KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

A Skilled and Ethical Society

REPORT ON

IMPLEMENTATION OF COMPETENCY BASED TEACHER EDUCATION CURRICULUM IN KENYAN TEACHER TRAINING COLLEGES

NOVEMBER 2023

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT
P.O BOX 30231- 00100
NAIROBI
TEL: 3749900-9
Email info@kicd.ac.ke
www.kicd.ac.ke

November 2023

FOREWORD

The Kenya Institute of Curriculum Development (KICD) Act Number 4 of 2013 (Revised 2018) mandates the Institute to develop curricula and curriculum support materials for basic and tertiary education and training, below the university. The curriculum development process involves research, international benchmarking and stakeholder engagement. The Institute conceptualised the Competency Based Curriculum (CBC) as captured in the Basic Education Curriculum Framework (BECF), that responds to the demands of the 21st Century and the aspirations captured in the Constitution of Kenya 2010, and the Kenya Vision 2030, East African Commission Protocol and the United Nations Sustainable Development Goals.

The proposal for monitoring the implementation of the Competency Based Teacher Education (CBTE) programmes in the Teacher Training Colleges (TTCs) in Kenya falls within the Institute's mandate of developing curriculum support materials for basic and tertiary education and training. KICD developed a Teacher Education Curriculum Framework (TECF) in 2019 to guide Pre-service Teacher Education in Kenya. The TECF identifies the levels of Teacher Education and the key competencies to focus on. These are: Communication and Collaboration, Self-efficacy, Critical Thinking and Problem Solving, Creativity and Innovation, Learning to learn and Reflective Practice, Digital Literacy Skills, Pedagogical Content Knowledge, Assessment Competency and Citizenship and Leadership.

The study's findings will provide valuable insights into the professionalism, effectiveness of planning, appropriateness of the pedagogical strategies for implementation, the relevance of the resources used, Competency Based Teacher Assessment and challenges faced in the implementation of CBTE in the TTC. It is expected that the findings will contribute to the improvement of the quality of education provided in TTCs in Kenya and the provision of quality education to learners at the Pre- primary, Primary and Secondary levels of education.

Based on the TECF (2020), KICD developed curriculum designs to be used by Teacher Educators (also called tutors) in the TTCs. The educators were inducted on the CBTE and the programmes have been running in the colleges, with the first cohort due being currently in the third year of study. It is against this context that the Institute carried out monitoring to establish whether the programmes were being implemented as planned. This study will inform KICD and the MoE on policy matters regarding interventions on the implementation of CBC, with the aim of coming up with corrective measures that contribute to the development of a more robust education system in Kenya and promote the country's socio-economic development.

On behalf of the Institute, I wish to acknowledge officers from KICD who participated during the data gathering exercise, data entry, coding and analysis. In a special way we appreciate the Kenya Primary Education Equity in Learning program (KPEEL) for funding the activities in this project.

PROF. CHARLES ONG'ONDO
DIRECTOR/CHIEF EXECUTIVE OFFICER
KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

BECF	Basic Education Curriculum Framework
CAT	Continuous Assessment Test
CBA	Competency Based Assessment
CBC	Competency Based Curriculum
CBTA	Competency Based Teacher Assessment
CBTE	Competency Based Teacher Education
COVID	CoronaVirus Disease
CTPD	Continuous Teacher Professional Development
DECTE	Diploma in Early Childhood Teacher Education
DLP	Digital Literacy Program
DoC	Dean of Curriculum
DPTE	Diploma in Primary Teacher Education
DSTE	Diploma in Secondary Teacher Education
DTE	Diploma in Teacher Education
ECDE	Early Child Development and Education
FGD	Focus Group Discussion
HoD	Heads of Department
ICT	Information and Communication Technology
INSET	In-Service Education and Training
JS	Junior School
KCSE	Kenya certificate of Secondary Education
KICD	Kenya Institute of Curriculum Development
KIQ	Key Inquiry Question
KISE	Kenya Institute of Special Education
KNEC	Kenya National Examinations Council
KNUT	Kenya National Union of Teachers
KPEEL	Kenya Primary Education Equity in Learning
KSL	Kenya Sign Language
LMS	Learning Management System
MoE	Ministry of Education
PCK	Pedagogical Content Knowledge

PD	Professional Development
PGCE	Post Graduate Certificate in Education
PTE	Primary Teacher Education
SBA	School Based Assessment
SNE	Special Needs Education
SS	Senior School
STEM	Science, Technology, Engineering, and Mathematics
TE	Teacher Educator
TECF	Teacher Education Curriculum Framework
TP	Teaching Practice
TSC	Teachers Service Commission
TTC	Teacher Training College
TV	Television
UDECTE	Upgrade Diploma in Early Childhood Teacher Education
UDPTE	Upgrade Diploma in Primary Teacher Education
VI	Visual Impairment

OPERATIONAL DEFINITION OF KEY TERMS

Assessment: Refers to the process of ascertaining whether teacher trainees have attained curriculum goals. It is the systematic process of gathering and interpreting information from several sources about what a teacher trainee knows, understands and can do, with reference to the specific curriculum learning outcomes.

Curriculum: This refers to all that is planned to enable the teacher trainees to acquire and develop the desired knowledge, skills and attitudes.

Curriculum Implementation: This refers to how teacher educators deliver instruction and assessment through the use of specified resources provided in a curriculum. Curriculum implementation process involves helping the teacher trainees to acquire knowledge, skills and attitudes.

Pedagogy: Refers to the methods used by teacher educators to facilitate learning.

Professionalism: Refers to the consistent mode of behaviour teacher educators observe within the practice of education. It includes maintaining subject knowledge and instructing students at age-appropriate levels while collaborating with other educators to plan teaching methods.

Resources: These refer to any inputs that are used by teacher educators as well as teacher trainees in the learning environment to effectively achieve the desired outcomes. These could be human, infrastructure, realia or financial resources. They are also referred to as teaching and learning curriculum support materials

EXECUTIVE SUMMARY

Introduction

The Kenya Institute of Curriculum Development (KICD) carried out monitoring of implementation of Competency Based Teacher Education (CBTE) curriculum in Kenyan Teacher Training Colleges in order to establish whether the CBTE was being implemented as planned. The specific objectives of the study were to:

1. find out the extent to which the teacher educators demonstrate professional competence in implementation of CBTE in the TTCs;
2. establish effectiveness of planning by the Teacher Educators for implementation of CBTE in the TTCs;
3. determine the appropriateness of the pedagogical strategies for implementation of CBTE in the TTCs;
4. ascertain the relevance of the resources used for implementation of CBTE in the TTCs;
5. find out how Competency Based Teacher Assessment (CBTA) is conducted in the implementation CBTE in the TTCs;
6. establish the views of the College administrators, teacher educators and students on challenges faced in the implementation of CBTE in the TTCs.

Relevant literature was reviewed to define the key concepts, relevant theories of Teacher Education (TE) and previous research on competencies in TE, pedagogical approaches, continuous teacher professional development (CTPD) and evaluation in TE. A rationale for the survey in CBTE in Kenya was then provided.

Research Methodology

In terms of research methodology, the study adopted the pragmatist research philosophy. The study, therefore, took a mixed design which involved both quantitative and qualitative approaches. At the method level, the study was conceptualised as a survey. Both questionnaires and qualitative techniques (interviews, focused group discussions (FGDs)), and an observation guide were used as data sources.

The study targeted both public and private diploma teacher training colleges offering the Competency Based Teacher Education (CBTE) curriculum and colleges with SNE teacher trainees. The target population was 62 (Ministry of Education, 2022). Out of these, 35 were public while 27 were private colleges. The aim was to reach the teacher educators, principals, deans of education, Registrars heads of department. and teacher trainees.

Key Findings

The key findings on the study on the implementation Competency-Based Teacher Education (CBTE) capacities demonstrated some competence in aligning learning experiences, formulating key inquiry questions, and fostering trainee engagement. There were some challenges which included a negative attitude by some teacher educators towards preparation of the professional documents. Some also had a problem with developing some components

of the lesson plans, while some complained of the workload that caused them not to consistently update their record.

The findings showed that there were learner centred pedagogies like group work, projects and practicals, use of technology, exploratory learning and peer learning, in use by teacher educators. On the other hand, some respondents indicated that they use lecture method in teaching and learning. Challenges in integrating ICT into lessons were also experienced. concerns about the CBTE upgrade program's duration and content coverage, and varying resource availability across Teacher Training Colleges were identified. The study highlights the importance of workload issues among educators, refining curriculum designs, and providing targeted ICT training. Additionally, the research underscores the need for inclusive pedagogies, uniform resource allocation, the use of diverse assessment methods, and addressing infrastructure challenges for effective CBTE implementation.

The majority of teacher educators have undergone competency-based teacher assessment sensitization, but concerns exist regarding formative assessment, e-assessment challenges, and feedback from KNEC assessments. Generally, the availability of the resources was not uniform in all the colleges. Some resources were found in some colleges and missed in other colleges. Much as the resources were available, they were not adequate compared to the enrolment in the colleges.

Most of the resources are relevant for the implementation of CBTE curriculum. However, the course books did not directly address the curriculum designs since they were tailored for the previous PTE and DTE syllabuses. This made the teacher educators and trainees rely heavily on the internet to search for relevant content.

The most dominant challenge associated with the implementation of CBTE is the absence of educational resources to enhance teaching and learning is infra-structure. However, comprehensive utilisation of resources is dependent on teacher educators' technical capacity. Rationalising the cost of implementation as well as considerations for repair and maintenance are necessary to ensure sustainability. These findings collectively inform recommendations for enhancing CBTE implementation, teacher preparation, and addressing specific challenges in the TTCs.

Key Recommendations

1. KICD in collaboration with other relevant agencies should provide opportunities for continuous professional development to keep teacher educators abreast with best practices in teacher education. This should bring on board participants from public and private colleges without discrimination.
2. MOE through TTCs administrators should facilitate a culture of peer collaboration and formation of communities of practice among teacher educators to share effective teaching strategies, exchange ideas, and collectively enhance professional competence.

3. KICD in collaboration with relevant agencies should train teacher educators on interpretation of CBTE curriculum designs including time management, and ICT integration.
4. MOE and TSC should ensure college administrators enforce the preparation of professional documents by teacher educators.
5. MOE and relevant agencies should design structured microteaching guidelines to ensure teacher trainees plan effectively for lesson delivery.
6. TSC and KICD should provide continuous teacher training on the use of learner centred pedagogies to help develop the right competencies in teacher trainees.
7. MOE and relevant agencies should equip teacher educators with appropriate pedagogical strategies for trainees with special needs.
8. MOE and KICD should ensure that TTCs have relevant and adequate resources for implementation of CBTE curriculum. Key among the resources are coursebooks, trainees handbooks, teacher educator guides, ICT infrastructure for regular and SNE TTCs.
9. KICD should develop specific standalone curriculum designs for the upgrade programme.
10. KICD should review the DECTE and DPTE curriculum designs so as to make them program-specific.
11. The MoE and KNEC need to review the modalities for the conduct and content of e-assessment in tandem with CBTE. The exclusive use of multiple choice questions should be reconsidered. The awarding of marks should be reviewed to give more weight to the project.
12. The MoE and KNEC should review the modalities for administration of online assessments for trainees with special learning needs.
13. The MoE and relevant agencies should review the number of subjects in which teacher trainees are assessed before they qualify for award of diploma qualifications. Trainees in the upgrade programme should be allowed to study only the professional areas and the subjects they took in their earlier teacher training course or which they opt to study.
14. KNEC should provide timely feedback on all assessments that it conducts in teacher training colleges. The modalities on how the results contribute towards trainees' summative evaluation results should also be made clear to the trainees.
15. KICD should develop a collaborative and inclusive approach to development of curriculum support materials, handbooks and training manuals to empower for effective implementation of CBTE.
16. KICD and other government agencies should provide accredited platforms from which standardised content can be accessed to avoid use of inaccurate information by both teacher educators and trainees.
17. MoE and relevant agencies should harmonise policies affecting teacher education in terms of entry qualifications, micro-teaching and assessment programmes.
18. MoE should ensure that both public and private TTCs have adequate resources to implement CBTE

Conclusion

The study reveals a mixed landscape of strengths and areas for improvement. While teacher educators exhibit competence in aligning learning experiences with outcomes and fostering an engaging learning environment, challenges exist, particularly in integrating ICT into lessons. The evaluation of the upgrade program indicates a divided perspective, with concerns about duration, content coverage, and subject specialisation. Effective planning by teacher educators is evident, with the use of professional documents, but challenges such as workload issues require attention. Pedagogical strategies employed in CBTE implementation, while diverse, may not be entirely appropriate for trainees with special needs. The relevance of resources varies across Teacher Training Colleges (TTCs), and issues in competency-based teacher assessment include concerns about e-assessment modalities and the number of subjects assessed. The predominant challenge is the lack of educational resources, emphasising the need for technical capacity among teacher educators.

Addressing these findings is crucial for refining CBTE implementation, ensuring inclusivity, and ultimately improving teacher education in alignment with competency-based principle Teacher Training Colleges (TTCs) in Kenya play a critical role in shaping the quality of education by preparing teachers for pre-primary, primary and secondary education. The implementation of the curriculum is a crucial aspect of teacher training, as it impacts the quality of education delivered to learners. Consequently, monitoring the implementation of the curriculum in teacher training colleges is imperative as it ensures that the quality of training delivered to teacher trainees meets the required standards.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Chapter One serves as the gateway to a comprehensive exploration of the Competency-Based Teacher Education (CBTE) programs in Kenyan Teacher Training Colleges (TTCs). It begins by providing an overview of the educational reforms driven by the introduction of the Competency-Based Curriculum (CBC) in Kenyan schools. The chapter outlines the key changes and challenges posed by these reforms, particularly in the context of teacher education. The document that serves as the blueprint for CBC, the Basic Education Curriculum Framework (BECF), and its derivative, the Teacher Education Curriculum Framework (TECF), are introduced to set the stage for the subsequent discussion. The chapter delves into the rationale for the study, emphasising the need to monitor the implementation of CBTE to ensure its effectiveness and relevance. It outlines the specific objectives, scope, and the rationale behind undertaking a monitoring study on pre-service teacher training programs and upgrade initiatives. The introduction concludes by providing a summary of the key aspects covered, setting the reader on a path to gain a comprehensive understanding of the challenges and opportunities associated with the ongoing teacher education reforms in Kenya.

