opoh (2015) recommended that the faculty deans and departmental heads take seriously the role of monitoring tutors, and that the curriculum be reviewed to align with the contemporary needs of the society.

In Kenya, a study by Kahera (2010) sought to find out the factors influencing the implementation of the curriculum in secondary schools in Kakamega South District. The study sample was drawn from thirteen schools which were sampled using stratified random sampling. Respondents for the study included 13 principals, 174 students and 75 teachers who were randomly sampled from the selected schools; and 3 education officers from Kakamega South District Education office. Data was gathered using questionnaires and interview guides. The main factors identified to be affecting curriculum implementation included under-staffing in the schools, lack of in-service training for teachers, uneven distribution of teachers in the schools, lack of support from parents and the local community on issues related to curriculum implementation, inadequate teaching and learning facilities and infrastructure, and drug and substance/alcohol abuse. The researcher made a recommendation that the TSC should post more staff to schools and ensure regular in-service training for the teachers.

#### **2.4 Strategies for Effective Implementation of Competency Based Curriculum**

Teachers, like any other professionals, face change regularly in the course of their professional lives (Lovat & Smith, 2003). Education is said to be in a constant state

of flux, and the changes taking place in the sector place considerable pressure on teachers (Barton, Garvis & Ryan, 2014). The introduction of a new curriculum, such as the competency-based curriculum in Kenya, is a change that is clearly going to place pressure on teachers. The effectiveness with which a new curriculum is implemented is dependent on the way its implementers – the teachers – interpret it. Yet, in many cases the teacher is largely ignored when it comes to curriculum review and design, being expected to implement the end product without questioning (Kasapoglu, 2010). This is despite the fact that teacher attitudes are a vital component of successful curriculum change (Igbokwe, Mezieobi & Eke, 2014). In this study, one of the research aims was to find out the attitudes of teachers and their beliefs about competency based curriculum.

When teachers feel that they were neglected during curriculum review and design, they may end up resisting the implemented changes, thereby compromising the effectiveness of curriculum implementation in terms of goals, the content, teaching-learning process, assessment and resource utilization. Change in any organisation has been associated with feelings of suspicion, fear of the unknown and dissatisfaction. Therefore, for a curriculum to be changed successfully there is need to change the teachers who are the primary agents of change (Kasapoglu, 2010).

Curriculum changes bring a lot of concerns to the teachers which might influence their attitudes regarding the curriculum change implementation. One of such concerns pertains to the teachers' perception about their ability to successfully implement the demands of the new change as well as the pressure related to their daily duties and lack of resources to adequately implement the change

(Charalambous & Philippou, 2010). This fear of the unknown may obviously increase the teachers' resistance to the change or inform their negative attitude to the change. The teachers' attitudes to curriculum change may also be informed by their concern about the influence of the new curriculum on their school culture (Ibrahim, Al-Kaabi & El-Zaatari 2013). This usually occurs when the teachers are not sure whether the norms and values represented by change are in agreement with their school culture, otherwise it will be resisted.

In Australia, Barton, Garvis and Ryan (2014) note that the Australian national curriculum was implemented using a staggered rollout approach, with certain curricular areas being introduced in different phases. The education departments of different states are given the responsibility for curriculum implementation, and the departments develop their unique curriculum implementation approaches and strategies. For example, in Queensland the education department prepared their own curriculum implementation materials referred to as *Curriculum into the Classroom* (C2C) for use by all schools under their jurisdiction. Barton *et al.* (2014) carried out a study of the views of various education stakeholders in Queensland regarding how the C2C materials were being implemented in the state. The researchers showed that in most cases there were contradictions regarding how the C2C curriculum materials were being used in different schools. Barton *et al.* (2014) blamed this on the assumption by the curriculum designers that there is a one-size-fits-all approach that can be used in all schools. The researchers argued that this is erroneous, proposing instead that teachers be given a voice in the way in which curriculum implementation takes place.

Teachers are the critical agents of change during the implementation of a new curriculum (Gerrard & Farrell, 2014). The knowledge, attitudes and beliefs of teachers play significant roles in the effective implementation of a new curriculum (Briant & Doherty, 2012). Tong (2010), in a research carried out in Hong Kong, established that other than the knowledge, attitudes and beliefs of teachers, the tension experienced by teachers between their personal beliefs and the orientation of the curriculum change, as well as their ability to understand the curriculum documents are also some of the barriers to effective curriculum change implementation.

The teachers' inadequate content knowledge and classroom practices are most often blamed for the failures in curriculum change implementation (Gerrard & Farrell, 2014), but the failures encountered in curriculum change implementation cannot be attributed to the lack of content knowledge needed to implement the curriculum change alone, rather it can also be attributed to factors relating to the teachers formulating their own meanings and attitudes when the reform documents are introduced to them, which may lead to their ignoring or resisting the change (Park & Sung 2013). Some teachers view curriculum change as merely intensifying their workload without providing any change benefit. It is therefore important that understanding what the teachers perceive as the purpose of the curriculum change is crucial to successful curriculum change implementation.

Based on a review of research, Ryder and Banner (2013) found that a significant number of researches have revealed that even when teachers have the pedagogical expertise and appropriate knowledge, this may not be a guarantee that curriculum

change will be successfully implemented., but external factors relating to the curriculum reform, personal factors relating to teacher identity; who they see themselves as and their teaching goals, as well as internal factors relating to work environment, all play significant roles in the successful curriculum change implementation.

Another factor which may contribute to curriculum change implementation success or failures are the teachers' attitudes towards the change and how they implement the change in their classroom practices (Ha, Wong, Sum & Chan, 2008). Although implementation of curriculum change has been shown to be highly related to the teachers' changing their attitudes towards the curriculum change, few studies have suggested that how the teachers receive the change and their capacity to implement the change is crucial (Ha *et al*, 2008). As curriculum change implementers, teachers are expected to develop a new set of capacities and skills necessary for curriculum change implementation (Qian & Walker, 2013). Teacher professional development therefore becomes necessary for curriculum change implementation. Many scholars argue that although professional development in itself is not the sole reason for the failures of curriculum change implementation, it does play an important role because it ensures an up-to-date knowledge of the curriculum materials and also provides new skills needed to ensure appropriate implementation (Spillane, Healey & Parise, 2009).

## **2.5 Summary of Literature Review**

This chapter presented a review of literature related to the study on the constraints facing the implementation of the competency based curriculum. The reviewed literature shows that the move from the traditional subject/content-based education to competency-based education is informed by the need to expand the competences and capabilities that are considered essential to success not only in academia but also in the modern knowledge-based economy. The literature review covered the challenges facing the implementation of competency based curriculum, which include teacher factors (their knowledge, beliefs and attitudes), infrastructural resources (textbooks, physical facilities and other learning resources), community factors (community involvement and support, parental monitoring of learner progress), and government support (communication with schools, monitoring of implementation process, and government support to schools). Also discussed in the chapter are the strategies that can be employed for effective implementation of competency-based curriculum. Probably because competency-based curriculum started being implemented recently in Kenya, there were few, if any studies on the constraints facing principals and teachers while implementing this curriculum. Yet, such research is needed in order to advise the Ministry of Education and schools on how to address the challenges when they occur. For this reason, the current study sought to investigate on the constraints facing the implementation of the competency based curriculum in Kenya, and specifically Machakos County.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter explains the methods that were used in conducting the research. Specifically, the chapter describes the research design to be used for the study, targeted population, sample size and the sampling techniques, data collection instruments, methods of confirming validity and reliability of the instruments, procedures for data collection, data analysis procedure and finally ethical considerations of the study.

#### **3.2 Research Design**

Research design refers to an outline that shows how solutions to a problem of study are to be arrived at (Leedy & Ormrod, 2010). In this study, the descriptive survey design was used. According to Orodho (2012), the term descriptive survey design refers to a strategy of gathering data by observing and describing the behaviour of a subject without influencing it in any way. Descriptive survey design is employed when collecting data regarding the attitudes, opinions, habits among other social issues prevalent in a given population. The descriptive survey design is normally used to gather information that is considered useful for evaluation of current practices to serve as a basis for making decisions. Descriptive design was considered relevant to this study since the researcher only reported the situation facing the implementation of the competency-based curriculum in Machakos County without active manipulation of study variables.

### **3.3 Study Localé**

This study was carried out in Machakos County. The County is among the eight counties forming the Eastern region of Kenya. The county is bordered to the North by Kiambu, Murang'a, and Embu counties; to the West by Kajiado and Nairobi city counties; to the South by Makueni County, to the East by Kitui County. At the time the study was conducted, Machakos County had 1,736 Early Childhood Development (ECD) centres, 828 primary schools and 351 secondary schools. Machakos County was chosen for the study because it is one of the Counties where competency-based curriculum was piloted. Machakos County has a balanced distribution of schools, with some in urban settings with well developed infrastructure such as roads and electricity while others are in rural areas characterized by poverty and poor infrastructure.