The Competency Based Curriculum (CBC), was introduced in Kenyan schools in 2017. The curriculum was developed in response to various calls by educational fora, researches and changing world trends among others to reform education to address societal needs. In order to align teacher competencies with the school curriculum, the Competency Based Teacher Education (CBTE) was instituted in 2021. Some of the main features of the CBTE curriculum include introduction of teacher core competencies, Pertinent and Contemporary Issues (PCI) and the blending of content and pedagogy in the entire course. The assessment of trainees has also been enhanced to include more formative assessment rather than overreliance of summative assessment as was the case with the previous curriculum.

The CBTE curriculum is structured into three Diploma level teacher training programmes, which have been running in the Kenyan TTCs since 2021. They are; Diploma in Early Childhood Teacher Education (DECTE), Diploma in Primary Teacher Education (DPTE) and Diploma in Secondary Teacher Education (DSTE). The DECTE and DPTE have upgrading programmes for ECDE Teacher Education Certificate holders and Primary Teacher Education Certificate holders (commonly referred to as P1 teachers). The upgrade to Diploma level is in conformity with the current requirement that the minimum qualification for a teacher is a diploma in teacher education.

Currently there are 35 public teacher training colleges and 36 private colleges offering the three Diploma courses. Among the 35 public teachers' colleges, 3 offer special needs education which cater for trainees with special needs. The three Colleges offering SNE are Mosoriot TTC, Machakos TTC and Asumbi TTC. The programmes have been running since 2021 and the trainees are at different stages. Curriculum is a live document whose status needs to be tracked to keep it abreast with the ever changing educational and social changes. It was therefore necessary to monitor the implementation of the teacher training programmes to establish the extent to which they are consistent with the aspirations of CBTE. This chapter presents the context of the study, purpose of the study, research objectives, scope of the study and rationale for the study. A summary of the issues covered has been made at the end of the chapter.

1.2 Context of the study

The Kenya Institute of Curriculum Development (KICD) is the national curriculum development Centre established through the KICD Act No. 4 of 2013 of the laws of Kenya. The Institute is mandated to develop research-based curricula and curriculum support materials for basic and tertiary education and training below the university. Therefore, KICD also develops curricula for Teacher Education. The Teacher Education Needs assessment report (KICD, 2016) concluded that the Teacher Education Curriculum needed to be re-oriented to provide a balance between knowledge of appropriate content and pedagogy. It called for a shift towards the Competency Based Curriculum as well as transformation of Teacher Education to offer relevant competencies and promote pathways at senior school, diploma and university level. Additionally, proposals were made for a competitive entry point and sufficient experience in schools.

Currently, Kenya is in a transition period where the Competency Based Curriculum (CBC) is being implemented alongside the Knowledge Based Curriculum (popularly referred to as the 8-4-4) in a phase in, phased out curriculum change model. The CBC takes a 2-6-3-3 structure for the Pre-primary, Primary, Junior school and Senior school levels of education respectively. The first cohort of the CBC will be in Grade 8 in 2024 and therefore covering two years of junior school. They will remain with one year before completing junior school in 2025 where they will have discovered their potential and therefore join senior school to take their pathways.

The document that provides a blueprint for the CBC is the *Basic Education Curriculum Framework (BECF)* (KICD, 2017). In conformity with the BECF, the Institute developed a *Teacher Education Curriculum Framework (TECF)* in 2019 to guide Pre-service Teacher Education in Kenya. The TECF identifies the levels of Teacher Education as highlighted earlier in this chapter. The TECF also outlines the core competencies which act as key teacher standards to be covered by the teacher trainees. These core competencies are: Communication and Collaboration, Self-efficacy, Critical Thinking and Problem Solving, Creativity and Innovation, learning to learn and Reflective Practice, Digital Literacy Skills, Pedagogical Content Knowledge, Assessment Competency and Citizenship and Leadership. Other key changes in the teacher education curriculum include incorporation of pertinent and contemporary issues, values. Another remarkable change was the extension of the teaching practice to one full or three terms which comprise micro teaching and practicum one and two.

Based on the TECF, KICD developed curriculum designs anchored on the Teacher Education reforms. The designs cover all the subjects offered in basic education and the professional learning areas that ground the teacher trainees as professional teachers. The teacher educators were oriented on the CBTE and the programmes were implemented from 2021. The first six colleges that pioneered the transition were Machakos TTC, Baringo TTC, Shanzu TTC, Thogoto TTC, Egoji and Migori TTC. The training of teacher educators takes a smart cascade method where the master trainers train the trainers of trainers (TOTs). Subsequently, the TOTs are expected to train the teacher educators.

Currently there are 35 public teacher training colleges and over 36 private teachers' colleges implementing the various diploma programmes. The first cohort of the CBTE course are in

their third year of study and will be proceeding for the first and second practicum from January 2024. The DECTE and DPTE courses have upgrade programmes, UDECTE and UDPTE, that cater for ECDE and primary school teachers already in service. The aim of the programme is to provide fundamental components of CBTE to bridge the gap in expectations among teachers in service.

According to KNEC course panel report, (KNEC, 2023), UDPTE has graduated over 12,000 teachers while UDECTE will be graduating their first cohort by the end of 2023. The Diploma in Secondary Teacher Education (DSTE) is being implemented in 3 Colleges namely Kibabii, Lugari and Kagumo TTCs. The DSTE curriculum was introduced to the colleges in September 2022 and currently the pioneers are in their second year.

The teacher trainees for both UDECTE and UDPTE are expected to take all subjects offered at that level. The UDECTE graduates will teach in PP1 and PP2 while the UDPTE teachers will serve as primary school teachers, handling learners from grade one to six. The minimum entry grade for both courses is a C plain. The UDPTE trainees take 6 additional subjects out of the 12 offered to ensure they meet the requirement of the CBTE Diploma course.

Initial reports from colleges following the implementation show that the inclusion of additional subjects in the course poses some constraints since the time allocated is not adequate for effective mastery of all the new subjects. For DPTE, the entry requirement includes minimum scores in given cluster subjects which is prohibitive to prospective entrants. This has led to dwindling numbers in the colleges, hence the recommendation by PWPER for the removal of the restrictions on qualifications. The DECTE program faces some challenges since most of the trainees were placed there after failing to meet the minimum qualifications. Some DECTE trainees have dropped the course and are opting to take DPTE if the minimum qualification requirements are reviewed.

The minimum qualification DSTE course is a C+ and c+ in cluster subjects. This qualification is equivalent to the minimum entry for universities. Logically, the value of this has been arguable and evidently led to a downward trend in the student enrolment to the DSTE colleges. All the three colleges are operating below capacity. The DSTE graduates will be required to teach at both Junior and Senior School yet currently the Junior school is domiciled in Primary schools. It is against this context that the Institute carried out this

monitoring and evaluation to establish how the programmes are being implemented with the aim of coming up with corrective measures and improvement where necessary.

1.3 Purpose of the study

The purpose of this study was to monitor the implementation of the Competency Based Teacher Education (CBTE) programmes in the Teacher Training Colleges (TTCs) in Kenya. The study sought to establish the progress of the implementation of the CBTE curriculum to obtain information, which will be a basis for any necessary action. The evidence in this report is intended to inform curriculum developers and other stakeholders on interventions and policy decisions that need to be taken for the improvement of CBTE.

1.4 Objectives of the study

The study aimed at achieving the following specific objectives:

1. To find out the extent to which the teacher educators demonstrate professional competence in implementation of CBTE in the TTCs.
2. To establish effectiveness of planning by the Teacher Educators for implementation of CBTE in the TTCs.
3. To determine the appropriateness of the pedagogical strategies for implementation of CBTE in the TTCs.
4. To ascertain the relevance of the resources used for implementation of CBTE in the TTCs.
5. To find out how Competency Based Teacher Assessment (CBTA) is conducted in the implementation CBTE in the TTCs.
6. To establish the views of the College administrators, teacher educators and students on challenges faced in the implementation of CBTE in the TTC

1.5 Scope of the study

This study covered three levels of the Teacher Education for which KICD is mandated to develop a curriculum. These are Teacher Education in Pre-primary, Primary and Secondary levels across the country. The focus was on the implementation of curriculum within the five ongoing programmes. These are Diploma in Early Childhood Teacher Education (DECTE), Upgrade Diploma in Early Childhood Teacher Education (UDECTE), Diploma in Primary Teacher Education (DPTE), Upgrade Diploma in Primary Teacher Education (UDPTE) and

Diploma in Secondary Teacher Education (DSTE). The colleges also offer Special Needs Education (SNE) to teacher trainees who are challenged in one way or another. The three Institutions offering SNE education are Machakos TTC, Asumbi TTC and Mosoriot TTC. These Institutions will be key in giving feedback on SNE in teacher education.

The study visited 62 out of the 71 TTCs that are offering the five programmes. These included 32 public primary teacher training colleges and 3 Public secondary teacher training colleges. The private TTCs offer the five programmes depending on their registration and approval. The registered TTCs offering DECTE and DPTE were 26 by April 2022, 10 were approved to offer DSTE course but reported poor enrolment due to the minimum requirement of grade C+. A number of colleges that were offering DTE and PTE are now in the process of converting to the new CBTE curriculum and are yet to be approved.

In terms of content, the study focussed on teacher educators professional competence, effectiveness in planning, appropriateness of the pedagogical strategies, the relevance of the resources, Competency Based Teacher Assessment and challenges faced in the implementation of CBTE.

1.6 Rationale of the study

The aforementioned changes in the teacher education curriculum occasioned by the inception of CBC in schools implies major shifts to achieve the implementation of CBTE in Kenya. A comprehensive appreciation of the progress of those changes and factors that have contributed to the implementation could not have been attained without a monitoring study to highlight the issues of concern as outlined in the set objectives. The rationale for this study is based on the need to address concerns about the quality of education provided in teacher training colleges (TTCs) in Kenya, and by extension the competence of teachers in the Kenyan schools.

Since the inception of the CBC at the primary level, monitoring studies have been undertaken to get information about curriculum implementation until Grade 7. Among the respondents in all the studies, teachers have been central in raising concerns about their roles as facilitators during the learning process. Findings from the monitoring and evaluation studies have shed some light on needs that teachers require to be addressed through continuous professional development.

While the multi-sectoral training sessions have been mounted from time to time to build the capacity of teachers, a comprehensive study has not been conducted on initial teacher training programmes that eventually produce teachers for the ongoing implementation of CBC.

This monitoring study was intended to bridge the information gaps on pre-service teacher training as well as the upgrade programmes introduced to support CBC. It was expected that ultimately; an in-depth understanding of the existing teacher training programmes would be attained in order to ensure their relevance within the ongoing reforms.

1.7 Chapter summary

The chapter has provided a background to the study against which the other aspects were conceptualised. The context of the study where the mandate of KICD and the existing competency based curriculum frameworks for basic and teacher education are explained. The chapter also gives the purpose of the study which is to monitor the implementation of the Competency Based Teacher Education (CBTE) programmes in the Teacher Training Colleges (TTCs) in Kenya. The study objectives, scope and rationale are given.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents a review of literature related to the study objectives. It also provides information on definitions of key terms, review of the theories, policies and previous research studies related to the study. It ends with gaps from the related literature and chapter's summary.

2.2 Definitions of Key Concepts

2.2.1 Teacher Education

Teacher education can be defined as the process of preparing individuals to become effective teachers through a combination of theoretical and practical learning experiences (Darling-Hammond, 2010). This process involves the acquisition of knowledge, skills, and dispositions that enable teachers to meet the diverse needs of their students and to promote their academic and personal growth (Furlong & Maynard, 2018). According to Korthagen and Kessels (2019), teacher education is not only about acquiring knowledge and skills but also about developing a professional identity and a sense of purpose that motivates teachers to engage in continuous learning and self-improvement.

Teacher education is a comprehensive and ongoing program aimed at developing teacher proficiency and competence to meet the demands and challenges of the profession. This program comprises pre-service and in-service components, which are mutually reinforcing. According to the Goods' Dictionary of Education, teacher education encompasses formal and informal activities and experiences that qualify individuals to assume their responsibilities as members of the educational profession or discharge their duties more effectively. It covers teaching skills, sound pedagogical theory, and professional competencies, all of which resonate with the relevance of constructivism theory to teacher education. It acknowledges the need for trainers to understand trainees' experiences, provide interactive learning environments, and encourage teacher trainees to reflect on their experiences to improve their practice (Goods & Merkel, 1973).

Teacher education can be considered in three phases: pre-service, induction, and in-service, which constitute a continuous process. The International Encyclopedia of Teaching and

Teacher Education (1987) describes these phases as components of teacher education. In contrast, UNESCO defines teacher education as formal teacher training (pre-service or in-service) designed to equip teachers with the knowledge, attitude, behaviour, and skills required for teaching at the relevant level. It covers different levels of education, such as pre-primary, primary, secondary, higher secondary, and tertiary. Resonating with these statements, this study has covered the phases of teacher education i.e In-service and pre-service programmes.

Besides pre-service and in-service programs, teacher education should involve various community programs and extension activities, such as non-formal education programs, literacy, and development activities. To prepare teachers who are competent to face the challenges of the dynamic society, teacher education must keep up with recent developments and trends. The curriculum, design, structure, organisation, and transaction modes are the core of the entire process of teacher education, and their appropriateness is of utmost importance. This study's context highlights the various levels and levels of teacher education that it will focus on. Additionally, the study outlines the various teacher competencies that will enable the teacher to manoeuvre the challenges of teaching in the 21st century.