### **3.4 Target Population**

The term population is defined as a group of individuals who possess the same characteristics (Creswell, 2012). In this study the target population comprised of all the 8,320 teachers and 828 headteachers in the 828 public primary schools in Machakos County. The study also targeted the eight (8) sub-County Directors of Education in Machakos County. The study was conducted in public primary schools because CBC was piloted in public primary schools of different categories – day, day and boarding, boarding, single sex and mixed gender schools.

### **3.5 Sample Size and Sampling Procedure**

According to Orodho (2010), a sample is defined as a small portion of a given population which contains characteristics that are representative of the larger

population. Sampling technique refers to a definite plan for obtaining a sample from a given population (Kothari, 2004). From the targeted population of 8,320 teachers, the researcher used the sample estimation table developed by Kathuri and Pals (1993) showing suitable sample sizes for given finite populations such that the sample will be within plus or minus 0.05 of the population proportion with a 95 percent level of confidence. From the table by Kathuri and Pals (1993) (Appendix G), a minimum sample of 367 should be selected from a target population of 8,320 teachers.

A sample of 367 teachers was drawn from grades one to three where CBC was being implemented. The study used proportionate stratified random sampling to sample the 367 teachers, with stratification done relative to the 8 sub-counties. In this method of sample selection, the sample size from each stratum is proportionate with the stratum size (the 8 sub-counties in this study) in such a way that each sampling unit represents the same number of units in the target population (Lohr, 2010). Due to the large number of primary schools in Machakos County, the researcher sampled ten percent of the schools in line with Gay and Airasian (2003), who recommend that a sample of 10 to 20% is sufficient for educational research. This means that 10% of the 828 schools were sampled, giving a total of 83 schools, as recommended by Gay and Airasian (2003). Stratified random sampling was used to select the schools from each of the 8 sub-Counties in Machakos County. All the 83 headteachers from the sampled schools were purposively selected to take part in the study. In addition, purposive sampling was used to select three education officials from Machakos County Education office. As such, the sample size comprised of 83 headteachers,

367 teachers, and 3 education officers, making a total of 453 respondents. Table 1 shows the sample distribution for the study.

**Table 3.1: Population and sample distribution of schools, headteachers and teachers**

| <b>Sub-County</b> | <b>Primary schools</b> | <b>No. of teachers</b> | <b>Sample (4.4%) teachers</b> | <b>10% of schools</b> | <b>Sample of headteachers</b> |
|-------------------|------------------------|------------------------|-------------------------------|-----------------------|-------------------------------|
| Mwala             | 110                    | 1,560                  | 69                            | 11                    | 11                            |
| Machakos          | 198                    | 1,130                  | 50                            | 20                    | 20                            |
| Yatta             | 86                     | 979                    | 43                            | 9                     | 9                             |
| Masinga           | 94                     | 956                    | 42                            | 9                     | 9                             |
| Matungulu         | 79                     | 941                    | 42                            | 8                     | 8                             |
| Kangundo          | 95                     | 930                    | 41                            | 9                     | 9                             |
| Kathiani          | 90                     | 914                    | 40                            | 9                     | 9                             |
| Athi-River        | 76                     | 910                    | 40                            | 8                     | 8                             |
| <b>Total</b>      | <b>828</b>             | <b>8,320</b>           | <b>367</b>                    | <b>83</b>             | <b>83</b>                     |

### **3.6 Data Collection Instruments**

Four instruments were used for data collection: a questionnaire, an interview schedule, a document analysis guide, and an observation checklist.

#### **3.6.1 Questionnaires**

The questionnaire was utilised to collect data from headteachers and teachers. According to Kothari (2004), the questionnaire is the most common tool used for purposes of data collection. The extensive use of questionnaires for data collection is because by using this instrument, it is possible to gather large amounts of data within a considerably short amount of time. The questionnaire used in this study

consisted of both close ended and open ended questions and it was divided into four sections. Section A of the questionnaire captured background information of the study respondents. Section B captured the constraints facing the implementation of the competency based curriculum. Section C covered measures that can be put in place to facilitate implementation of the competency based curriculum while section D captured recommendations on the way forward on the implementation of the competency based curriculum.

### **3.6.2 Interview Schedule**

The interview schedule was employed to conduct face-to-face interviews with the sub-County Directors of Education on matters regarding implementation of the competency based curriculum in Kenya. The interview schedules were used because of their advantages when data is being collected from a small number of respondents; interview schedules are useful to obtain detailed information about personal feelings, perceptions and opinions; they allow more detailed questions to be asked; they usually achieve a high response rate; and respondents' own words are recorded. The researcher used interviews to get in-depth information on the subject under study.

### **3.6.3 Document Analysis Guide**

Document analysis guide was used to observe the various professional documents used by teachers in curriculum implementation such as lesson plans and schemes of work. This enabled the researcher to determine whether the teachers were effectively implementing the competency-based curriculum.

### **3.6.4 Observation Checklist**

The study also used an observation checklist to assess the adequacy of teaching and learning resources and physical facilities in the primary schools. An observation checklist is a set of questions used to evaluate the adequacy of resources available in an educational institution. Observation checklists assist an observer to identify resource gaps and problem areas to further improve the provision of teaching and learning resources such as classrooms, desks, textbooks, latrines, playgrounds and offices.

### **3.7 Pilot Study**

Before carrying out the actual study, a pilot study was carried out in 5 primary schools in with similar characteristics to the targeted population, but which were not involved in the final study. The pilot study respondents were 5 headteachers and 10 teachers, a total of 15 respondents. The aim of the pilot study was to assist the researcher determine and make improvements on the reliability and validity of the data collection instruments, as well as become familiar with the process of data collection.

#### **3.7.1 Reliability**

According to Mugenda and Mugenda (2003), the term reliability is used to refer to the assessment of the extent to which a research tool gives results that are consistent after a number of trials. In this study, the researcher employed test-retest method of testing reliability. In test-retest procedure, the data collection instrument was given twice to the pilot study participants, with an interval of about one week. After the two administrations of the questionnaire, the two sets of responses were correlated

using the Pearson Product-Moment Correlation formula. The researcher obtained a reliability coefficient of 0.814, which was an indication that the study instrument was reliable.

### **3.7.2 Validity**

Validity according to Wong, Ong and Kuek (2012) refers to the extent to which an instrument measures the constructs it purports to measure. According to Kimberlin and Winterstein (2008) validity is established by expert judgement. Thus, the questionnaires and interview schedules were constructed in close consultation with the university supervisors, whose expert guidance helped to improve validity of the instruments.

### **3.8 Data Collection Procedure**

The researcher obtained an introduction letter from the Department of Education in Kenyatta University. Thereafter, a research permit was obtained from the National Council of Science and Technology (NACOSTI). Once the permit was granted, the researcher sought consent from the County Education Officer, Machakos County to enable him access the public primary schools within Machakos County. The researcher then booked appointment with the respondents through the school headteachers. The researcher personally administered questionnaires to the teachers and headteachers and gave them time frame within which they were required to respond to the questionnaires. Upon completion, the researcher collected the filled in questionnaires for data analysis.

### **3.9 Data Analysis**

Once all the data are collected from the field, the data was cleaned in order to improve on accuracy and completeness of the data set. The next step was data coding, which was done prior to computer data entry for analysis using the Statistical Package for Social Sciences (SPSS) Version 20. The study used both quantitative and qualitative methods of data analysis. The quantitative data was analysed using various descriptive statistical analysis procedures such as frequency distributions, percentages, the mean and the standard deviation. The outcomes of data analysis were summarized for reporting by use of frequency tables, contingency tables, pie charts and bar graphs.

The qualitative data obtained through interview guides, document analysis and observation checklists was analysed using content analysis, discourse analysis and framework analysis. Content analysis entailed categorization of verbal data from the interviewees in order to classify, summarize and tabulate the data. Discourse analysis is a method of analysis of naturally occurring talk and all types of written text, and was used to thematically summarize the data arising from document analysis. Framework analysis was used in order to systematically analyse all the qualitative data, and followed a number of stages including familiarization, identifying a thematic framework, coding, charting, mapping and interpretation.

### **3.10 Ethical Considerations**

According to Stringer (2003), ethical issues of in research should be raised to protect well being and interest of research participant. The research design should therefore include procedures that ensure the safety of the participants. Before collecting data

from the field, an introduction letter was obtained from the University in order to procure a research permit from NACOSTI. The County Education Officer was also notified of the intention to conduct research in Machakos County. The researcher informed beforehand all respondents of their freedom to accept or reject participation in the study, and that they would not be penalized for failure to take part. Assurances were made to respondents that the data collected would be held and treated in confidence. Identity of the participants and their schools were not revealed to anyone. All the data was inspected to ensure that it was entered on the computer correctly.

## **CHAPTER FOUR**

### **DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents data analysis, interpretation and discussion of the study findings. The main objective of the study was to investigate the constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya. The chapter is organized into six sections. The first section presents questionnaire return rate. The second part consists of background information of the study respondents whereas the remaining four sections contain findings of the study based on the following research objectives.