2.2.2 Competency Based Teacher Education

Teacher education in recent years has shifted towards training aimed at developing relevant competencies among teachers. This shift has brought in a new approach to teacher education referred to as Competency Based Teacher Education (CBTE). The study conceptualises CBTE as a result-oriented approach to training of teachers aimed at producing teachers who exhibit well nurtured personal and professional competencies. Competency-based teacher education (CBTE) is an approach to preparing teachers that focuses on the development and demonstration of specific skills and knowledge rather than solely on the completion of coursework or time spent in a classroom. According to Gage (1978), CBTE is an approach to teacher education that emphasizes the acquisition of specific competencies as the primary goal of teacher training. McNeil and Popham (1970) also define CBTE as a program that is designed to provide the student with a set of competencies deemed essential for effective teaching.

Shulman and Shulman (2004) provide insight in the curriculum implication of CBTE by describing CBTE as a movement away from the traditional model of teacher education that emphasizes subject matter knowledge and general pedagogical knowledge toward a model that highlights the importance of specific teaching skills and the ability to apply them in authentic contexts. In agreement with this, the CBTE curriculum in Kenya is aimed at exposing teachers to experiential learning that grounds them in subject content knowledge, hones their pedagogical skills, equip them with technological competencies, assessment competencies and other related professional competencies.

CBTE has paved the way for the initiation of teacher upgrading programs. In this study, upgrade teacher training programs are tailor-made professional development courses for teachers to advance their competencies and skills. Upgrade programmes are designed to equip practising teachers with competencies and skills required to implement the Competency Based Curriculum (CBC).

2.2.3 Competency Based Teacher Assessment

The assessment carried out for teacher trainees going through the CBTE curriculum is referred to as Competency-based teacher assessment (CBTA). The study has conceptualised CBTA to refer to the process of gathering information on the extent to which a teacher trainee can competently apply skills and competencies learnt to effectively complete assigned tasks. CBTA employs a variety of assessment methods and tools. There are two main types of assessment in CBTE; Formative assessment and Summative assessment.

2.3 Review of the relevant Related Theories

Theories have variously defined the role of the teacher and the manner in which the teacher ought to be educated for this role. This study is anchored on the Constructivism theory which has been summarised in the following section.

2.3.1 Constructivist Theory

The Constructivist theory has gained significant attention in the field of education due to its unique perspective. It posits that learners actively construct their own understanding and knowledge of the world by interacting with their environment. According to Jonassen (1991), constructivism is based on the idea that “knowledge is constructed, not transmitted”.

This means that learners must engage in active, meaningful, and relevant learning experiences in order to construct their own understanding of the world around them.

Traditional scholars like Piaget (1952) and Vygotsky (1978) have been instrumental in shaping the constructivist theory. Piaget's work on cognitive development underscores the importance of learners actively constructing their own knowledge through interactions with their physical and social environment. Vygotsky's sociocultural theory puts emphasis on the role of social interactions and cultural contexts in shaping learners' cognitive development. According to Vygotsky, learning takes place through collaborative interactions with more knowledgeable others, such as teachers, peers, and family members.

Modern scholars have expanded on the traditional constructivist theory by incorporating recent advancements in technology and neuroscience. For example, Siemens (2005) introduced the concept of connectivism, which emphasises the role of technology in facilitating learners' connections with information and people around the world. Similarly, Bransford, Brown, and Cocking (2000) suggest that learners' prior knowledge and experiences influence their ability to construct new knowledge. They argue that effective constructivist pedagogy should focus on providing learners with authentic and relevant learning experiences that build on their existing knowledge and experiences.

The constructivism theory has significantly influenced educational planning and pedagogical decisions at the teacher education level.

2.3.2 Relevance of Constructivism Theory to Competency Based Teacher Training

As a modern teaching theory, constructivism proposes reforms in trainers' views and their daily teaching activities (Xu et al., 2018). The constructivism theory supports the creation of an effective learning environment for all students, which is in line with the CBTE mission that advocates for a professional, reflective, and ethical teacher educator. The vision is to lead to a competent and committed teacher who can nurture every teacher trainee's potential. This is critical for CBTE since meaningful learning experiences will influence professional work during practicum and actual teaching.

Constructivism theory discusses various conceptual approaches to constructivist pedagogy that allows trainees to engage and take charge of their own learning. The key idea of constructivism is that meaningful knowledge and critical thinking are actively constructed in

a cognitive, cultural, emotional, and social sense. Individual learning is an active process that involves engagement and participation in the classroom. This idea is most relevant to the recommended transformative and interactive pedagogical approaches embedded in CBTE, which emphasises active learning and participation in learning activities, manipulation of learning resources, and real tasks by trainees.

The theory also emphasises the process of creating effective learning environments in teacher training colleges. The effectiveness of constructivist learning and teaching is dependent on both educators' and students' characteristics, motivational atmosphere, effective utilisation of learning resources and teachers' classroom strategies, effective preparation for and the quality of teachers. Training should guide trainees to produce new knowledge and experience from prior learning, achieving the mutual connection of new and old knowledge.

Constructivism learning theory illustrates the point deeply that trainees construct understanding rather than simply mirroring and reflecting on what they receive or read (Clark, 2018). In essence, trainees construct understanding rather than simply mirroring and reflecting on what they receive or read. In regard to teacher training, it is imperative that the course designs take into consideration pedagogies that allow the trainees to proactively engage in knowledge construction. Trainees should be impressed upon to look for meaning and try to order the events of learning even in the absence of full or complete information.

To accomplish this, teacher educators should replace the more or less passive recipient of knowledge with an active learner. In the traditional model, knowledge is assumed to fit reality the way a key fits a lock. It is the difference between the concepts of "fit" and "match" that shows how radically constructivism in teacher training differs from the traditional view of knowledge (Steffe et al., 2020).

2.4 Review of Relevant Policy Documents

Policy documents play a crucial role in shaping the landscape of governance and decision-making, serving as blueprints for action and frameworks for regulation. This section delves into the realm of policy documents within the broader context of literature review, examining their significance as sources of information and their role in informing and shaping research agendas pertaining to Competency Based Teacher Education.

2.4.1 The Mackay Commission report of 1982

One of the most influential education Commissions was the MacKay Commission of 1982. The Mackay Commission recommended that teacher education should be strengthened in order to improve the quality of education. The commission recommended that teacher education institutions should be reviewed to ensure that they were producing teachers with the necessary skills and competencies to teach effectively. Additionally, the commission recommended that teacher training courses should be extended from two to three years, and that all teachers should be required to undertake in-service training. The commission also recommended that teacher education institutions should be linked with the universities to ensure that teachers were given the necessary academic grounding.

2.4.2 Sessional Paper No.1 of 2005

The policy framework for education and training: reforming education and training in Kenya, puts emphasis on teacher professional development. The paper aimed to address the challenges facing teacher education in Kenya and to improve the quality of education by ensuring that teachers are well-prepared and supported in their roles.

It recommended improvements on the quality of teacher education programs by improving the curriculum, teaching methods, and assessment processes. It also recommended enhancing teacher competency through the professional development and continuous training of teachers to ensure they are equipped with the necessary skills and knowledge to effectively teach in modern classrooms. The paper further recommended establishing and strengthening the collaboration between teacher training institutions and schools to provide practical experience and mentorship for teacher candidates. Additionally, it recommended improving the recruitment and selection processes for teacher training to ensure that only the most qualified individuals are admitted to teacher education programs. Monitoring and evaluation of teacher education programs to ensure they meet the required standards and are effective in preparing teachers for the demands of the profession was also recommended.

2.4.3 The Kenya Vision 2030

This is the blueprint that guides the government on how to transform Kenya into a middle-income industrialised country by 2030. The vision is to achieve a globally competitive quality education and training. Quality education can be ensured by providing competent and professional teachers. Therefore, to achieve these aspirations, Kenya aims at

quality teacher training through modernising teacher education. The key features of this modernisation is the focus on skills and competencies, integration of ICT, inclusion of research and the emphasis placed on technological, pedagogical and content knowledge (TPACK).

2.4.4 The Odhiambo Task Force Report of (2012)

The taskforce report on the re-alignment of the education sector to the Constitution of Kenya 2010, recommended that there should be harmonisation in teacher training, pointing out the training for pre-primary teachers. The taskforce recommended the orientation of teacher educators on the pedagogy and skills required in teacher education. Additionally, the taskforce recommended that resources be availed to support curriculum implementation in the teacher training colleges to facilitate learning. Support of teacher trainees during practicum was also highlighted by the report, a duty given to schools and the community. Effective monitoring of the standards and quality of teacher training at the teacher training colleges was also recommended.

2.4.5 Basic Education Act (2013, revised 2022)

The Basic Education Act of Kenya 2013 states that all teachers in public primary schools must have at least a diploma in teacher education. Additionally, the act outlines the requirements for teacher education programs, including the need for pre-service teachers to complete a one-year teaching practice.

2.4.6 The Task Force Report (2020)

The Taskforce on Transition, Equity and Quality for Effective Curriculum Reforms Implementation (2020), recommended the conceptualization and design of competency based pre-service teacher education and capacity building of teachers at all levels under basic education. Besides comprehensive monitoring and evaluation.

2.4.7 Sessional Paper No.1 of 2019

The sessional paper recommended reform in education, training and research in special education. It also recommended the strengthening of continuous professional development of pre-primary and primary school teachers.

2.4.8 Presidential Working Party Report on Education Reform (2023)

The Presidential Working Party on Education Reform (PWPER, 2023) report recommended the following on Teacher education; the MoE to develop guidelines on how all teachers who graduated before 2023 would undergo a mandatory one-year retooling and upgrading programme for compliance with the curriculum change; the minimum entry grades for pre-service TE programmes be as follows: DECTE and DPTE- C (Plain) in KCSE or its equivalent in senior school; DSTE – C (plain) in KCSE or its equivalent in senior school with C (Plus) in teaching subjects, DSTE – C (Plain) in KCSE or its equivalent in senior school; and DTTE – C (Plain) in KCSE or its equivalent in senior school with C+ in related STEM teaching subjects.

2.5 Review of Related Previous Research

A comprehensive understanding of the research landscape is crucial for positioning the current study within the broader context of scholarly discourse. This section presents a critical examination of relevant and pertinent literature, providing an overview of the key findings and methodological approaches employed in previous investigations. The aim is to contextualise the current study within the existing body of knowledge, highlighting its contributions to the field of TE and identifying potential areas for further exploration. The chapter begins with a discussion on Competency Based Teacher Education in Kenya and progresses to an examination of literature that has been done separately for each objective.

2.5.1 Competency Based Teacher Education in Kenya

The Kenya Institute of Education, currently KICD (KIE, 2009), conducted a summative evaluation report of the 8:4:4 system, which revealed significant gaps in the implementation of the curricula at school level. As a result, this compromised the quality of education offered in schools. The study recommended that the teacher education sub-sector undergo reform.

In 2016, KICD conducted a Needs Assessment study on Teacher education reform in TTCs in Kenya, which established gaps in the curricula at the teacher training level. Additionally, there was limited capacity building for pre-service teachers. To address these issues, the report recommended a needs assessment for teacher education. The assessment would inform the nature of reforms to be undertaken, including upgrading the entry into Teacher Education. It also recommended standardisation of the levels, with Early Childhood

Development Education (ECDE) and Primary Teacher Education (PTE) taken at the Diploma level to take two years. The report also recommended a fresh impetus on practicum right from conceptualization, with principals and teachers playing their roles more effectively (KICD, 2016).

Significantly, the report acknowledged that the supervision and assessment of practicum should be done by specially trained teachers. It recommended achieving an appropriate balance between professional (Education) studies, content, and pedagogy, inclusion of mentoring as a core area of learning in Teacher Education should also be prioritised. Additionally, the report recommended formative assessments that encompass more continuous assessment tests, projects and practicals. Formative examinations should be distributed at the end of terms, as is the case in universities.

This report emphasised promotion of learner-centred/participatory pedagogical approaches in Teacher Education, which aim at imbuing graduates with the necessary skills upon graduation. Pedagogical approaches should be cognizant of the 21st century learners mostly hinged on ICT and digital platforms. The teacher educators also pay attention to pedagogical approaches that appreciate diversity of learners and special needs.

A report by the Ministry of Education in Kenya (2018) highlights major concerns about the quality of education provided by Teacher Training Colleges (TTCs). The report reveals that TTCs lack adequate infrastructure, resources and qualified personnel, which negatively affects the quality of education they provide. Furthermore, inconsistencies in the implementation of the curriculum in TTCs lead to variations in the quality of education provided.

In the monitoring and evaluation (M&E) report on piloting in TTCs (KICD, 2020), the Ministry of Education (MoE) recommended organising comprehensive subject-based training for teacher educators. The report recommended that KICD consider merging professional courses to reduce the duplication of content and maximise limited time and human resources. Additionally, inconsistencies in DECTE and DPTE Curricula designs to be addressed. KICD was also to fast-track the provision of adapted curriculum for visually impaired students.

The report also recommended that MoE support TTCs in the provision of multimedia devices and reliable internet that will support Competency-Based Teacher Education (CBTE) pedagogy and learning. It recommended that the Teachers Service Commission (TSC) post teacher educators for new learning areas and specialists in Braille and Music. Pertaining Special Needs Education (SNE), it was recommended that MoE and other stakeholders should provide specialised learning resources for Special Needs Education (SNE) teacher trainees.

In the M&E report on Upgrade (2021), found that teacher educators were finding it difficult to cover content of the designs within the stipulated time. The report pointed out that subjects do not have tutors completely while some have inadequate tutors to facilitate learning of the teacher trainees in some teachers training colleges. It was also reported that there is too much content to be covered within a short time which is not realistic hence affecting effective implementation. Furthermore, teacher educators were reported to work in a constrained atmosphere with insufficient teaching aids, with chalk being the only instruction material that they are guaranteed on a regular basis. Lesson preparation books, teachers' educator manuals, and stable internet connectivity are not available to most teacher educators.

A number of recommendations were made on the implementation of Upgrade programs. These include: MoE should equip all teacher training colleges with adequate learning resources such as textbooks and tablets; ICT. Stakeholders should enhance the availability of internet connectivity to teacher training colleges such as establishing accessible ICT hubs. Based on the report that there were inadequate teacher educators to handle large classes in the Upgrade program. It was recommended that more staff be hired to improve the uptake. Lastly, sensitization on the upgrade program was also necessary to encourage all P1 teachers to Upgrade to the Diploma program.

2.5.2 Preparedness of Teacher Educators to Implement CBTE

The implementation of the Competency-Based Teacher Education (CBTE) curriculum requires teacher educators to be adequately prepared in terms of access to training, frequency of training, and impact of capacity retooling. CBTE focuses on the acquisition and demonstration of specific competencies and skills by prospective or practising teachers. To enable teachers to develop these competencies, teacher educators are required to have the

capacity to carefully design, assess and support systems to ensure that teacher trainees are indeed developing the necessary competencies to be effective teachers.

There has been increased attention for years now, whether the teacher educator standard is the most significant school factor affecting learners' success and enhancing the standard of the school (Kang et al., 2013; Macia & García, 2016). Similarly, academic leaders, theorists, and scholars have emphasised how to best improve the standard of teaching through empowering teacher educators. The teaching job demands ongoing education and growth since it is directly involved with human capital (Harris & Jones, 2010). This accounts for why nations spend billions of dollars on enhancing the standard of their educators' skills and eligibility by building their chances for professional development (PD) (DeMonte, 2013).

The standard of teacher education has been known as a central issue influencing the standard of teaching and learners' success. Though teacher educators play a crucial function in the training and assisting of future educators, research literature and documents on who educator trainers are and how they professionally influence education are not examined until recently (Czerniawski et al., 2017). Therefore, there has been an increasing attention to teacher educators with a focus on their individuality, skills, functions, and professional development (Lunenberg et al., 2014).

According to Livingston (2014), until recently, teacher educators were characterised as concealed experts who are not always presented with the help and challenge they require, for instance concerning their learning and PD. Teacher trainers are among those who are engaged in the learning of learners, educators, and ongoing PD of in-service educators (Czerniawski et al., 2017). Just as the excellence of teachers influences the learning results of students, the eminence of teacher educators impacts the quality of teachers (Darling-Hammond, 2010).

A study by Buchberger et al. (2000) found that improving the skills of teacher educators can lead to a significant increase in the quality of teachers. Teacher educators need to have the knowledge and skills in the field they teach. They can acquire these skills through Professional Development (PD) during their training and throughout their careers (Butler, 2015; Margolis, 2008). PD is essential for educators to keep their knowledge and skills up-to-date, stay motivated, and collaborate with others. Throughout history, no attempt at

educational improvement has been successful without carefully planned and well-executed PD programs designed to enhance teachers' knowledge and skills (Guskey, 2009).

Professional development (PD) for educators is now deemed as a crucial element of guidelines to improve the standard of teaching and education in colleges. Therefore, there is prominent attention to studies that determine attributes of successful professional education (Ingvarson et al., 2005). Preparation of Teacher educators' is an inevitable cycle and a crucial component of enhancing learning overall. Teacher trainers should be dynamic mediators in their growth by keeping themselves up to date with novel information developing and improving knowledge on education and teacher instruction to enhance and boost their own teaching. It is crucial to note that teacher educators have numerous roles, which need professional development (PD)and learning. Professional educators should be able to grow knowledge in making well-informed choices regarding activities with approaches that can respond to complicated conditions according to complicated knowledge and reflection (Loughran & Hamilton, 2016). These studies highlight the importance of teacher educator retooling programmes such as those undertaken by MoE in Kenya in 2023.

There has been increased attention on whether teacher educator standards are the most significant school factor affecting learners' success and enhancing the school's overall quality (Kang et al., 2013; Macia & García, 2016). Academic leaders, theorists and scholars have emphasised the importance of empowering teacher educators to improve the standard of teaching. Teaching is directly involved with human capital and demands ongoing education and growth (Harris and Jones, 2010). This is why nations spend billions of dollars to enhance the standard of their educators' skills and eligibility by building their chances for professional development (PD) (DeMonte, 2013).

Teacher education is known to be a central issue influencing the standard of teaching and learners' success. Therefore, there is increasing attention given to teacher educators- their individuality, skills, functions and professional development (Lunenberg et al., 2014). Despite their crucial function in the training and assisting of future educators, teacher education research literature and documents on who teacher educators are and how they professionally influence education are not examined until recently (Czerniawski et al., 2017).

Several studies have been undertaken to provide a rationale for the preparedness of teacher educators for their roles. Al- Fahad and Alotaibi (2021) conducted a qualitative case study of a teacher education program in Saudi Arabia to examine the role of teacher educators in implementing CBTE. The findings showed that teachers educators are responsible for designing, assessing, and supporting the acquisition of competencies by student teachers. Until recently, teacher educators were characterised as concealed experts who were not always presented with the help and challenge they required, for instance, concerning their learning and PD (Livingston, 2014). Teacher educators are among those who are engaged in the learning of learners, educators and the ongoing PD of in-service educators (Czerniawski et al., 2017). Just as the excellence of teachers influences the learning results of students, the eminence of teacher educators impacts the quality of teachers (Darling-Hammond, 2010).

According to Buchberger et al. (2000), the growth and future of teacher education depend on the proficiencies of teacher educators, which can contribute to significant growth in the quality of teachers. Educator quality requires educators to have the knowledge and skills in the field they teach. Educators obtain these skills through their program (Butler, 2015) and through professional development (PD), which has a vital function in a teacher educator's future professional development.

Educators require opportunities to increase their knowledge and skills, maintain their incentives, and expand their cooperation with others in their careers (Margolis, 2008). No attempt at advancement has ever been successful without carefully arranged and well-executed Professional Development (PD) actions planned to improve teachers' knowledge and skills (Guskey, 2009). Professional development (PD) for educators is now deemed as a crucial element to improve the standard of teaching and education in colleges. Therefore, there is prominent attention to studies that determine attributes of successful professional education (Ingvarson et al., 2005). Preparation of teacher educators is an inevitable cycle and a crucial component of enhancing learning overall. Teacher trainers should be dynamic mediators in their growth by keeping themselves up-to-date with novel information, developing and improving knowledge on education and teacher instruction to enhance and boost their own teaching.

It is important to note that teacher educators have numerous roles, which require professional development (PD) and learning. Professional educators should have the ability

to grow knowledge in making well-informed choices regarding activities with approaches that can respond to complicated conditions according to complicated knowledge and reflection (Loughran and Hamilton, 2016). Classes today have become more complex due to higher levels of diversity and technology, resulting in a generational gap (Gomes et al., 2015; Sonmark et al., 2017). Thus, an educational space is a place for learners to attain novel knowledge and skills, and a workplace where educators can study and enhance their careers. This implies that educational programmes should target both learners and educators.

Despite these studies providing the rationale for preparation of teacher educators for their role, some studies reveal a lack of preparedness of teacher educators for their roles and the impact this has on teacher training. For instance, Khan et. al (2020) posits that teachers come to their careers with little formal professional training or experience. He further argues that lack of professional training and professional development of teachers can be a key source for any dissatisfaction in the quality of their teaching to form competent students with the necessary knowledge and skills in the different subject matters.

A report by UNESCO (2015) revealed that most teachers in Kenya lack curriculum support and content mastery. Further, it reported that inadequate teacher professional development programmes have been blamed to be the root cause of teacher incompetence. Unprepared teachers are impediments to the successful implementation of a curriculum (Rop, 2013). This report underscores the importance of programmes geared towards the training of teacher educators, and indicates that a lack of the necessary knowledge and skills on the CBTE curriculum influences how the educators interpret the curriculum.

To highlight the plight of teacher educators, Smith (2010) opines that while teacher trainers have several complicated functions, they obtain the least preparation or opportunities for professional development to perform such functions. Consequently, they require getting the related knowledge and skills after accepting the role of teacher trainers. Within such programs, educators take the primary measures toward being specialists, achieve higher confidence in their education, and expand the scope of their knowledge reservoir (Blank & Alas, 2010).

A survey carried out in Malaysia investigated the preparedness of teacher educators in implementing Competency-Based Teacher Education (CBTE) (Ramli et al., 2021). The survey results indicated that teacher educators perceived themselves to be moderately

prepared in terms of their knowledge and skills in implementing CBTE. The study highlights the need for teacher educators to possess the necessary knowledge, skills, and support to effectively implement CBTE, and emphasises the importance of providing teacher educators with ongoing professional development opportunities and support to ensure their preparedness.

Furthermore, Makunja's 2016) study on challenges facing CBC found out that lack of in-service and pre-service training to teachers on CBC is an alarming challenge in the implementation of competency based curriculum. Therefore, if CBTE is to be realised, teacher educators must continuously be updated with the knowledge and skills through teacher professional development workshops in order for them to transmit the same competencies to pre-service teachers. CBTE often requires teachers to acquire new teaching methods, assessment strategies, and technology integration skills. A teacher's understanding and interpretation of a curriculum is a major factor in implementation of the intended curriculum (Shawer, 2017).

The monitoring and evaluation report on piloting in TTCs (KICD, 2021) revealed that most teacher educators were not adhering to the preparation of professional documents in line with CBTE guidelines. Consequently, most teacher educators were having difficulty in interpreting the curriculum designs. Furthermore, the monitoring report reported that 93.4% of teacher educators were not specialised in teaching ECDE and Primary level. The report also indicated that the duration for capacity building programmes was inadequate for effective implementation of CBTE. The report recommended that suitable professional development programmes be developed for the teacher educators to orient them on CBTE.

Similarly, Orina (2022) found out that the majority of the teachers implementing CBC relied on the lecture and question and answer methods. They had insufficient knowledge regarding Competency-Based Curriculum assessments. This was attributed to the fact that most of the teacher educators possess skills for training teachers for the 8-4-4 system of education and therefore implementing CBC without re-orientation.

A study by UNESCO (2020) was done in Kenya to assess the extent to which the curriculum is being implemented in TTCs and evaluate the effectiveness of the CBTE curriculum in preparing teachers to teach at different levels of basic education. The study found out that

there is a need to improve the quality of education provided in TTCs in Kenya. The study recommended among others the need to address issues of inadequate training of teacher educators, which affects the quality of education provided in TTCs.

These studies reviewed have highlighted the need to have programmes to facilitate professional development and the preparedness of teacher educators to implement CBTE. This then poses the question of how these teacher education programmes should be structured and facilitated. This dilemma has been deliberated upon in several studies.

One of these studies is a study by Egbert and Shahrokini, (2019) on teacher preparation and professional development in line with CBTE implementation. The study established that training should focus on the acquisition and demonstration of specific competencies or skills by prospective or practising teachers instead of relying solely on traditional coursework and time-based requirements. However, implementing CBTE can be complex, as it requires careful design, assessment, and support systems to ensure that teacher educators are indeed developing the necessary competencies to be effective trainers.

Another study by Schleicher, Andreas (2018) states that the effectiveness and efficiency in training of teachers should be spiral from top of the pyramid to the grassroots, then translated into instructional material, teacher education and learning environments, often through multiple layers of government, until they reach individual teachers in the classroom. Teacher training is important for both experienced and those teachers who are novice to the teaching profession, therefore the nature of the training must be tailored to innovative pedagogy, interactive assessment techniques and use of differentiation instructions in the classroom (Tunjera, 2019).

To uncover effective modes of training for teacher educators, Chen et al. (2019) conducted a systematic review of research published between 2009 and 2018 to identify the optimal modes of training for teacher educators under CBTE. The study findings showed the following as effective modes of training for improving teacher educators' knowledge and skills in designing, assessing, and supporting CBTE programs: workshops, mentoring/coaching, and collaborative learning. The study noted however that the effectiveness of these modes of training is influenced by factors such as the content of training, level of engagement, and context of implementation. The study recommended that

teacher education institutions adopt a combination of these modes of training and tailor them to meet the specific needs of their teacher educators.

In relation to the content of training, training of teacher educators should be in line with the needs of the teaching profession in the 21st century. The integration of technology into education is no longer an option, but a necessary reality in the 21st century. Teacher capacity is essential in successfully incorporating technology into teaching and learning, and in developing the necessary skills in students. Teacher capacity is a core enabler in successfully integrating technologies into teaching and learning, and helping develop the necessary skills in the minds of students (Ramya Vivekanandan,2019).

Traditional-based teaching methods must shift to research-theory-based teaching, which requires teachers to stay informed on new research findings to improve the quality of teaching. Professional development is necessary to support innovative and beneficial teaching practices, and participatory capacity-building methods should be encouraged within institutions. Regular needs analysis can facilitate the identification of areas where teacher capacity needs to be developed (Celik &Anderson 2021).

Though providing relevant training content is required for the implementation of the Competency Based Curriculum (CBC), some of the professional development training models utilised in Kenya have come under criticism. An example of such models is the cascade model of training teachers which has been criticised for shallow content coverage during the In-service education training (INSET) teacher professional development programmes. According to Bett (2016), attempts to balance between quality and quantity have brought about dilution of INSET content hence minimal application of theory to practise. Watene (2020) argues that poor organisation of INSET, has hindered the development of quality teacher Pedagogical Content Knowledge (PCK) and teacher educators' deeper knowledge and confidence on the subject matter.

The effectiveness of PD programmes lies in their organisation, time allocation and training content. Therefore, the time allocated for the PD programmes should be enough to cover content in detail if at all knowledge of the subject matter is to be achieved by the teacher educators. Teacher re-orientation quest towards new paradigm shifts needs to address each teacher education level-specific challenges. For instance, pre-primary competency

curriculum is likely to scuffle with old usual unaddressed challenges like the majority of teacher trainers lacking teacher education training qualifications (Watene, 2020).