- i. To establish the teacher factors affecting the implementation of the competency based curriculum in Machakos County.
- ii. To determine the effects of available infrastructure on the implementation of the competency based curriculum in Machakos County.
- iii. To find out the effects of government support on the implementation of the competency based curriculum in Machakos County.
- iv. To determine the intervention measures necessary for ensuring prudence in the implementation of the educational reforms.

#### **4.2 Questionnaire Return Rate**

To get data for the study, the researcher administered questionnaires to 83 headteachers and 367 teachers from public primary schools in Machakos County. Among them, 78 headteachers and 342 completely filled and returned their questionnaires, giving a total of 420 study respondents. This proportion is

equivalent to 93.3% questionnaire return rate. According to Mugenda and Mugenda (2003), a 50% response rate is adequate for data analysis and reporting, 60% is good and above 70% is excellent. The researcher further conducted interviews with 3 education officers from Machakos County on matters regarding implementation of the competency based curriculum.

### 4.3 Background Information of the Study Respondents

The information captured in this section includes respondents' gender, highest academic qualifications, working experience and the number of streams in the sampled schools. Table 4.1 shows respondents' gender.

**Table 4.1: Respondents' gender**

| Gender       | Headteachers |              | Teachers   |              |
|--------------|--------------|--------------|------------|--------------|
|              | Frequency    | Percent      | Frequency  | Percent      |
| Male         | 46           | 59.0         | 155        | 45.3         |
| Female       | 32           | 41.0         | 187        | 54.7         |
| <b>Total</b> | <b>78</b>    | <b>100.0</b> | <b>342</b> | <b>100.0</b> |

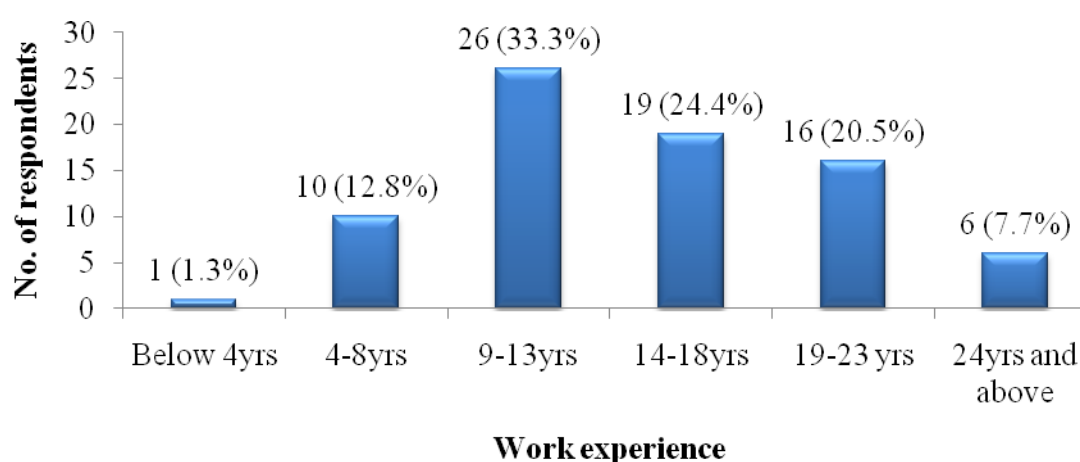
As shown in table 4.1, out of 78 headteachers, 46 (59.0%) were male and 32 (41.0%) were female. Among the teachers, 155 (45.3%) were male and 187 (54.7%) were female. This shows that most of the headteachers who took part in the study were male while majority of the teachers were female.

Table 4.2 depicts respondents' education qualifications.

**Table 4.2: Respondents' education qualifications**

| Highest education level | Headteachers |              | Teachers   |              |
|-------------------------|--------------|--------------|------------|--------------|
|                         | Frequency    | Percent      | Frequency  | Percent      |
| Masters                 | 26           | 33.3         | 0          | 0.0          |
| Bachelors Degree        | 0            | 0.0          | 22         | 6.4          |
| B.Ed                    | 31           | 39.7         | 62         | 18.1         |
| Diploma                 | 10           | 12.8         | 20         | 5.8          |
| P1                      | 11           | 14.1         | 238        | 69.6         |
| <b>Total</b>            | <b>78</b>    | <b>100.0</b> | <b>342</b> | <b>100.0</b> |

Data presented in Table 4.2 shows that 26 (33.3%) headteachers had attained Masters' qualifications, 31 (39.7%) had Bachelor in Education, 10 (12.8%) had diploma and 11 (14.1%) had P1 qualifications. Among the teachers, 62 (18.1%) had bachelor in Education, 20 (5.8%) had diploma and 238 (69.6%) had P1 qualifications. This shows that headteachers had attained higher education qualifications as compared to the teachers. Majority of the headteachers had attained masters and bachelor in education degree whereas most of the teachers had attained P1 qualifications. Figure 4.1 depicts headteachers' experience in headship.



**Figure 4.1: Duration served as the school head**

Results presented in Figure 4.1 indicates that majority of the headteachers (57.7%) had worked as the school heads for a duration ranging between 9 and 18 years.

Table 4.3 shows number of streams in the sampled schools.

**Table 4.3: Number of streams**

| Streams      | Headteachers |              | Teachers   |              |
|--------------|--------------|--------------|------------|--------------|
|              | Frequency    | Percent      | Frequency  | Percent      |
| One          | 19           | 24.4         | 79         | 23.1         |
| Two          | 43           | 55.1         | 263        | 76.9         |
| Four         | 16           | 20.5         | 0          | 0.0          |
| <b>Total</b> | <b>78</b>    | <b>100.0</b> | <b>342</b> | <b>100.0</b> |

The findings presented in Table 4.3 illustrates that 19 (24.4%) headteachers said that their schools had one stream, 43 (55.1%) cited two streams and 16 indicated four streams. Among the teachers, 79 (23.1%) indicated one stream and 263 (76.9%) teachers indicated two streams. This shows that most of the sampled schools had two streams.

#### **4.4 Teacher Factors Affecting the Implementation of the Competency Based Curriculum**

The first objective of the study was to establish the teacher factors affecting the implementation of the competency based curriculum in Machakos County. To address this objective, a 5-point Likert scale comprising of 10 items measuring teachers' knowledge on CBC was used. The study respondents were required to

indicate their level of agreement or disagreement in each item on the scale. The scale ranged from 1 to 5 with 1 representing strongly disagree, 2 denoting disagree, 3 undecided, 4 agree and 5 strongly agree. The midpoint of the scale was a score of 3. Therefore, scores above 3 denoted that respondents agreed with the item on the scale while score below 3 signified that respondents disagreed with the item on the scale. Presented in Table 4.4 are the findings of the analysis.

**Table 4.4: Headteachers' responses on teachers' knowledge on CBC**

| <b>Knowledge on CBC</b>   | <b>Mean</b> | <b>Std. Dev.</b> |
|---|-------------|------------------|
| More research on CBC is needed before it can be implemented successfully                                      | 4.59        | .495             |
| Most of my teachers are still confused by the new terminology of CBC  | 4.01        | .875             |
| Teachers in my school find it difficult to adapt their teaching styles to a child's individual learning style | 3.73        | .963             |
| I will be able to judge if students have achieved the learning outcomes of CBC                                | 3.54        | .784             |
| My teachers were given clear guidelines as to how students can be transformed from passive to active learners | 3.32        | 1.099            |
| My knowledge of CBC is good   | 3.29        | 1.415            |
| My knowledge of the assessment techniques for CBC is good   | 2.94        | .972             |
| Teachers in my school have received adequate training on CBC  | 2.74        | 1.333            |
| Teachers in my school do not understand the principle of continuous assessment                                | 2.73        | .921             |
| The teachers in my school are well prepared for CBC   | 2.73        | 1.002            |

As shown in Table 4.4, the mean scores obtained by the headteachers' on teachers' knowledge on CBC ranged from 2.73 to 4.59 with a standard deviation of 1.002 and 0.495 respectively. The highest ranked statements were "more research on CBC is needed before it can be implemented successfully (4.59)" and "most of my teachers are still confused by the new terminology of CBC (4.01)". On the other hand, the lowest ranked statements were "teachers in my school are well prepared for CBC (2.73)" and "teachers in my school do not understand the principle of continuous assessment (2.73)". From the study findings, it is clear that most teachers were not fully equipped with skills and knowledge on CBC. Majority of the headteachers approved that teachers in their current schools were still confused by the new terminology of CBC; they still find it difficult to adapt their teaching styles to a child's individual learning style, they have not yet understood the principles of continuous assessments and they have not yet received adequate training on CBC. In agreement with the findings, Kyafulilo, Rugambuka and Ikupa, (2012) in their study discovered that most schools lacked well qualified and expert teachers to implement CBET system. These researchers found out that, to a large extent teachers still teach using traditional instructional approach and students learn through memorization. In another study, Makunja (2016) established that teachers faced a number of constraints which negatively affected the effectiveness of implementation of the competency-based curriculum. The challenges faced included inadequate in-service training of teachers on issues related to CBC, overcrowded classrooms, lack of teaching and learning resources, and lack of readiness by learners to accept learner-centred approach. Table 4.5 shows teachers' responses on their knowledge on CBC.