Teacher educator motivation also plays a key role in determining the success of preparation programmes. A study was carried out by Huang et al. (2003) on motivation to teach and preparedness for teaching among pre-service teachers was conducted in China with an aim of establishing the effects of conscientiousness and constructivist teaching beliefs. The findings revealed that the starting point for teacher preparation is the motivation to teach in widely situated as what drives pre-service teachers (PSTs) to learn, and is thus mainly reflected in the motivation to receive teacher education.

Similarly, Sinclair (2008) and Torsney et al. (2019) affirmed that being motivated to teach implies that Pre-Service Training (PSTs) understand their own abilities, interests, ambitions, and limitations and the roles and responsibilities, conditions, requirements, and environments central to their careers. The report revealed a strong positive relationship between motivation to teach and commitment to teaching. However, Zhang et al. (2019) pointed out that PSTs' different motivations have different relationships with the commitment to teach, therefore, further research on how motivation to teach, which is related to other psychological attributes, affects preparedness for teaching is necessary. Though differing in their interpretation of what affects preparedness for teaching, these studies highlight important aspects such as motivation and psychological attributes as determinants of teachers and teacher educators' preparedness for teaching.

Preparedness of teacher educators requires planning. This planning is usually encased in policies and guidelines that provide clear direction on how teacher educators' preparedness can be boosted. This has been brought out by Cochran-Smith et al. (2017) in a study in the USA. The study indicates that the Teacher policy was a key component of teacher education reforms because it considered central holding teacher education accountable' and an avenue for improving teacher education quality. On the other hand, Larsen (2010) posited that teacher quality is in the policy spotlight in many countries largely as a consequence of concerns about the results of international assessments of student achievement and related country comparisons. The reality is teaching quality and teacher education quality policy are seen as key levers to improving a country's economic development and global competitiveness.

Translation of competencies gained into actual pedagogical practice is proving challenges for teacher educators. Upendo (2022) carried out a study in TTCs in Tanzania and revealed that teacher educators were unable apply the knowledge gained during training or integrate in competency based approaches (CBA). They also reported poor collaboration among tutors at the college and other colleges on how to integrate the knowledge of CBA in the classroom. Apparently there was lack of follow-up support by curriculum experts after training and non-involvement of tutors in designing the teaching approaches. According to the report, there were fewer follow-up activities were only carried out once in a while to assess the application of CBC through inspecting lesson preparation materials such as the scheme of work and lesson plans, observing teaching processes in the classroom, provide professional support and advice about the implementation of CBC.

2.5.3 Effectiveness of Planning by The Teacher Educators in CBTE Implementation

Planning and preparation are important ingredients in teacher preparation and mentoring programmes, and are critical in ensuring the success of teacher education programmes. Teacher-trainees need to internalise these two skills; planning and preparation in order to become better teachers upon completion of their teacher training (Baartman, 2016). For Sempowicz and Hudson (2011), planning therefore entails methods, techniques, content, assessment, skills and objectives, and time. It is a major component of classroom management practices including teacher trainee relationships, which need to be internalised. Ingersoll (2012) further stressed that during planning and preparation, teacher trainees need to have quality time with their mentors including teacher educators, as they go through what is to be taught, and if interaction takes place, they could be instilled with confidence.

To put this into context, Konig et al. (2020) postulate that in teacher education programs, pre-service teachers are provided with opportunities to develop their knowledge of and skills in planning. They further argue that even though certain teaching approaches may be connected to certain ways of planning, the more theoretical aspects of planning are usually taught to pre-service teachers as overarching frameworks or didactic models for what to consider, and often in what order, during planning.

Teacher training and development refer to the processes and practices through which teachers gain, deepen, and expand their professional knowledge, skills, and dispositions. These processes and practices are complex and occur both over the course of teachers'

careers and across multiple contexts, including universities, schools, and professional networks and associations (Dorothea, 2019).

Macsuga-Gage et al. (2012) pointed out that instructors with mastery skills engage in self-management and consultation, tracking their usage of classroom management skills and developing action plans to modify their practices based on data. This acts as the most effective way of monitoring progress and assessing how the practice has impacted student outcomes. Bain (2004) states that organisation and planning assess several key factors: an instructor's ability to clearly communicate course expectations, create course assignments that aid student learning, prepare lessons that demonstrate knowledge of course content, and emphasise relevant course concepts.

Effective instruction, Creasy (2015) argues, requires three vital elements. One is content knowledge is certainly necessary to provide learners with accurate information to be learned and later applied in life situations. The second is skills, the methods of instruction that peak a student's interest and make the learning meaningful and memorable. Lastly, dispositions viewed as professionalism. In teacher education literature, most of these definitions agree that a professional demonstrates behaviour which portrays the knowledge and skills of the profession. Thus, professionalism is defined as "an ideal to which individuals and occupational groups aspire, in order to distinguish themselves from other workers".

The Interstate New Teacher Assessment and Support Consortium (INTASC) (2013) and the National Board for Professional Teaching Standards (NBPTS) (2012) asserted that instructional planning is a key aspect of any teacher's work in order to give students meaningful learning experiences. This is in agreement with many scholars who affirm that planning for instruction is thus a critical step that all effective teachers take, whether intentionally or intuitively (Ko, 2012; Thompson & Stryker, 2010), Marshall, 2012). Planning may appear simple but going through the day-to-day planning motions does not guarantee meaningful activities will avail without proper planning (Marshall, 2012). The goal of planning is to ensure student learning; therefore, planning helps create, arrange and organise instructional events to enable that learning to occur.

Marshall (2012) concluded that effective teachers are effective planners as it would be difficult to carry out effective instruction without having a concrete solid plan beforehand.

Therefore, effective planning processes combined with appropriate teaching techniques lead to high quality learning experiences at all educational levels.

Danielson (2007) had similar findings in a study that identified aspects of teacher responsibilities. The four domains of teaching responsibility highlighted by Danielson (2007) were: (1) planning and preparation (2) classroom environment (3) instruction (4) professional responsibilities. These domains are reflected in three areas of planning by teacher educators that this study will focus on. These are preparation of professional documents, micro teaching and practicum.

Planning and Professional Documents

Studies done also show that teacher educators play a critical role in the planning and preparation of professional documents. A study by Aziz, Aziz, and Adnan (2019) found that effective teacher educators must possess strong planning and organisational skills to prepare training modules and other professional documents. Furthermore, they must also have a deep understanding of the content area they are teaching and be able to communicate it effectively to their trainees.

In another study conducted in Indonesia, Alfiani and Nurcholis (2023) analysed strategies for designing effective lesson plans in microteaching practices perceived by Indonesian teacher trainees pursuing English Language. The results showed the strategies applied by teacher trainees in designing a good lesson plan, for the success of the microteaching course. The findings indicated that teacher trainees had the status of a prospective teacher, and knew the importance of a lesson plan in the learning process as it was proof of a teacher's preparation. A study by Wanyama and Simiyu (2018) found that the effectiveness of teacher educators in planning and preparation of professional documents is closely linked to their level of experience and training. The study recommended that teacher educators should be provided with continuous professional development to enhance their planning and preparation skills.

Similarly, a study by Ndegwa and Kimani (2020) found that teacher educators who use innovative teaching methods and incorporate technology in their planning and preparation of professional documents are more effective in delivering training to their trainees. The study

recommended that teacher educators should be encouraged to use innovative and technology-based teaching methods to improve the quality of their training.

These studies highlight the importance of effective planning and preparation of professional documents by teacher educators. Teacher educators should possess strong planning and organisational skills, have a deep understanding of the content area they are teaching, receive continuous professional development, and incorporate innovative and technology-based teaching methods in their training.

2.5.3.1 Catering for Learners' Needs during Planning for Instruction

One of the guiding principles prescribed in implementing the Competence Based curriculum in Kenya is the promotion of diversity and inclusion (KICD, 2017). This principle is an integral part of instructional practices in teacher education. Several studies have been conducted in areas relating to inclusive education and specialised programmes for teachers.

One such study is Robinson's (2017) work that explores the effective variables for preparing teachers for inclusive education. It was found that collaboration, using research-based models, field experience, effective practices, and Evidence-Based Practices (EBPs) are the main elements of inclusive practices. Additionally, Kurth et al. (2015) categorised supportive inclusive practices for students with severe disabilities into seven themes: teaching and instruction arrangements, classroom engagement, available support, form of support, type of activities for students, interactive relation of students with others, and opportunities for students. By focusing on these variables in teacher preparation programs, pre-service teachers can be better prepared to teach in inclusive classrooms.

Researchers have also discussed the positive outcomes of well-structured teacher education programs on pre-service teachers' concerns about inclusive education (Golder et al., 2005; Pearson, 2007). Ahsan et al. (2013) found that teacher education programs are effective in preparing pre-service teachers for their future roles in inclusive educational settings.

A study by Khan et al. (2021) found that results extracted from the data of the classroom observations were in line with the prospective teachers' responses against the questionnaire. For instance, it was observed during the lessons that the prospective teachers considered the individual differences in the classrooms. In doing so, they planned a variety of activities for the students involving individual, pair and group work, and presentations. They had

designed a variety of collaborative activities for the students while taking care of the individual strengths of the students. A prospective teacher said,

“I knew from the university class that students are different from each other and they learn through different ways. Therefore, I plan my lessons considering that all the students in my class should have opportunities for learning”.

Another prospective teacher reflected,

“I observed that in my class there were different types of students; some were very shy, some hyperactive, and some responded differently to different situations. Therefore, my role as a teacher was to involve all the students in learning through considering individual differences*”*.

Additionally, studies have also highlighted the benefits of microteaching to the development of instructional skills relevant to inclusive settings. A study by Mutheu and Wambugu (2021) examined the impact of microteaching on the teaching competencies of pre-service teachers in special needs education in Kenya. The study found that microteaching improved the pre-service teachers' pedagogical skills and their ability to adapt teaching strategies to meet the needs of students with special needs.

These reflections highlight the importance of the need for teacher educators to be aware of teacher trainees who have a variety of learning needs and catering to those needs. However, further studies indicate that though teacher educators play the critical role of catering to the needs of teacher trainees with special needs, they require specialised training to be effective in this role.

According to a study by Adie et al. (2015), teacher educators play a critical role in catering to trainees with special needs. The study found that teacher educators who had undergone specialised training were more effective in supporting trainees with special needs. In addition, teacher educators who had a positive attitude towards inclusive education were more likely to create an enabling environment for trainees with special needs. The study recommended that teacher educators receive regular training on inclusive education to enhance their effectiveness in catering for trainees with special needs.

Woodcock and Hemmings (2012) conducted a study to determine whether pre-service teachers' views (and concerns) about inclusion and their confidence to teach in inclusive classrooms had changed as a result of studying an inclusive education subject and undertaking a practicum linked to that subject. The pre-service teachers indicated they feel unprepared to meet the high and diverse needs of students with special education needs because of limited time and training, as inclusive education courses only comprise a small proportion of their teacher education. The study recommended teacher education programmes geared towards preparing teachers on inclusive instructional practices.

Another study by Osgood and Fagan (2016) explored the experiences of teacher educators in catering to trainees with special needs. The study found that teacher educators faced various challenges in catering for trainees with special needs, including limited resources, lack of specialised training, and inadequate support from school administrators. However, the study also found that teacher educators who had undergone specialised training on inclusive education were more effective in catering for trainees with special needs. The study also recommended that teacher educators receive specialised training on inclusive education to enhance their effectiveness in catering for trainees with special needs.

A more recent study by Butcher et al. (2020) investigated the impact of a professional development program on teacher educators' knowledge and skills in catering to trainees with special needs. The study found that the professional development program improved teacher educators' knowledge and skills in catering for trainees with special needs. In addition, the study found that teacher educators who had undergone the professional development program were more likely to create an inclusive learning environment for trainees with special needs. The study recommended that teacher educators receive regular professional development on inclusive education to enhance their effectiveness in catering for trainees with special needs. These studies, in their findings attest that teacher educators play a critical role in catering for trainees with special needs. Additionally, they suggest that specialised training and professional development programs can enhance teacher educators' effectiveness in catering for trainees with special needs.

2.5.3.2 Planning and Microteaching

Teacher training institutions have adopted various strategies in enhancing the teaching capacity of preservice teachers (PTs). One of the strategies is microteaching, which falls

under the teaching practicum component of the teacher education programme. Other components are subject content, pedagogy, education and professional studies (Lewin & Stuart, 2003). Microteaching reduces the complexity of the tasks involved in teaching for student-teachers to understand and learn the "how" of teaching (Reddy, 2019). Through microteaching, student-teachers are made to teach lessons developed for short periods, usually for 5 to 20 minutes. Microteaching focuses on core skills such as lesson planning, introduction, presentation and explanation, stimulus variation, use of teaching aids, board writing, reinforcement, probing, classroom management, and closure skills (Reddy, 2019).

The microteaching strategy is structured into three phases—knowledge acquisition, skill acquisition and skills transfer (Koross, 2016). The skill acquisition phase allows PTs to plan micro-lessons to practise the skills in a small group setting. Planning for microteaching and practicum has been found to be an effective approach for teacher educators to develop effective teaching strategies and skills in pre-service teachers. Kaur and Singh (2018) conducted a study which focused on the effectiveness of microteaching as a tool for effective teaching. The study found that microteaching had a positive impact on pre-service teachers' teaching skills and classroom management. The study concluded that microteaching can be an effective approach for teacher educators to develop effective teaching strategies and skills in pre-service teachers.

According to Otsupius (2014) and Kusmawan (2017), microteaching in teacher education programs was developed as an essential mechanism in providing teacher trainees with adequate knowledge, skills, and techniques related to teaching. For Msimanga (2021), the microteaching process consists of a small group of students teaching, observing and providing constructive and genuine feedback about the lesson. They further contend that this allows student teachers to develop one another, gain observation skills, learn from one another, and experience teaching in a controlled setting. This is supported by Herrera et al. (2017) who contend that micro teaching enhances planning skills, teamwork, and subject content expertise.