**Table 4.5: Teachers’ responses on their knowledge on CBC**

| <b>Knowledge on CBC</b>  | <b>Mean</b> | <b>Std. Dev.</b> |
|--|-------------|------------------|
| I am able to judge if students have achieved the learning outcomes of CBC  | 4.13        | .750             |
| More research on CBC is needed before it can be implemented successfully   | 4.05        | .858             |
| In the CBC teacher training I have received, clear guidelines were given as to how students can be transformed from passive to active learners | 3.60        | 1.277            |
| I am confused by the new terminology of CBC  | 3.50        | 1.024            |
| I find it difficult to adapt my teaching style to a child's individual learning style  | 3.11        | 1.091            |
| I feel well prepared for CBC   | 2.94        | 1.362            |
| My knowledge of CBC is good  | 2.22        | .999             |
| My knowledge of the assessment techniques for CBC is good  | 2.20        | 1.067            |
| I have received adequate training on CBC   | 1.91        | 1.048            |
| I do not understand the principle of continuous assessment   | 1.78        | .894             |

Data presented in Table 4.5 indicates that the mean scores obtained by the teachers on their knowledge on CBC ranged from 1.78 to 4.13 with a standard deviation of 0.894 and 0.750. The highest scored statements were “I will be able to judge if students have achieved the learning outcomes of CBC (4.13)” and “more research on CBC is needed before it can be implemented successfully (4.05)”. The lowest ranked statements were “I do not understand the principle of continuous assessment

(1.78)” and “I have received adequate training on CBC (1.91)”. These findings showed that majority of the teachers confirmed that they were not well prepared for the implementation of new curriculum. A significant number of them cited that they were still confused by the new terminology of CBC. They felt that it was still difficult to adapt their teaching style to a child's individual learning style, and that the training they had received, knowledge on CBC and assessment technique was inadequate.

To verify the above findings, the researcher conducted interviews with the education officers in Machakos County. The researcher noted that in the sampled schools, the implementation of competency based education was on-going. However, all the three officers said that they were faced with a number of challenges. One of the major challenges highlighted was that teachers were not fully equipped with the knowledge and skills on competency based curriculum and hence hindering successful implementation of the programme. As quoted from one of the education officers

*“Teachers are moderately equipped with the necessary skills. Majority of them felt that the training is not adequate because it is carried out hurriedly (Education Officer 1).”*

Additionally, they said that some teachers are rigid to change from content based curriculum to competency based curriculum. As quoted from another education officer:-

*“There is need for an advocate for change of attitude among the teachers to embrace competency based curriculum. Some teachers are very rigid to change (Education Officer 1).”*

Another one said that

*“The delay in the national roll out made some teachers reduce ‘appetite’ for competency based curriculum (Education Officer3).”*

These findings agrees with those of Nyoni (2018), which revealed that that most of teachers were not provided with in-service training as a strategy to improve their teaching-learning techniques and hence most of them were still employing old approaches or traditional-learning-methods. In another study, Komba and Mwandanji (2015) established that majority (86%) of the teachers did not have a proper understanding of the Competence- Based nor were they knowledgeable about the objectives of the program. These results were further supported by Hakielimu (2012) who established that the paradigm shift program in schools had always been poorly implemented, as the majority of teachers did not understand the requirements of the program.

Table 4.6 shows means and standard deviations obtained by the study respondents on teachers’ attitudes and beliefs towards CBC.

**Table 4.6: Teachers' attitudes and beliefs towards competency based curriculum**

| Attitudes and beliefs  | Head teachers |          | Teachers |          |
|--|---------------|----------|----------|----------|
|  | Mean          | Std. Dev | Mean     | Std. Dev |
| It is necessary to monitor the impact that CBC will have on Kenyan education   | 4.63          | .486     | 4.55     | .548     |
| A common cultural background between learners and teachers is important for CBC to be successful   | 4.50          | .734     | 4.42     | .495     |
| CBC will provide all students with equal educational opportunities   | 4.03          | .644     | 3.53     | 1.165    |
| CBC will encourage independent learners  | 3.99          | 1.087    | 4.01     | .830     |
| CBC will help to improve the economic performance of Kenya   | 3.97          | 1.173    | 3.87     | .763     |
| CBC is more likely than the former education system to develop fulfilled human beings  | 3.92          | 1.125    | 3.99     | 1.120    |
| CBC will encourage lifelong learners   | 3.87          | 1.390    | 3.61     | .986     |
| Highly competent teachers are needed in order to make a change from content based to CBC possible  | 3.67          | 1.374    | 4.60     | .491     |
| The transition from content based education to CBC will be easy for teachers to achieve  | 3.42          | 1.212    | 3.06     | 1.142    |
| Learners use a variety of different strategies in their performance so that it becomes difficult in determining the particular competencies used in such performance | 3.31          | 1.132    | 3.54     | 1.482    |
| CBC will mean more work for teachers as they will have to design programs which are appropriate to the individual learning needs of their students                   | 3.10          | 1.420    | 4.01     | 1.302    |
| CBC will lower the standards of academic achievement in our education system   | 2.64          | 1.081    | 1.37     | .731     |
| There is no need to transform Kenya's education system from content based education to CBC   | 1.69          | .690     | 2.05     | 1.245    |

As shown in Table 4.6, the mean scores obtained by the headteachers on aspects measuring teachers' attitudes and beliefs towards CBC ranged from 1.69 to 4.63. The highest ranked aspects were "It is necessary to monitor the impact that CBC will have on Kenyan education (4.63)" and "a common cultural background between learners and teachers is important for CBC to be successful (4.50)". On the other hand, the lowest ranked statements were "there is no need to transform Kenya's education system from content based education to CBC (1.69)" and "CBC will lower the standards of academic achievement in our education system (2.64)".

Results in the table further showed that the mean scores obtained by the teachers ranged between 1.37 and 4.60. The highly ranked aspects by the teachers were "highly competent teachers are needed in order to make a change from content based to CBC possible (4.60)" and "it is necessary to monitor the impact that CBC will have on Kenyan education (4.55)". The lowly ranked statements were "CBC will lower the standards of academic achievement in our education system (1.37)" and "there is no need to transform Kenya's education system from content based education to CBC (2.05)". It was established from the study findings that majority of the headteachers and teachers had a positive attitudes towards the CBC. However, a significant number of them perceived that with the implementation of the CBC program, teachers will have more work for designing programs that will be appropriate to the individual learning needs of the students. Contrary with the findings, Otara, Uworwabayeho, Nzabairwa and Kayisenga (2019) in their study established that primary school teachers had a negative attitude towards Learner-Centered Pedagogy (LCP). The major factors influencing teachers' attitudes were

both institutional and individual factors. Institutional factors included lack of clear indicators on LCP, shortage of school facilities and resources, big class size, heavy workload and barrier in language of instruction. Individual factors included lack of prior experience on LCP among colleges and university tutors during pre-service training, lack of self-confidence and lack of positive attitude among the teachers.

#### **4.5 Effects of available infrastructure on the implementation of the competency based curriculum**

The second objective of the study was to determine the effect of available infrastructure on the implementation of the competency based curriculum in Machakos County. To meet this objective, the study respondents were asked to indicate their level of agreement or disagreement in a 5-point likert scale. The scale ranged from 1 to 5 with 1 representing strongly disagree, 2 denoting disagree, 3 undecided, 4 agree and 5 strongly agree. The midpoint of the scale was a score of 3. Therefore, scores above 3 denoted that respondents agreed with the item on the scale while score below 3 signified that respondents disagreed with the item on the scale. Table 4.7 illustrates means and standard deviations obtained.

**Table 4.7: Infrastructure for effective Implementation of CBC**

| School infrastructures   | Headteachers |          | Teachers |          |
|--|--------------|----------|----------|----------|
|  | Mean         | Std Dev. | Mean     | Std Dev. |
| The provision of resources is essential if CBC is to succeed                           | 4.69         | 0.465    | 4.59     | .493     |
| The large classes in the Kenyan schools will hinder a successful implementation of CBC | 4.19         | 1.020    | 4.12     | .818     |
| The implementation of CBC will fail if more teachers are not posted to Kenyan schools  | 4.13         | .945     | 4.59     | .492     |
| My school is yet to receive all the necessary learning resources for CBC               | 4.01         | 1.087    | 4.39     | .488     |
| The textbooks available in my school are adequate to effectively implement CBC         | 2.40         | 1.241    | 1.43     | .496     |
| The textbooks provided for CBC are of low quality                                      | 2.29         | 1.046    | 2.25     | .927     |
| The school has adequate computer labs for effective implementation of CBC              | 0.00         | 0.000    | 1.15     | .360     |

Table 4.7 illustrates the mean scores obtained by the headteachers and teachers on a likert scale measuring the effects of infrastructure for effective implementation of competency based curriculum. The mean scores by headteachers ranged from 2.29 to 4.69 with standard deviations of 1.046 and 0.465 respectively. The highest scored statements by the headteachers were “The provision of resources is essential if CBC is to succeed (4.69)” and “large classes in the Kenyan schools will hinder a successful implementation of CBC (4.19).” On the other hand, the lowest ranked statements were “textbooks provided for CBC are of low quality (2.29)” and “textbooks available in my school are adequate to effectively implement CBC

(2.40).” Among the teachers, the mean scores they obtained ranged from 1.15 to 4.59 with a standard deviation of 0.360 and 0.493. The highly ranked statements by the teachers were “provision of resources is essential if CBC is to succeed (4.59)” and “implementation of CBC will fail if more teachers are not posted to Kenyan schools (4.59).” The lowest ranked statements were “school has adequate laboratories for effective implementation of CBC (1.15)” and “textbooks available in my school are adequate to effectively implement CBC (1.43)”. From the study findings, it emerged that most of the sampled schools lacked adequate school infrastructures needed for successful implementation of competency based curriculum. The major challenges experienced in most schools were large classes of pupils, inadequate teachers, inadequate textbooks, laboratories and other learning materials. In agreement with the findings, the researcher noted through interviews with the education officers that the major challenges facing implementation of CBC were lack of enough teachers, lack of teaching and learning materials and large classes. The following is an excerpt from one of the education officers who participated in the study.

*“Most of the schools have inadequate number of teachers as compared to the number of pupils enrolled and also teaching and learning materials are not enough (Education Officer 1).”*

The researcher further carried out an observation method to assess the adequacy of facilities and resources in the sampled schools. The researcher noted that in most schools, textbooks, teachers, desks and sanitation facilities were not adequate as compared to the number of pupils. These results agrees with Kavindi (2014) who revealed that the major challenges facing implementation of CBE included; shortage

of teacher educators, overcrowded classes, inadequate teaching and learning resources and short time for teaching practice. Similarly, Kahera (2010) established that under-staffing in the schools, lack of in-service training for teachers, uneven distribution of teachers in the schools, lack of support from parents and the local community on issues related to curriculum implementation, inadequate teaching and learning facilities and infrastructure were the major factors affecting curriculum implementation. In another study, Nyoni (2018) found out that lack of teaching and learning materials was one of the major challenges facing teachers during the implementation of competence based curriculum.

#### **4.6 Government Support in the Implementation of Competency-Based Curriculum**

The third objective of the study was to find out the effects of government support on the implementation of the competency based curriculum in Machakos County. To achieve this goal, a five point likert scale with four items was used. The scale ranged from 1 to 5 with 1 representing strongly disagree, 2 denoting disagree, 3 undecided, 4 agree and 5 strongly agree. The midpoint of the scale was a score of 3. Therefore, scores above 3 denoted that respondents agreed with the item on the scale while score below 3 signified that respondents disagreed with the item on the scale. Results of this analysis are presented in Table 4.8.

**Table 4.8: Effects of government support on the implementation of CBC**

| <b>Government support</b>  | <b>Headteachers</b> |                 | <b>Teachers</b> |                 |
|--|---------------------|-----------------|-----------------|-----------------|
|  | <b>Mean</b>         | <b>Std Dev.</b> | <b>Mean</b>     | <b>Std Dev.</b> |
| For CBC to succeed, the ministry of education should create effective communication system with schools to aid smooth implementation of the new curriculum | 4.59                | .495            | 4.29            | .663            |
| Government should post more teachers to schools for CBC to be successful   | 4.32                | .693            | 4.85            | .354            |
| CBC was hurriedly implemented by the government before the necessary resources were put in schools   | 4.24                | .432            | 4.58            | .494            |
| The ministry of education does not have a monitoring and evaluation framework to track the progress in implementation of CBC                               | 2.14                | .801            | 3.09            | 1.343           |
| The amount of money disbursed by government to schools is enough to facilitate effective implementation of CBC   | 1.56                | .499            | 1.71            | .719            |

Results presented in Table 4.8 shows that mean scores and standard deviations obtained by headteachers and teachers on aspects measuring effects of government support on the implementation of CBC. The means obtained by headteachers ranged from 1.56 to 4.59 while those obtained by teachers ranged from 1.71 to 4.85. The highly scored statement by the headteachers was “for CBC to succeed, government should create a school communication system to aid smooth implementation of the new curriculum (4.59)” whereas teachers highly ranked “Government should post more teachers to schools for CBC to be successful (4.85).” On the other hand, majority of the headteachers and teachers lowly ranked that statement that “amount of money disbursed by government to schools is enough to facilitate effective implementation of CBC (headteachers M=1.56 and teachers M=1.71).” Based on the

analysis of the findings, it emerged that the money disbursed in the schools by the government was not enough for the implementation of CBC, the programme was hurriedly implemented, there were not enough teachers in schools to ensure successful implementation of CBC and there were no established channels of communication in school to aid in the implementation of new curriculum. Through interviews, the researcher noted that one of the education officer said that there were no clear policy guidelines to the school stakeholders on the implementation of the CBC. The officer further said that in most sampled schools, the school environment were not friendly for the implementation of the programme. This is because most of the schools did not have adequate resources such as teachers, teaching and learning materials, sanitation facilities, electricity connections, among others. As quoted from one of the education officer:-

*“In some schools, the environment is very unfriendly for the implementation of competency based curriculum. There is inadequacy of teaching and learning resources, sanitation facilities are not enough compared with the number of pupils, there is no water and also no electricity. Additionally, inaccessibility to some schools is another challenge due to poor road network. This negatively affected the implementation of competency based curriculum in those schools (Education Officer 3).”*

Another interviewer lamented that

*“The process of implementation of CBC by the government is very slow in most public schools (Education officer 2).”*

Contrary with the findings, Odey and Opoh (2015) found out that the main challenges facing curriculum implementation included lack of a curriculum implementation monitoring strategy, government failure to offer training to teachers

on curriculum implementation strategies, learners craving for success in examinations at all costs even without working hard, lack of motivation among tutors, and failure by tutors to focus on teaching responsibilities as they spend more time on scholarly research.

#### **4.7 Measures to Facilitate Implementation of Competency Based Curriculum**

The fourth objective was to determine the intervention measures necessary for ensuring prudence in the implementation of the educational reforms. To address this objective, the study respondents were asked to propose measures that can be put in place to ensure effective implementation of competency based curriculum in primary schools. Table 4.9 shows results obtained.

**Table 4.9: Measures for enhancing effective implementation of CBC**

| <b>Measures</b>   | <b>Headteachers</b> |          | <b>Teachers</b> |          |
|---|---------------------|----------|-----------------|----------|
|   | <b>f</b>            | <b>%</b> | <b>f</b>        | <b>%</b> |
| <b>School management</b>  |                     |          |                 |          |
| Undergo training on CBC   | 66                  | 84.6     | 270             | 78.9     |
| Organize meetings to sensitize parents on their roles in education          | 60                  | 76.9     | 317             | 92.7     |
| Support teachers workshops, seminars  | 58                  | 74.4     | 244             | 71.3     |
| Ensuring proper composition of the PTA and BOM members with the good merits | 53                  | 67.9     | 301             | 88.0     |
| PTA and BOM should undergo training on school management                    | 45                  | 57.7     | 170             | 49.7     |
| Build more classrooms to minimize overcrowding                              | 32                  | 41.0     | 187             | 54.7     |
| <b>Teachers</b>   |                     |          |                 |          |
| Attend more training sessions on CBC  | 73                  | 93.6     | 342             | 100.0    |
| Develop a positive attitude towards CBC                                     | 60                  | 76.2     | 331             | 96.8     |
| Support the MOE in realizing CBC objectives                                 | 57                  | 73.1     | 286             | 83.6     |

Table 4.9 shows head teachers' and teachers' responses on measures for enhancing effective implementation of CBC. Over 70.0% of the respondents suggested that the school management should undergo training on CBC, organize meetings to sensitize parents on their roles in education and also support teachers' workshops and seminars. Through interviews, the education officers recommended that parents and other stakeholders should be sensitized on their roles in ensuring proper and successful implementation of CBC.