The importance of content selection is brought out in studies on microteaching. A study conducted by Tandon and Sharma (2019) performed a meta-analysis of the application of microteaching in Teacher Education Programs. The results showed that planning a micro lesson is a prerequisite for a proper practice session. During this time, it was noted that the selection of content is very much important and would involve selection of content which

carries maximum margin for practising the skill. The lesson would then be planned around that topic with the help of the teacher educator.

Infusion of technology in micro-teaching is a concept noted in various countries such as the USA. Technology is proving to be instrumental in supporting the facilitation and assessment of teacher education programmes. Various case studies involving virtual classrooms and video based learning during microteaching have been highlighted (Mollenkopf & Gaskill, 2020; Monroe et al., 2020; Yucesoy-Ozkan et al., 2020).

Mentorship is a necessary element for the success of microteaching sessions. In a study conducted in Botswana, Dinama et al. (2017) investigated teacher trainees' views about how they are assisted by the mentors in relation to preparation and planning. In their study the mentors were school based and were used to refer to the teacher educators. Dinama and others argue that while there may be several dimensions to mentoring in relation to instruction, the aspect of planning and preparation stand out. Based on the theme about guidance on lesson planning and preparation the results showed that the majority of teacher trainees (69.1%) were guided by the teacher educators on how to prepare for their lessons.

It is argued that for the guidance to be more effective, there has to be pre-lesson, post lesson reviews and feedback that can further guide in relation to preparing and planning for future lessons. Such reviews can be achieved during microteaching (at college level), and practicum (in a real school setting). Furthermore, it was noted that teacher trainees need to be prepared for lessons and should remain up to date on various dimensions of teaching as part of planning and preparation. The results showed that in relation to planning of lessons, 63.7% of the teacher trainees indicated that they were adequately guided by the teacher educators (Dinama et al., 2017).

Studies carried out in Kenya have found that microteaching, has enhanced pre-service teachers' pedagogical skills, confidence in teaching, instructional planning skills and classroom management skills (Ocholla 2017; Muthoni & Waweru, 2018; Ng'ang'a et al., 2019).

There are studies done in Kenya that have also linked microteaching to enhanced ability to integrate ICT in learning. A study conducted by Kinyanjui et al. (2020) investigated the effectiveness of microteaching on the teaching competencies of pre-service teachers in

science education. The study found that microteaching enhanced the pre-service teachers' pedagogical skills and their ability to integrate technology in teaching science.

These studies highlight the need for proper planning for microteaching and stress the importance of micro-teaching as an essential preparation stage for the teacher trainees before they embark on practicum.

2.5.3.3 Planning and Practicum

According to Becker et al. (2019) teaching practicum is a key component of a teacher education program which allows the prospective teachers to put theories into practice and to learn from first-hand field experiences. A study by Khan et al. (2021) aimed at capturing prospective teachers' practicum experiences in an undergraduate program in education in Pakistan. In connection with the real-life experience in the school, the prospective teachers were sent to various local schools for forty working days where they planned lessons and executed them in the real classroom scenarios. Still, it can be seen that planning is critical for delivery of lessons during the practicum.

The findings by Khan et al. (2021) revealed that teaching practicum was seen as an important aspect of learning by the prospective teachers as the process provided the prospective teachers with an opportunity to put theories into practice. During this time the teacher trainees were tasked to develop portfolios which contained: introduction of the school based on initial observations and interactions with the school management, teachers and students; lessons plans; reflections or reflective diaries; and final report on the practicum experience

The study by Khan et al. (2021) also sheds light to the procedural process of practicum. Analysis of the documents during their study, showed that the university supervisor had provided the prospective teachers with written qualitative feedback on the lesson plans and reflections of the prospective teachers. Moreover, the study highlights the benefits of providing sufficient time for trainees to carry out practicum. The respondents in the study; prospective teachers, considered the duration of the practicum appropriate as they had enough time to plan, take feedback, improve the plan and execute the lessons (Khan et al., 2021).

Studies further reveal that practicum for preservice teachers relies heavily on mentorship. School based mentors play a key role of guiding teacher trainees to navigate the new teaching environments they find themselves in. Baartman's (2016) study on the effectiveness of school based mentoring focused on the importance of effective mentorship for new teachers and how it can positively impact their preparedness for the profession. Baartman noted that new teachers face challenges and that mentorship can serve as a support system for them. The respondents in Baartman's study who were Post Graduate in Certificate of Education (PGCE) reported that teaching Practice (TP) is a stressful period full of anxieties, excitement and fears, hence they need to be guided and supported by knowledgeable and specialist teachers (mentors).

The study established that mentors play a significant role in supporting and guiding student-teachers during TP. It suggested that those who were supported and guided by their mentors experienced positive mentoring during TP while those who experienced negative mentoring reported limited time for mentoring and unavailability of the mentors as the causes (Baartman, 2016).

Baartman outlines the role of mentors as that of providing guidance, feedback, and support. The study further explores the impact of mentorship on the retention rates of new teachers and how it can contribute to the overall improvement of teaching quality. Overall, Baartman argues that effective mentorship programs are critical for improving teacher preparation and ensuring that new teachers have the support they need to succeed in the profession (Baartman, 2016).

In a study conducted in Botswana, Dinama et al. (2017) investigated teacher trainees' views about how they are assisted by the mentors in relation to preparation and planning. In their study the mentors were school based and were used to refer to the teacher educators. Dinama and others argue that while there may be several dimensions to mentoring in relation to instruction, the aspect of planning and preparation stood out. Based on the theme about guidance on lesson planning and preparation the results showed that the majority of teacher trainees (69.1%) were guided by the teacher educators on how to prepare for their lessons. It is argued that for the guidance to be more effective, there has to be pre-lesson, post lesson reviews and feedback that can further guide in relation to preparing and planning for future lessons. Such reviews can be achieved during microteaching (at college level), and

practicum (in a real school setting). Furthermore, it was noted that teacher trainees need to be prepared for lessons and should remain up to date on various dimensions of teaching as part of planning and preparation. The results showed that in relation to planning of lessons, 63.7% of the teacher trainees indicated that they were adequately guided by the teacher educators.

Studies also reveal the effects of practicum on pre-service teacher trainees. Zhang et al. (2019) conducted a study which aimed to investigate the effect of practicum on pre-service teachers' professional knowledge and skills. The study established that practicum was effective in developing pre-service teachers' professional knowledge and skills. Based on their findings, the study concluded that practicum can be a useful approach for teacher educators to prepare pre-service teachers for actual classroom teaching.

Lee and Kim (2021) conducted a study to investigate the effect of both microteaching and practicum on pre-service teachers' self-efficacy and teaching competence. The study involved 79 pre-service teachers who were divided into two groups: one group underwent micro teaching and practicum, while the other group only underwent practicum. The researchers used a pre-test and post-test design to measure the pre-service teachers' self-efficacy and teaching competence. The results showed that both groups had a significant increase in self-efficacy and teaching competence after the intervention. However, the group that underwent both micro-teaching and practicum showed a significantly higher increase in self-efficacy and teaching competence compared to the group that only underwent practicum. Based on the findings, the study concluded that both micro teaching and practicum are essential components of teacher education programs. It was found that pre-service teachers who underwent both micro teaching and practicum had a higher level of confidence and were better prepared for actual classroom teaching.

2.5.4 Utilisation of Curriculum Support Materials for Preparation of Teacher Trainees

Curriculum reform brings new approaches to classroom practice. As changes to the curriculum are implemented, teachers need to receive support materials that are print and non-print in nature. This concurs with Asikhia (2010) who posits that adequate and well prepared instructional materials determine how much a learner comprehends in any learning situation. They also play a complex and pivotal role in school and teacher training practices.

The adaptation and development of curriculum materials often constitute part of teacher professional development (PD) activities (Nick et al., 2021).

Curriculum support materials represent and guide the content, pedagogic approaches and sequencing of teaching, whether over a single lesson or a series. These include classroom activities, lesson plans, assessments, curriculum plans and schemes of work (SoWs) (Charalambous & Hill, 2012).

On other hand, most learning resource centres in teacher colleges are currently full of outdated, initially donated bulky books. This has not been in line with the present needs of training whereby learning resource centres should be ICT compliant. Teacher training colleges have insufficient, old worn out and unutilised facilities like laboratories, workshops, home science rooms, and music rooms. Training materials should be locally written and produced in public primary teacher training colleges because they are scarce (Lewin, 2004) .

The relevance of resources in the implementation of competency-based teacher education (CBTE) is pivotal for its success. CBTE focuses on developing specific skills, knowledge and abilities in educators in line with the needs of the modern educational context. According to Akuendit (2022), the availability and correct use of learning materials make delivery of content more effective, promotes interactive learning and enhances learners' understanding.

A study by Mwita and Onyango (2022) found out that the correct use of multiple learning materials by teacher educators makes teacher trainees enjoy the subject and that the appropriate use of instructional materials enables students to develop positive attitudes. Likewise, adequate physical infrastructure and resources within the classroom are core in creating an environment conducive for competency-based learning.

According to Doyle et al. (2020) curriculum materials contribute to a great extent in teacher professional development (PD), through formal, informal and collaborative processes. Saderholm et al. (2017) reinforce that the use of new or revised curriculum materials is sometimes taken as evidence of implementation of the aims of PD activity. However, though availability and utilisation of curriculum support materials is central to the successful implementation of CBTE, the focus of CBTE is not emphasis on the traditional curriculum

support materials such as textbooks and handbooks majorly rather on interactive, locally available resources and improvised learning materials by teacher trainees.

A study done by Kavindi (2014) on the implementation of competency based curriculum in certificate teachers' colleges in Tanzania established that teacher educators were crippling with the challenge of overcrowded classes and inadequate teaching and learning resources. As a result, the study concluded that Competency-based curriculum was not being implemented as it was intended at the classroom level. Resources like textbooks, appropriate online content and multimedia materials are essential for designing and delivering a competency-based curriculum. The realisation of competency based teacher education calls for preservice teachers to appreciate and interact with most resources during pre-service training. This will also determine how the teacher trainees will utilise diverse learning resources during the actual teaching and learning (Amunga et al., 2020; Makunja, 2016). These resources include teacher trainers, teaching, learning and assessment materials which include textbooks, reference books and parents.

Implementing CBTE often involves leveraging technology for instructional delivery and assessment. For example, Learner Management Systems (LMS) can serve as a centralised resource for organising course materials, tracking student progress, and facilitating communication. The study concluded that TTCs have not fully realised the benefits due to high cost of bandwidth, electronic devices and lack of teacher preparedness. Therefore, it is necessary to establish strategic funding models and continuous institutional support for successful deployment of technology-based CBTE.

Based on an argument that an education system is as good as its teachers ability to teach meaningfully (Melissa 2022, cited Mckinsey, 2007). Teacher educators are critical pillars in CBTE in implementation. The shortage of teacher educators and inadequate learning resources lead to the deterioration of quality teacher training both pre-service and in-service, therefore, there is no doubt that teacher educators form the most critical dynamics of effective education, the effect cascades throughout the education system (Al Shabibi & Silvennoinen, 2018).

Monitoring and Evaluation report on piloting in TTCs (KICD, 2020) established that some of the teacher educators were unable to teach without reference materials and handbooks; limited time allocation in some learning areas; there was lack of harmony between DECTE

and DPTE curriculum designs; lack of personnel in new learning areas and lack of specialist in Braille for Music and there was lack of specialised learning resources for SNE learners.

Another important study argues that adequate funding and institutional support are critical resources for successful CBTE implementation (Alex et al., 2021). Furthermore, they concluded that this includes financial support for training programs, curriculum development, and infrastructure improvements. Mitchell et al., (2019) noted that lawmakers need to pursue policies that help more students afford post-secondary education. The funding formulas should focus additional state funds on building the capacity of teacher educators in TTCs with the fewest resources. In Indonesia, the constitution assigns the government to give equal opportunities for all citizens in education yet education experts say less than half of the country's teachers possess even the minimum qualifications to teach properly (Shaturaev, 2021). The study recommended that in order to address these challenges, governments should deliberately make practical efforts to improve the quality of the education system by financing teachers to continue to pursue higher education, and provide training to improve the quality of teachers with appropriate CBTE skills.

In Kenya, the constitution envisages that education is a primary national responsibility. This has important implications for national level resource distribution, and the decentralised decision-making process (A Policy Framework for Education, 2012). Despite this policy being in existence, teacher training institutions have had major issues relating to education financing arrangements hence affecting smooth service delivery. On the other hand, the government has also made great strides towards improvement and reforming the education sector. In 2020, the Government of Kenya published the National Information Communication Technology Policy guidelines through Gazette Notice No. 5472 of 20th August 2020 (Micheni, et al., 2023). Its main goal was to transform Kenyan education into a 21st-century education system by ensuring that students can use digital technology and communication in their studies.

2.5.5 Pedagogies Used in Implementation of CBTE

Competency-Based Teacher Education (CBTE) is an approach to teacher training that focuses on the demonstration of specific skills and knowledge by teacher trainees rather than the completion of a set number of courses or time spent in a program. Similarly, Osakwe (2010) explains the learner- centred approaches where the teacher seeks to bring about the change in behaviour of learners by imparting knowledge and skills in an interactive way.

This is where the learner constructs meaning from the experiences received in their own perception.

In essence CBTE, the emphasis is on measurable learning outcomes, and students' progress as they demonstrate mastery of competencies. The implementation of CBTE involves the use of specific pedagogies to ensure effective learning and assessment. The successful implementation of CBTE may require a combination of various pedagogies to create a comprehensive and effective teacher education program. Some of the CBTE pedagogies include project-based learning, personalised learning plans, collaborative learning, technology integration and field experience and internships among others.