Findings in the table further all the teachers (100.0%) and over 90.0% of the headteachers recommended that teachers should attend in service training on competency based curriculum to ensure that they are well conversant with the new programme. Majority of them further suggested that teachers should develop a positive attitude towards CBC and they should also support the MOE in realizing CBC objectives. This was further supported by the education officers, who reported that teachers should undergo more training on CBC and change their attitude to embrace the new curriculum. The results concurred with the findings of the study by Patrick & Sturgis (2015) which discovered that teachers as the key implementers of competency based curriculum are required to have continuous training and professional development. Igbokwe, Mezieobi & Eke (2014) in their research further added that teacher attitudes are a vital component of successful curriculum change. When teachers feel that they are neglected during curriculum review and design, they may end up resisting the implemented changes, thereby compromising the effectiveness of curriculum implementation in terms of goals, the content, teaching-learning process, assessment and resource utilization. Change in any organisation

has been associated with feelings of suspicion, fear of the unknown and dissatisfaction. Therefore, for a curriculum to be changed successfully there is need to change the teachers who are the primary agents of change (Kasapoglu, 2010).

Table 4.10 illustrates headteachers and teachers opinions on the measures that can be put in place by the community members and government for enhancing effective implementation of CBC.

**Table 4.10: Measures to be put in place by the community and government for enhancing effective implementation of CBC**

| <b>Community/parents</b>   | <b>Headteachers</b> |       | <b>Teachers</b> |       |
|--|---------------------|-------|-----------------|-------|
| Fully involved in children learning  | 52                  | 66.7  | 245             | 71.6  |
| Regular sensitization to ensure their support after shifting from content based to competency based curriculum | 44                  | 56.4  | 172             | 50.3  |
| Support schools through provision of teaching and learning materials   | 32                  | 41.0  | 199             | 58.2  |
| <b>Government</b>  | <b>Headteachers</b> |       | <b>Teachers</b> |       |
| Employ more teachers to address understaffing  | 78                  | 100.0 | 342             | 100.0 |
| Ensure timely disbursement of the funds in the schools   | 75                  | 96.2  | 310             | 90.6  |
| Review progress of CBC periodically  | 72                  | 92.3  | 301             | 88.0  |
| Should provide appropriate and relevant policy guidelines on CBC   | 66                  | 84.6  | 297             | 86.8  |
| Ensure proper monitoring and evaluation of the CBC programme   | 63                  | 80.8  | 275             | 80.4  |
| Ensure proper induction of the school stakeholders on CBC  | 61                  | 78.2  | 319             | 93.3  |
| Provide enough teaching and learning materials in schools  | 59                  | 75.6  | 315             | 92.1  |
| Provide better infrastructure  | 55                  | 70.5  | 246             | 71.9  |
| Motivate teachers through promotions and salary increment  | 54                  | 69.2  | 313             | 91.5  |

Regarding community members/ parents, at least 50.0% of the study respondents suggested that community members and parents should be fully involved in their children learning and they should be sensitized about the competency based curriculum. In relation to Government, all the headteachers and teachers suggested that the government should employ more teachers to address the problem of understaffing in most public primary schools. Over 80.0% of them also recommended that the government should ensure timely disbursement of the funds in the schools, review progress of CBC periodically and also provide appropriate and relevant policy guidelines on CBC. Moreover, most of the respondents suggested that the government should ensure that all the schools have adequate teaching and learning materials. The above recommendations were also supported by the three education officers who participated in the study. In his study on challenges facing teachers in implementing competence-based curriculum in Tanzania, Makunja (2016) suggested that the Ministry of Education should ensure that schools are provided with all the relevant teaching and learning resources. In yet another study, Odey and Opoh (2015) recommended that the faculty deans and departmental heads take seriously the role of monitoring tutors, and that the curriculum be reviewed to align with the contemporary needs of the society.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

In this chapter, summary of the findings, conclusions and recommendations are made. The chapter also gives areas for further research.

#### **5.2 Summary of the Findings**

The main goal of the study was to find out the constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya. The study respondents included 78 headteachers, 342 teachers and 3 education officers. Among the respondents, 59% of the headteachers were male and 41% were female. Of the teachers who took part in the study, 45.3% were male and 187 (54.7%) were female. This shows that most of the headteachers were male while majority of the teachers were female. The researcher did not identify the gender of the 3 education officers. In terms of academic qualifications, the study found out that headteachers had attained higher education qualifications as compared to the teachers. Majority of the headteachers had attained masters and bachelor in education degree whereas most of the teachers had attained P1 qualifications. The following are the main study findings.

##### **5.2.1 Teacher Factors Affecting the Implementation of the Competency Based Curriculum**

In relation to this objective, the study established that majority of the teachers were not well prepared for the implementation of new curriculum. A significant number

of them stated that despite the training sessions attended, they still did not understand some of the new terminologies of CBC. They felt that it was still difficult to adapt their teaching style to a child's individual learning style and also they felt that the training they had received, knowledge on CBC and assessment technique were not adequate. These results were verified by the education officers who reported that teachers were not fully equipped with the knowledge and skills on competency based curriculum and also some teachers were rigid to change from content based curriculum to competency based curriculum.

### **5.2.2 Effects of available infrastructure on the implementation of the competency based curriculum**

The study found out that most of the sampled schools lacked adequate school infrastructure needed for successful implementation of competency based curriculum. The major challenges experienced in most schools were large classes of pupils, inadequate teachers, inadequate textbooks, laboratories and other learning materials. These findings were supported by the education officers who reported that most schools had a problem of understaffing despite having large classes of pupils. They further added that the teaching and learning materials available in the schools were not adequate as compared to the number of pupils.

### **5.2.3 Effects of government support on the implementation of the competency based curriculum**

Regarding this objective, the findings of the analysis revealed that money disbursed in the schools by the government was not enough for the implementation of CBC, the programme was hurriedly implemented, there were no enough teachers in

schools to ensure successful implementation of CBC and there were no established channels of communication in school to aid in the implementation of new curriculum. Additionally, one of the education officer cited that there were no clear policy guidelines to the school stakeholders on the implementation of the CBC. The officer further said that in most sampled schools, the school environment were not friendly for the implementation of the programme. This is because most of the schools did not have adequate resources such as teachers, teaching and learning materials, sanitation facilities, electricity connections, among others.

### **5.3 Conclusion**

Based on the findings of the study, the following conclusions were made.

- i. Teachers as one of the key curriculum implementers were not fully prepared for the implementation of new curriculum. Some teachers felt that it was still difficult to adapt their teaching style to a child's individual learning style. This means that some teachers were rigid to change from content based curriculum to competency based curriculum.
- ii. Infrastructure available in schools was not adequate for successful implementation of competency based curriculum. Teaching and learning materials available in the schools were not adequate as compared to the number of pupils, there were no laboratories, among others.
- iii. Most schools had a problem of understaffing despite having large classes of pupils.
- iv. The government hurriedly implemented CBC in schools without first addressing challenges such as understaffing, inadequacy of teaching and

learning material and unfriendly teaching and learning environment. Also, the government did not first establish effective channels of communication. These as a consequence have a negative impact on the implementation of CBC in public schools in Machakos County.

#### **5.4 Recommendations of the Study**

From the conclusions presented above, the following recommendations are made.

- i. Teachers should be fully prepared for the implementation of competency based curriculum by enhancing their capacity in ICT through in-service training, seminars and workshops.
- ii. The Kenya Institute for the Curriculum Development should highly involve teachers in curriculum change process to create a positive attitude among them for successful implementation of Competency Based Curriculum.
- iii. The government through ministry of education should ensure timely disbursement of the funds in the schools and also fully activate NEMIS programme to attain effective channels of communication through networking.
- iv. The government through ministry of education should ensure that the education officers are frequently reviewing and monitoring progress of CBC in all schools.
- v. The government through the ministry of education should ensure that all schools have adequate infrastructures, that is employ more teachers, provide adequate teaching and learning materials, support schools in construction of more classrooms, laboratories; among others.

- vi. The Ministry of education should organize campaigns to sensitize parents and other schools stakeholders on their roles in ensuring proper and successful implementation of CBC.

### **5.5 Areas for Further Research**

A similar study should be conducted in other parts of the country to find out whether the same findings would be obtained.

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## APPENDICE

### APPENDIX A: INTRODUCTORY LETTER

Department of Educational Management,  
Policy and Curriculum Studies  
Kenyatta University,  
P O Box 43844,  
NAIROBI

Thro’  
The Chairman,  
Department of Educational Management,  
Policy and Curriculum Studies  
Kenyatta University

#### **To Whom It May Concern:**

I am a Master of Education student at Kenyatta University in the Department of Educational Management, Policy and Curriculum Studies. Having followed all the due procedures, I have been authorised to carry out a research study on “constraints facing the implementation of the competency based curriculum in Kenya”.

Your institution has been selected as part of the study and you have been identified as one of the respondents. This study is confidential and the responses provided will be thus treated. They will be used exclusively for the purposes of this study. I therefore request you to be elaborate in your responses.

Thank you.

Sincerely

.....

Muasya Eliud Wambua

## APPENDIX B: QUESTIONNAIRE FOR HEADTEACHERS

The purpose of this questionnaire is to collect data on “constraints facing the implementation of the competency based curriculum in Kenya”. The researcher assures you that the information gathered will be treated with utmost confidentiality and for academic purposes only. Please tick (✓) where appropriate or fill in the required information.