Some researchers and theorists have argued for a 'continuum' of teaching styles or practice that call for the adaptability of progressive approaches using a flexible framework (Bremner, 2019). Recent empirical evidence has revealed complex processes of change in teachers' beliefs and practices in various developing countries leading to adoption of student-centred education, suggesting a 'hybrid pedagogy' or a mix of teacher-directed and student-centred approaches (McAleavy et al., 2018; Bremner, 2019; del Valle 2019). Relatedly, Anderson-Levitt and Gardinier (2021) also point to hybrid forms of policy discourse and implementation associated with competency-based approaches that have been applied in diverse contexts.

Okelo (2016) observed that in public teacher training colleges in the lake region of Kenya, the teacher educators commonly use teacher-centred approaches in teaching the teacher trainees who deploy the same pedagogical approaches in classrooms after college. At the same time the teacher trainees were not given the opportunity to select the subject options based on interest.

The Problem Based Learning (PBL) is an integrated teaching and learning strategy applied in the classroom by teacher educators to develop the self-efficacy required to support the curricular demands necessary to address the learning needs of students for the 21st Century. A sustained focus on pedagogy, curriculum and skill acquisition is critical to developing 21st-century teaching skills. Implications for teacher learning and the importance of engaging teachers in a professional development experience that integrates college and career readiness curricula and PBL methods are also discussed.

The pilot report for implementation of CBTE in TTCs (KICD, 2020) revealed that a majority of tutors had not fully understood the paradigm shift of CBTE learning strategies and pedagogical approaches. Furthermore, the report revealed that a majority of tutors found the training theoretical not easy for them to apply pedagogical approaches learnt into classroom. In as much as the teacher educators are still struggling to cope with CBTE pedagogical approaches, it is inevitable that traditional rote and lecture style of teaching is not in sync with 21st century learning. Interactive and transformative pedagogical approaches foster critical and reflective thinking and developing problems-solving skills among teacher trainees during pre-service which calls for teacher educators to embrace.

One of the CBTE pedagogical approaches is Project-based learning(PBL)which involves the completion of real-world projects that require the application of knowledge and skills. Teachers engage in hands-on projects that mimic the challenges they will face in the classroom, demonstrating their competency in various areas. According to Zhang and Ma (2023), a learner's achievement of learning outcomes is usually equal or even better when project based learning is appropriately applied as compared to gains achieved when employing more traditional classroom instruction. Earlier studies conducted on higher-order twenty-first century skills, had also established that learning gains were even more significantly higher with project-based learning than with traditional methods (Trilling & Fadel, 2009).

In another study by Martinez (2022), a group of teachers were selected to participate in professional learning experiences focused on developing 21st Century teaching skills with a focus on project based learning. They were then asked to rate their experiences. They affirmed that the PBL method helped them to understand the connection between a project-based learning approach and 21st Century skills development in their classes. Most of the teachers believed PBL was the most effective instructional model for delivering a rigorous curriculum linked to 21st Century skills and work-based learning opportunities. These findings concur with CBTE's sustained pedagogy and skill acquisition. Focusing on classroom processes and teacher practices that support the development of 21st-century skills in the classroom can serve as an essential first step.

The modalities for reforming pre-service teacher education training curriculum requires designing a curriculum that will equip all educators to be innovative and reflective pedagogical practices (Petrilli,2016). Similarly, with personalised learning pedagogy, the

individuals approach problems in their own way, grasp ideas at their own pace, and respond differently to multiple forms of feedback (Hampson et al., 2011). CBTE often emphasises the creation of personalised learning plans for each teacher candidate. Redecker et al. (2011) stresses that "personalisation has implications for what, how and where we teach". These plans outline the specific competencies to be achieved, along with the resources, activities, and timelines for achieving them.CBTE requires more personalised learning with an emphasis on supporting rather than stifling creativity.

Classroom management, providing feedback, learner-centred practices and flipped classrooms appear to have a positive impact on learner performance. Pre- and in-service teacher education programmes could develop these skills (Best, Tournier, and Chimier, 2018). CPD programmes focusing on subject-specific pedagogy could enhance learning significantly (Popova et al., 2019). A deductive analysis of literature by Louise Starkey (2020) identified three implicit orientations of teacher digital competencies; competence in the generic use of computers, the ability to integrate digital technologies into teaching practice and professional digital competence. Technology is often used to facilitate learning and assessment in CBTE. Online platforms, virtual classrooms, and simulation tools can provide additional resources and opportunities for practice and assessment.

In a study to examine the effects of teacher education courses for technology integration (TECTI) on pre-service teacher knowledge, Wilson et al. (2020), classified six major categories of barriers to technology integration in learning as; resources, knowledge and skills, institution, attitudes, assessment and subject culture. Starkey (2020) affirmed that as schools and teaching evolve as a result of the integration of technologies which has resulted in increased access to learning and leveraging on the use of digital tools to inform pedagogy. OECD (2020) reported that primary school teacher education is similarly confronted with challenges which may hamper the implementation of competency based curriculum and vision 2030.

There has been no curriculum for teacher instructors for primary educator training institutions; many of teacher instructors are deficient of appropriate primary school tutoring experience to keep them at abreast with contemporary practice hence the early teacher education programme for primary school teachers requires sporadic appraisal to be in tandem with classroom shifting pedagogical trends. These views concur with the M&E pilot report (2021) which revealed most of the tutors teaching in the TTCs were formerly trained

as secondary school teachers hence lack relevant pedagogical approaches suitable for PTE and ECD teacher trainees. Therefore, lack of specialisation in teaching in the TTCs and subject specialisation in primary school teacher training undermines appropriate instructional approaches on the part of the educator and trainee.

Petrilli (2016) posits that the instructors in TTCs teaching SNE, possess subject matter but they are not well-versed in pedagogy to train SNE teacher trainees.Since they lack the relevant pedagogical approaches for SNE ,it leads to inadequate preparation of the teacher trainees.This implies that Special Needs Teacher Education a big share of challenges which may hinder the realisation of CBTE for SNE (Petrilli, 2016).This findings resonate with M&E pilot report (KICD,2021)which revealed that some teacher educators were teaching SNE teacher trainees using lecture method which was suitable for regular trainees.

In a study in Algeria, Selama (2020) got information on attitudes of Algerian newly recruited teachers towards professional development. The study established that it is beyond doubt that teacher training and professional development, if the right conditions exist, have a positive effect on teaching performances However, the ultimate success or failure of both teacher training and teacher development depends on the trainees' attitudes. On the other hand, lack of proper training leaves teachers unprepared to treat vulnerable populations (girls, students with disabilities, ethnic minorities, or displaced students) fairly and equitably. Training helps teachers to adapt inclusive teaching methods to suit students with different learning needs (Education Commission, 2019; UNESCO, 2019). Especially in crisis and refugee settings, teachers are often not prepared to offer specialised psychosocial support; do not have pedagogical skills for multi-grade classrooms; and are unable to deal with potentially dangerous classroom situations, special needs learners, and/or learners who have missed a significant amount of school (Richardson et al., 2018).

Research is focusing more on the importance of training teachers to enhance their own social-emotional learning, manage stress, build resilience, and better support learners (Schonert-Reichl, 2017).

2.5.6 Conduct of Competency Based Teacher Assessment (CBTA)

The shift from knowledge based assessment has influenced the Competency Based Teacher Assessment (CBTA). Conducting a CBTA involves a systematic and comprehensive evaluation of teachers based on their demonstrated competencies. This is key in quality

assurance in teacher education. This has led to growing emphasis for assessing teacher competencies as opposed to traditional examination based methods.

Denman and Mahrooqi (2018) state that assessments must adhere to a number of principles, one of which is that they must be helpful (citing from University of Manchester, 2014; Ulster University, 2014; Scottish Qualifications Authority, 2014; University of Central Lancashire, n.d.). That is, assessment should be explicitly acknowledged as central to course planning and design and should act to both foster learning and motivate students. It should strengthen the relationship between students and instructors and encourage their initiative, with a particular eye toward building capacity to engage in self-assessment. Assessment should therefore be viewed as integral to the learning and teaching process rather than as an "add on" or burden to learners in terms of workload and potentially negative social and academic consequences. Feedback must be made available to learners in a timely and easily understandable manner and should aim to increase motivation while also offering directions for future learning and development.

According to Doğan et al. (2020), there are four different sorts of online assessment settings: web publication, online discussion tasks, automated scoring systems, and other evaluation goods. These include articles, research reports, project reports, reviews, presentations, audio and video clips, and more. Another resource offered by online assessment platforms is computer-based testing (CBT), which can be implemented in a standard or nonstandard way. Chinengundu and Hondonga (2022) indicates that the COVID-19 pandemic made it more challenging to observe instructional practices because lesson observations and hard copies were no longer available due to travel limitations. The challenges with online assessment included a lack of ICT tools, problems with internet access, poor internet connectivity, costly data plans, a lack of resources, and a lack of adaptation on the part of assessors and trainees.

Contrary to views given by Chinengundu and Hondonga (2022), the online assessment has become an increasingly popular method for evaluating teacher trainees in recent years. Online evaluations outperformed traditional paper-and-pencil tests in fostering critical thinking skills in teacher candidates, according to a different study by Yükseltürk and Bulut (2017). Furthermore, Kim and Park (2018) discovered that teacher candidates' self-regulated learning was effectively promoted by online assessments. Similarly, Edom et al. (2019)

study discovered that online evaluations promoted the development of teaching competences among teacher candidates more effectively than traditional exams.

The content and pedagogical issue knowledge of teacher candidates might be effectively evaluated by online exams, according to a study by Lee et al. (2021). As compared to traditional exams, online tests offer the capacity to assess a greater range of competencies, the study found.

In Germany, United States, Philippines, Netherlands, Jordan amongst others, national standards for Teacher Education have been set up to assess competencies that teacher trainees should have acquired by the end of the training program (Ismail et al., 2009). These competencies are interpersonal competency such as ability to create cooperative climate, pedagogic, subject matter and didactic, organisational, cooperate with colleagues and cooperating with the school environment such as with parents; carrying out own reflection and keeping up with changing demands such as professional developments.

Tirol et al. (2022) in a study on teacher training program on designing participatory educational action research proposal in Philippines established that developing, implementing, and evaluating on designing participatory educational action research projects in which training teachers where to conceptualise an action research problem and design a methodology specific to their proposed was an effective way of conducting a competency based assessment.

As a student-teacher in Cameroon, you must either exhibit behaviours that are known to foster desired learning or show that you are a teacher-trainee who can enhance students' learning (Nahuah, 2021). Although preservice teacher educators were aware of the teaching and assessment methods stipulated for the implementation of competency based curriculum they were not adopting the envisaged pedagogical approaches and assessment methods in their classroom practices (Paulo, 2014).

In Kenya, one way of TTCs assessing a student-teacher is by use of Portfolio of Evidence. It contains evidence of competency related to consequences, teacher actions and decision-making processes. Another way is by selecting a set of tasks and task situations which represents scenarios in professional situations (Ngeno, 2023). Furthermore, according to Ngeno, the task is meant to evaluate the teacher candidate's demonstration of competency,

and other evaluation methods like written test scores, subject-matter assessments, peer evaluations, recommendation letters, and reflective reports, remain acceptable.

Questions have arisen on whether the teaching and learning pedagogies being employed in the teacher training institutions are aligned to competency based curriculum. Teachers have been found to prefer formative assessment to summative assessment due to tension created by the exam oriented assessment (Amunga et al., 2020). However, information on the training that teachers undergo during the in-service training is lacking.

Oluwatayo and Adebule (2012) indicated that relevant assessment demonstrates proficiency in skills and identifies areas of weakness in knowledge of the content area or curriculum itself. Such evidence is observed through: lesson plan, sequence of content, lesson introduction and development, use of teaching and learning resources, class management, evaluation and achievement of objectives, as well as confidence levels of the teacher trainee.

2.5.7 Effectiveness of Upgrading Programmes

Studies reveal that continuous professional development is key to the relevance of teachers in their profession. OECD (2009) report on professional development for teacher educators, acknowledges that pre-service training is not enough to sustain teachers in their professional work. Additionally, the study conducted by OECD revealed that a significant proportion of teachers think that professional development does not meet their needs. Teachers pointed out three key areas they require professional development in: teaching special learning needs students, ICT teaching skills and student discipline and behaviour.

Hailua and Michael (2021) conducted a study to investigate the effectiveness of summer Upgrading Teachers' Education Program of primary schools in Ethiopia. Findings of the study indicate that gains observed from the upgrade programmes included enhanced teacher capability in planning, adjusting lessons with environmental changes, assessment skills and subject matter mastery. Furthermore, teachers who had undergone the upgrade programme had positive self-efficacy on subject mastery.

However, the study highlighted shortcomings of the upgrade programme as having teachers gaining more theoretical than pedagogical knowledge. This reduced the benefits to their students. The instructional skills and approaches (use of methodology) of college level instructors was also found unsatisfactory. (3) misalignment reported on the use of

instructional methods with contents and learning objectives (4) inadequacy of instructional facilities and resources (5) criticism of primacy of the view held by education planners that a sufficient training program alone can lead to a significant impact in schools (6) some courses offered in school were not taught at the college level (7) lack of program follow-up, including post-graduation support, graduate quality monitoring, and accreditation programs and (8) lack of program review which ought to be done regularly.

The shortcomings of the programme resonate with other studies that point out that unequal access to upgrade programmes, lack of support for teachers, and lack of mechanisms for sustainability are challenges faced in the implementation of teacher upgrade programmes (Fang et al., 2021; Molefe et al., 2019).

Other studies also point out the issues affecting the teacher professional programmes. Collinson et al. (2010) conducted a study on professional development for teachers: a world of change. The major findings of the study were: (1) in-service professional development (PD) is essential for the continuous upgrade of teachers to meet rising challenges of the profession because pre-service training cannot prepare them for such unforeseen challenges (2) improper planning, content, timing and strong focus on student learning are the main factors found to affect PD programmes; and (3) the main challenges teachers face in relation to PD programmes are improper organisation and the inability of teachers to implement gained PD knowledge in the classroom.