### Section 1: Background Information

1. Your gender

Male  Female

2. Level of education

Masters  Bachelors Degree

B. Ed  Diploma

Others (**Specify**).....

3. Years of experience in school headship .....years

4. Number of streams in your school.....

5. How many teachers are there in your school?

TSC teachers.....

BoM teachers.....

**Total**.....

6. How many pupils are there in your school

Boys.....

Girls.....

**Total**.....

## Section 2: Challenges facing Implementation of the Competency-Based Curriculum

The table below presents a number of statements regarding Competency-Based Curriculum (CBC). You are required to indicate the extent to which you agree or disagree with each of the statements presented. Use the scale below to respond.

**SA** – Strongly Agree; **A** – Agree; **U** – Undecided; **D** – Disagree; **SD** – Strongly Disagree

| <b>Teacher Knowledge on CBC</b>   | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|---|-----------|----------|----------|----------|-----------|
| My knowledge of CBC is good   |           |          |          |          |           |
| Teachers in my school have received adequate training on CBE  |           |          |          |          |           |
| Most of my teachers are still confused by the new terminology of CBC  |           |          |          |          |           |
| More research on CBC is needed before it can be implemented successfully                                      |           |          |          |          |           |
| Teachers in my school find it difficult to adapt their teaching styles to a child's individual learning style |           |          |          |          |           |
| I will be able to judge if students have achieved the learning outcomes of CBC                                |           |          |          |          |           |
| My knowledge of the assessment techniques for CBC is good   |           |          |          |          |           |
| Teachers in my school do not understand the principle of continuous assessment                                |           |          |          |          |           |
| My teachers were given clear guidelines as to how students can be transformed from passive to active learners |           |          |          |          |           |
| The teachers in my school are well prepared for CBC   |           |          |          |          |           |
| <b>Attitudes and Beliefs about CBC</b>  | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| The transition from content based education to CBE will be easy for teachers to achieve                       |           |          |          |          |           |
| Learners use a variety of different strategies in their   |           |          |          |          |           |

|  |           |          |          |          |           |
|--|-----------|----------|----------|----------|-----------|
| performance so that it becomes difficult in determining the particular competencies used in such performance                                       |           |          |          |          |           |
| There is no need to transform Kenya's education system from content based education to CBC   |           |          |          |          |           |
| CBC will help to improve the economic performance of Kenya   |           |          |          |          |           |
| CBC will provide all students with equal educational opportunities   |           |          |          |          |           |
| CBC will encourage independent learners  |           |          |          |          |           |
| CBC will encourage lifelong learners   |           |          |          |          |           |
| CBC will mean more work for teachers as they will have to design programs which are appropriate to the individual learning needs of their students |           |          |          |          |           |
| A common cultural background between learners and teachers is important for CBC to be successful   |           |          |          |          |           |
| Highly competent teachers are needed in order to make a change from content based to CBC possible  |           |          |          |          |           |
| It is necessary to monitor the impact that CBE will have on Kenyan education   |           |          |          |          |           |
| CBC will lower the standards of academic achievement in our education system   |           |          |          |          |           |
| CBE is more likely than the former education system to develop fulfilled human beings  |           |          |          |          |           |
| <b>Infrastructure for effective Implementation of CBC</b>  | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| The provision of resources is essential if CBE is to succeed   |           |          |          |          |           |
| The large classes in the Kenyan schools will hinder a successful implementation of CBC   |           |          |          |          |           |
| The implementation of CBC will fail if more teachers   |           |          |          |          |           |

|   |           |          |          |          |           |
|---|-----------|----------|----------|----------|-----------|
| are not posted to Kenyan schools  |           |          |          |          |           |
| The textbooks available in my school are adequate to effectively implement CBC  |           |          |          |          |           |
| My school is yet to receive all the necessary learning resources for CBC  |           |          |          |          |           |
| The textbooks provided for CBC are of low quality   |           |          |          |          |           |
| <b>Government Support</b>   | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| For CBC to succeed, government should create a school communication system to aid smooth implementation of the new curriculum |           |          |          |          |           |
| CBC was hurriedly implemented by the government before the necessary resources were put in schools                            |           |          |          |          |           |
| The amount of money disbursed by government to schools is enough to facilitate effective implementation of CBC                |           |          |          |          |           |
| The ministry of education does not have a monitoring and evaluation framework to track the progress in implementation of CBC  |           |          |          |          |           |
| Government should post more teachers to schools for CBC to be successful  |           |          |          |          |           |

### **Section 3: Measures to Facilitate Implementation of Competency-Based Curriculum**

1. What measures do you propose that can be taken to facilitate effective implementation of Competency-Based Curriculum in primary schools? Give your suggestions for each of the stakeholders listed below:
  - a. School Management
  - b. Teachers
  - c. The Government/Ministry of education

## APPENDIX C: QUESTIONNAIRE FOR TEACHERS

The purpose of this questionnaire is to collect data on “constraints facing the implementation of the competency based curriculum in Kenya”. The researcher assures you that the information gathered will be treated with utmost confidentiality and for academic purposes only. Please tick (✓) where appropriate or fill in the required information.

### Section 1: Background Information

1. Your gender

Male  Female

2. Level of education

Masters  Bachelors Degree

B. Ed  Diploma

P1

Others (**Specify**).....

3. Years of experience as a teacher .....years

4. Number of streams in your school.....

5. How many pupils are there in your school

Boys.....

Girls.....

**Total** .....

## Section 2: Challenges facing Implementation of the Competency-Based Curriculum

The table below presents a number of statements regarding Competency-Based Curriculum (CBC). You are required to indicate the extent to which you agree or disagree with each of the statements presented. Use the scale below to respond.

**SA** – Strongly Agree; **A** – Agree; **U** – Undecided; **D** – Disagree; **SD** – Strongly Disagree

| <b>Teacher Knowledge on CBC</b>  | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|--|-----------|----------|----------|----------|-----------|
| My knowledge of CBC is good  |           |          |          |          |           |
| I have received adequate training on CBC   |           |          |          |          |           |
| I am confused by the new terminology of CBC  |           |          |          |          |           |
| More research on CBC is needed before it can be implemented successfully   |           |          |          |          |           |
| I find it difficult to adapt my teaching style to a child's individual learning style  |           |          |          |          |           |
| I will be able to judge if students have achieved the learning outcomes of CBC   |           |          |          |          |           |
| My knowledge of the assessment techniques for CBC is good  |           |          |          |          |           |
| I do not understand the principle of continuous assessment   |           |          |          |          |           |
| In the CBC teacher training I have received, clear guidelines were given as to how students can be transformed from passive to active learners                       |           |          |          |          |           |
| I feel well prepared for CBC   |           |          |          |          |           |
| <b>Teacher Attitudes and Beliefs about CBC</b>   | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| The transition from content based education to CBC will be easy for me to achieve  |           |          |          |          |           |
| Learners use a variety of different strategies in their performance so that it becomes difficult in determining the particular competencies used in such performance |           |          |          |          |           |

|  |           |          |          |          |           |
|--|-----------|----------|----------|----------|-----------|
| There is no need to transform Kenya's education system from content based education to CBC   |           |          |          |          |           |
| CBC will help to improve the economic performance of Kenya   |           |          |          |          |           |
| CBC will provide all students with equal educational opportunities   |           |          |          |          |           |
| CBC will encourage independent learners  |           |          |          |          |           |
| CBC will encourage lifelong learners   |           |          |          |          |           |
| CBC will mean more work for teachers as they will have to design programs which are appropriate to the individual learning needs of their students |           |          |          |          |           |
| A common cultural background between learners and teachers is important for CBC to be successful   |           |          |          |          |           |
| Highly competent teachers are needed in order to make a change from content based to CBC possible  |           |          |          |          |           |
| It is necessary to monitor the impact that CBC will have on Kenyan education   |           |          |          |          |           |
| CBC will lower the standards of academic achievement in our education system   |           |          |          |          |           |
| CBC is more likely than the former education system to develop fulfilled human beings  |           |          |          |          |           |
| <b>Infrastructure for effective Implementation of CBC</b>  | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| The provision of resources is essential if CBE is to succeed   |           |          |          |          |           |
| The large classes in the Kenyan schools will hinder a successful implementation of CBC   |           |          |          |          |           |
| The implementation of CBC will fail if more teachers are not posted to Kenyan schools  |           |          |          |          |           |
| The textbooks available in my school are adequate to effectively implement CBC   |           |          |          |          |           |
| Our school is yet to receive all the necessary learning  |           |          |          |          |           |

|   |           |          |          |          |           |
|---|-----------|----------|----------|----------|-----------|
| resources for CBC   |           |          |          |          |           |
| The textbooks provided for CBC are of low quality   |           |          |          |          |           |
| The school has adequate laboratories for effective implementation of CBC  |           |          |          |          |           |
| <b>Government Support</b>   | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
| For CBC to succeed, government should create a school communication system to aid smooth implementation of the new curriculum |           |          |          |          |           |
| CBC was hurriedly implemented by the government before the necessary resources were put in schools                            |           |          |          |          |           |
| The amount of money disbursed by government to schools is enough to facilitate effective implementation of CBC                |           |          |          |          |           |
| The ministry of education does not have a monitoring and evaluation framework to track the progress in implementation of CBC  |           |          |          |          |           |
| Government should post more teachers to schools for CBC to be successful  |           |          |          |          |           |

### **Section 3: Measures to Facilitate Implementation of Competency-Based Curriculum**

2. What measures do you propose that can be taken to facilitate effective implementation of Competency-Based Curriculum in primary schools? Give your suggestions for each of the stakeholders listed below:
  - a. School Management
  - b. Teachers
  - c. The Government/Ministry of education

## **APPENDIX D: INTERVIEW SCHEDULE FOR EDUCATION**

### **OFFICERS**

1. What is the progress so far on the implementation of Competency-Based Curriculum (CBC) in Machakos County?
2. Did teachers receive any training relating to the implementation of CBC?
3. In your view, was this training adequate given what CBC entails?
4. Did the training equip the teachers with necessary skills?
5. What are the most difficult challenges of implementing CBC?
6. How would you prepare to overcome those challenges?
7. Are there any precautionary measures in place in ensuring a smooth implementation of CBC?
8. In terms of the environment within which CBC is being implemented, is it enabling enough for an effective implementation?
9. If not so, what are the stumbling blocks?
10. How would you plan to deal with these stumbling blocks?

## APPENDIX E: DOCUMENT ANALYSIS

| Document                      | Comment        |
|-------------------------------|----------------|
| Schemes of work               | .....<br>..... |
| Lesson plans                  | .....<br>..... |
| Records of work               | .....<br>..... |
| Pupils exercise books         | .....<br>..... |
| Teaching aids in<br>classroom | .....<br>..... |

## APPENDIX F: OBSERVATION CHECKLIST

| <b>Facilities and resources in schools</b> | <b>Status/Adequacy</b> | <b>Comments</b> |
|--|------------------------|-----------------|
| Classrooms                                 |                        |                 |
| Desks                                      |                        |                 |
| Text books                                 |                        |                 |
| Teachers                                   |                        |                 |
| Latrines                                   |                        |                 |
| Playground                                 |                        |                 |
| Staffroom                                  |                        |                 |

## APPENDIX G: SAMPLE SIZE DETERMINATION TABLE

| <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> | <i>N</i> | <i>S</i> |
|----------|----------|----------|----------|----------|----------|
| 10       | 10       | 220      | 140      | 1200     | 291      |
| 15       | 14       | 230      | 144      | 1300     | 297      |
| 20       | 19       | 240      | 148      | 1400     | 302      |
| 25       | 24       | 250      | 152      | 1500     | 306      |
| 30       | 28       | 260      | 155      | 1600     | 310      |
| 35       | 32       | 270      | 159      | 1700     | 313      |
| 40       | 36       | 280      | 162      | 1800     | 317      |
| 45       | 40       | 290      | 165      | 1900     | 320      |
| 50       | 44       | 300      | 169      | 2000     | 322      |
| 55       | 48       | 320      | 175      | 2200     | 327      |
| 60       | 52       | 340      | 181      | 2400     | 331      |
| 65       | 56       | 360      | 186      | 2600     | 335      |
| 70       | 59       | 380      | 191      | 2800     | 338      |
| 75       | 63       | 400      | 196      | 3000     | 341      |
| 80       | 66       | 420      | 201      | 3500     | 346      |
| 85       | 70       | 440      | 205      | 4000     | 351      |
| 90       | 73       | 460      | 210      | 4500     | 354      |
| 95       | 76       | 480      | 214      | 5000     | 357      |
| 100      | 80       | 500      | 217      | 6000     | 361      |
| 110      | 86       | 550      | 226      | 7000     | 364      |
| 120      | 92       | 600      | 234      | 8000     | 367      |
| 130      | 97       | 650      | 242      | 9000     | 368      |
| 140      | 103      | 700      | 248      | 10000    | 370      |
| 150      | 108      | 750      | 254      | 15000    | 375      |
| 160      | 113      | 800      | 260      | 20000    | 377      |
| 170      | 118      | 850      | 265      | 30000    | 379      |
| 180      | 123      | 900      | 269      | 40000    | 380      |
| 190      | 127      | 950      | 274      | 50000    | 381      |
| 200      | 132      | 1000     | 278      | 75000    | 382      |
| 210      | 136      | 1100     | 285      | 100000   | 384      |

Note.—*N* is population size.  
*S* is sample size.

Source: Kathuri and Pals (1993).

# APPENDIX H: RESEARCH APPROVAL FROM KENYATTA UNIVERSITY



KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 2<sup>nd</sup> April, 2019

TO: Muasya Eliud Wambua  
C/o Educational Management Policy  
And Curriculum studies Dept.  
[Kenyatta University](#)

REF: E55/10518/2006

## SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 6<sup>th</sup> March, 2019 entitled "Constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

A handwritten signature in blue ink, appearing to read 'Eljah Mutua'.

ELIJAH MUTUA  
FOR: DEAN, GRADUATE SCHOOL

C.c. Chairman, Department of Educational Management Policy and Curriculum Studies

Supervisors:

1. Dr. Waweru Samuel  
C/o Department of Educational Management  
Policy and Curriculum studies  
[Kenyatta University](#)

EM/ik

**APPENDIX I: RESEARCH AUTHORIZATION FROM  
KENYATTA UNIVERSITY**



**KENYATTA UNIVERSITY  
GRADUATE SCHOOL**

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 8710901 Ext. 57530

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

Our Ref: E55/10518/2006

DATE: 2<sup>nd</sup> April, 2019

Director General,  
National Commission for Science, Technology  
and Innovation  
P.O. Box 30623-00100  
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MUASYA ELIUD WAMBUA – REG. NO.  
E55/10518/2006.

I write to introduce Muasya Eliud Wambua who is a Postgraduate Student of this University. The student is registered for M.ED degree programme in the Department of Educational Management Policy and Curriculum Studies

Eliud intends to conduct research for a MED Project Proposal entitled, “Constraints facing successful implementation of the competency based curriculum in Machakos County, Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in blue ink, appearing to be 'E. Kimani', written over a horizontal line.

PROF. ELISHIBA KIMANI  
AG. DEAN, GRADUATE SCHOOL

EM/ik

## APPENDIX J: RESEARCH AUTHORIZATION FROM NACOSTI



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349,3310571,2219420  
Fax: +254-20-318245,318249  
Email: dg@nacosti.go.ke  
Website : www.nacosti.go.ke  
When replying please quote

NACOSTI, Upper Kabete  
Off Waiyaki Way  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/63462/31044**

Date: **24<sup>th</sup> June, 2019.**

Eliud Wambua Muasya  
Kenyatta University  
P.O. Box 43844-00100  
**NAIROBI.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Constraints facing successful implementation of the competency based curriculum in Machakos County Kenya.”* I am pleased to inform you that you have been authorized to undertake research in **Machakos County** for the period ending **24<sup>th</sup> June, 2020.**

You are advised to report to **the County Commissioner, and the County Director of Education, Machakos County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

  
**BONIFACE WANYAMA**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Machakos County.

The County Director of Education  
Machakos County.

# APPENDIX K: RESEARCH PERMIT


**THIS IS TO CERTIFY THAT:**  
**MR. ELIUD WAMBUA MUASYA**  
**of KENYATTA UNIVERSITY, 0-100**  
**NAIROBI, has been permitted to conduct**  
**research in Machakos County**

**Permit No : NACOSTI/P/19/63462/31044**  
**Date Of Issue : 24th June,2019**  
**Fee Received :Ksh 1000**

**on the topic: CONSTRAINTS FACING**  
**SUCCESSFUL IMPLEMENTATION OF THE**  
**COMPETENCY BASED CURRICULUM IN**  
**MACHAKOS COUNTY KENYA**

**for the period ending:**  
**24th June,2020**



  
.....  
**Applicant's**  
**Signature**

  
.....  
**Director General**  
**National Commission for Science,**  
**Technology & Innovation**

## **THE SCIENCE, TECHNOLOGY AND** **INNOVATION ACT, 2013**

The Grant of Research Licenses is guided by the Science,  
Technology and Innovation (Research Licensing) Regulations, 2014.

### **CONDITIONS**

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

**National Commission for Science, Technology and innovation**  
**P.O. Box 30623 - 00100, Nairobi, Kenya**  
**TEL: 020 400 7000, 0713 788787, 0735 404245**  
**Email: dg@nacosti.go.ke, registry@nacosti.go.ke**  
**Website: www.nacosti.go.ke**



**REPUBLIC OF KENYA**



**National Commission for Science,**  
**Technology and Innovation**

**RESEARCH LICENSE**

**Serial No.A 25414**

**CONDITIONS: see back page**