According to Annan (2020) who cites Aboagye (2008), the new tertiary status of colleges of education in Ghana requires that tutors who teach them upgrade their qualifications as well as update their competencies to meet the new demand for tertiary teaching. Annan adds that this is because tutors are expected to adopt interactive and student-centred instructional strategies in teaching so that the teacher trainees will also teach using the same approach.

The cost of professional development programmes has also been criticised by teachers. According to a study by OECD (2013), teachers were required to pay full costs for PD programmes which ultimately did not meet their demands. This, the OECD study indicates, requires not just better support for teachers to participate in professional development, but for policy makers and school leaders to ensure that the development opportunities available are effective and meet teachers' needs. Teacher trainers are sometimes held accountable for their vagueness in determining the action purpose and theory in their PD program, however,

educators in some other cases are even unwilling to be responsible for their own PD (Daniel & Peercy, 2014). Nonetheless, based on literature, when perspectives from educators merge with that of educator trainers, it can probably ascertain congruence between the contents of educator training and the educators' needs in addition to facilitation of educators' PD (He et al., 2011).

Pertaining to professional competency of teacher trainers facilitating PD training, Van der Klink et al. (2017) asserts that not enough consideration has been paid to teacher educator studies. There is little information regarding educator trainers and their PD. Questions are raised on how these trainers are educated and taught and what leads to a proper teacher trainer (Lin, 2013; Villegas-Reimers, 2003).

In view of the gains that teachers reap from the upgrade programmes, it is also imperative to note that much of the activities carried out by teachers rely on motivation. "Motivation to teach" refers to something that "attracts individuals to teaching" and impacts "how long they remain in their initial teacher education courses and subsequently the teaching profession, and the extent to which they engage with their courses and the teaching profession" (Sinclair, 2008). Several reasons have been pointed out for low enrolment into PD programmes. These include: Lack of qualified motivated candidates entering teacher education programmes. Underperforming education systems produce too few quality candidates to create a new cohort of quality teachers (Taylor et al., 2019).

Given that teaching has become a relatively unattractive career and the related trend of high rates of teacher attrition, existing research on teacher motivation has revealed that motivation to teach is a critical factor in attracting potential teachers to the profession and in encouraging preservice teachers to continually engage in professional development (Sinclair, 2008; Han & Yin, 2016). Additionally, Minimum entry requirements should attract candidates with a sufficiently high level of education while still guaranteeing sufficient candidates to meet needs (UNESCO, 2019). In some contexts, it is already difficult to attract candidates, and raising entry standards and requirements could reduce numbers further.

The issues affecting professional development highlighted in these studies narrow down on key areas that planners and implementers of CBTE upgrade programmes should pay keen attention to, to ensure success of the programmes. However, despite the challenges that mar the effectiveness of the teacher upgrade programmes, studies highlight the benefits of

upgrade programmes. Fang et al. (2021) explored the implementation of a teacher upgrade programme in China, which aims to enhance the qualifications and skills of rural teachers. The study found that the programme had positive effects on teacher knowledge, skills, and attitudes, as well as on student learning outcomes.

Sibanda (2018) conducted a study to explore the implementation of upgrade programmes in Zimbabwe, which are designed to enhance the qualifications and skills of practising teachers. The study provided an overview of the upgrade programmes and examines their effectiveness in improving the quality of teaching and learning in Zimbabwean schools. The findings of the study reveal that the upgrade programmes have had a positive impact on the professional development of teachers, as well as on the quality of teaching and learning in schools. Similarly, Molefe et al. (2019) conducted a study on the effectiveness of upgrade programmes in South Africa, which are aimed at improving the qualifications and skills of unqualified and underqualified teachers. The study found that the programmes had a positive impact on teacher confidence, pedagogical content knowledge, and classroom practice.

A study by Ouma et al. (2021) examined the effectiveness of a teacher upgrade program in improving teacher quality in Uganda. The study found that the teacher upgrade program had a positive impact on teacher quality, particularly in the areas of student achievement and teacher knowledge.

Studies carried out in Kenya on the effectiveness of the upgrade programmes found that these programmes are effective in enhancing teacher performance and competencies, improving teacher motivation and enhancing job satisfaction among teachers (Oluoch & Odundo. 2017); Kariuki & Muhoro, 2018; Kimani et al., 2020).

The implementation of Competency Based Teacher Education (CBTE) in 2020 and subsequent nationwide rollout in all Teacher Training Colleges (TTCs) in Kenya has marked a significant milestone in the training of diploma teachers under the new teacher education curriculum. This development effectively raised the minimum qualification for a teacher to a Diploma level. In view of this, the Ministry of Education (MoE) tasked the Kenya Institute of Curriculum Development (KICD) with the responsibility of formulating guidelines for upgrading the qualifications of P1 course and ECDE certificate course, which are currently being phased out. The upgrade programmes are aimed at equipping in-service teachers with professional competencies and CBC pedagogies and practices.

To achieve this, a national teacher education policy needs to be developed and implemented, as this has been lacking. According to Makunja (2016), such a policy should place emphasis on incorporating Information Communication Technology-based resources for educators on the competency-based curriculum facet. Additionally, there is need for constant research on current universal trends on effective instructional approaches, as well as the establishment of a structured training program for personnel tasked with instructing without essential teacher training skills. Coordination and synchronisation of the delivery of in-service teacher training, which currently has a lot of discrepancies, is also crucial. Finally, there is a need to encourage transformative aspects of teacher education to ensure that teachers are equipped with the necessary skills to impart knowledge to their students effectively (Makunja, 2016).

2.5.8 Challenges in the Implementation of CBTE

Students in teacher training colleges come from diverse backgrounds with varying levels of prior education and experiences. Designing a CBTE program that meets the needs of this diverse student body can be complex.

This study sought from the respondents, the challenges facing TTCs in the implementation of CBTE.

UNESCO (2014) highlights that; the quality of initial teacher education programs has been a challenge facing many countries, particularly the training programs for primary school teachers. The criticism is with regards to the qualifications of new entrants, duration of the programs, qualification of tutors, and the quality of the curriculum (UNESCO, 2014). When changes are imminent, they are usually perceived as a challenge by those affected by the change process, which is accompanied by a feeling of uncertainty and threat (Schneider & Retzbach, 2012; Lauer, 2019;). To reduce these perceived uncertainties and threats of the affected organisational members, it is essential to explain to them the necessity and benefits of the intended changes (Lauer, 2019; Schneider & Retzbach, 2012; Wagner et al., 2010).

Ramli et al. (2021) sought to find out how equipped teacher educators were to use Competency Based Teacher Education (CBTE). Selected teacher educators from various higher education establishments in Malaysia were surveyed. The findings showed that teacher educators thought their knowledge and abilities to apply CBTE were only somewhat equipped. However, they reported a lack of training and support in designing effective assessment and support systems that enable teacher trainees to develop the necessary

competencies to be effective teachers. The authors suggested that providing teacher educators with professional development opportunities to enhance their understanding and skills in implementing CBTE is crucial in ensuring that they are adequately prepared to train future teachers in CBTE. Overall, the study highlighted the need for teacher educators to possess the necessary knowledge, skills, and support to effectively implement CBTE, and emphasises the importance of providing teacher educators.

The shortcomings of the programme resonate with other studies that point out that unequal access to upgrade programmes, lack of support for teachers, and lack of mechanisms for sustainability are challenges faced in the implementation of teacher upgrade programmes (Fang et al 2021; Molefe et al., 2019).

Vivienne Collinson et al. (2010) conducted a study on professional development for teachers: a world of change to point out issues facing teacher professional programmes. The major findings of the study were: in-service Professional Development(PD) is essential for the continuous upgrade of teachers to meet rising challenges of the profession because pre-service training cannot prepare them for such unforeseen challenges; improper planning, content, timing and strong focus on student learning are the main factors found to affect PD programmes; and the main challenges teachers face in relation to PD programmes are improper organisation and the inability of teachers to implement gained PD knowledge in the classroom.

Momanyi & Rop's (2019) research on teacher preparedness for the CBTE in Kenya, references Wanzala's (2018) findings, which indicate that inadequately prepared teachers can hinder the effective execution of a curriculum. The CBTE was allegedly foisted on unprepared tutors, according to Wanzala (2018), and the secretary general of the Kenya National Union of Teachers (KNUT) expressed worries about the tutors' conflicted feelings about the new curriculum.

In relation to utilisation of curriculum support materials, for the preparation of teacher trainees, Mandukwini (2016) asserts that there are various support structures needed for curriculum implementation including knowledge of curriculum. Resources have to be made available for effective teaching and learning to occur. Training of teachers and management should be on-going and support structures are available so that teachers do not have to wait for a workshop to get advice.

In a study on the implementation of competency based teaching approaches in Tanzania, (Kafyulilo et., 2012) revealed that pre-service teachers perceived their understanding and ability to implement competency based teaching approaches as high, but during interviews it was revealed that they had difficulties in explaining some competency based concepts. Contrary to this, Moses et al. (2013) study conducted in Tanzania showed that teacher educators had trouble explaining a few competency-based ideas. It was determined that competency-based teaching methods were not effectively applied in Tanzanian schools and that further work was required to increase tutors' and principals' comprehension of these methods.

On conduct of CBTA, studies explored teachers' knowledge and integration of competency-based practices in schools in one hundred and fifty sampled in-service secondary school teachers across three African countries Nigeria, Rwanda & South Africa. Findings revealed that teachers across the three countries had a positive perception of the usage of competency-based approaches but lack of professional training and support, which in turn affected the quality of their teaching and assessment practices in classrooms. The recommendations from the study was to offer teachers valuable consideration to move beyond the traditional level of assessment and integrate good proxies of academic skills that support learners' acquisition of 21st century skills such as problem solving, creativity and critical thinking in assessing learners' competencies (Moses et al., 2013).

The research conducted by Tarma (2014) revealed that while pre-service teachers were aware of the teaching and assessment strategies that were required to be used in order to implement Competency Based Curricula, the teacher educators were not incorporating these strategies into their daily teaching practices. Pre-service teachers continued to use traditional teacher centred teaching methods along with paper and pencil forms of assessments despite the fact that the newly adopted curriculum demanded change (Doğan et al., 2020), Especially with the COVID-19 epidemic that emerged at the beginning of 2020, online teaching or e-learning, in general, has become the dominant method at almost every level in the world. Teachers/instructors switched from face-to-face instruction to online education and they have been experiencing some difficulties in e-learning, teaching, and the e-assessment. While face-to-face teaching has a long history, online teaching is relatively new, and there are some uncertainties in their role in the teaching process. These uncertainties also affect assessment procedures. The electronification of the learning process has revealed

a need for electronification of assessment procedures designed for different purposes. While designing online teaching practices, there is a need to develop an assessment addressing these practices.

Discussions mainly focus on how to use different assessment approaches in an online environment, how to ensure the validity and reliability of measurement results, how to prevent cheating, and how to ensure test security. Hence, online assessments bring significant challenges to cope with. Therefore, e-assessment requires planning on how and when to conduct the assessment, exceptional attention to the purpose of the assessment and/or assessment plan, and basic principles of assessment as well as the knowledge about the tool and software being used and developing the skills to use them.

A research on the difficulties teachers' colleges encounter in implementing Competency Based Curriculum (CBC) was carried out by Nombo (2022), and the study discovered that teachers' colleges and tutors encountered a number of difficulties despite tremendous efforts from the government, institutional, and individual initiatives. These difficulties included a lack of government assistance, a paucity of supplies, and inadequate infrastructure. The report suggests that in order to successfully overcome these obstacles and introduce CBC at teachers' colleges, cooperation between the government, training facilities, and education stakeholders is necessary.

Mwang'ombe (2021) included ideas for a successful teacher education in the 21st century in a different study titled Teacher Education in Kenya: Successes, Challenges, and ideas. Lack of teacher educators and limited funding were two issues the author brought up about the Kenyan teacher education system. A complete understanding of the subject matter was not attained since there was insufficient time allotted for the teacher professional development programs to study the content in detail. In most situations, decontextualization had an impact on in-service teacher training programs and posed a challenge to teacher education. Another issue with the execution of teacher professional development programs was the government's insufficient funding. It was recommended that teacher education curriculum at the University of Dar es Salaam and other Universities in Tanzania should be reviewed to respond to the new demands in teachers' pedagogical content knowledge arising out of the introduction of competency-based curriculum in secondary schools.

Another study was conducted in Algeria on the importance of professional development, it revealed that lack of professional training and professional development of teachers can be a key source for any dissatisfaction in the quality of their teaching to form competent students with the necessary knowledge and skills in the different subject matters (Boudersa,2016) . The study recommended that professional development and the teachers' professional training and professional development is a necessary ingredient to support innovative and beneficial teaching.

The Kenyan teacher education system has faced a myriad of challenges including shortage of teacher educators and inadequate resources. Most teacher preparation institutions either have inadequate or unqualified teacher educators brought by a mismatch between their qualifications and job description. A clever set of studies have also attributed the shortage of teacher educators to lack of motivation and experience (Al Shabibi & Silvennoinen, 2018).

McNeill et al. (2016) asserted that understanding the beliefs and concerns of teacher trainers can provide insights into whether curriculum implementation will meet with success or failure. Therefore, M& E is a prerequisite that helps to unveil the implementers' strengths and weaknesses in good time. In addition, many scholars have reinforced the necessity of regular follow up in order to recognise tutors' roles and concerns during the implementation of a fresh curriculum (Hall & Hord, 2015).

M&E report on piloting in TTCs (KICD, 2020) revealed that majority of teacher educators had not fully understood the paradigm shift of CBC learning strategies and pedagogical approaches and were unable to teach without reference materials and handbooks. This implies indicates an element of slow pace to change among the teacher trainers.

Owala (2021) opines that there are strong countervailing forces pushing for a shake-up of the status quo. At an individual level, education plays an increasingly important role in determining individual well-being and prosperity; at a macro level, education is associated ever more strongly with higher levels of social inclusion, productivity and growth. The emergence of the knowledge society and the upward trend in skill requirements only increase the importance of education. The cost of underperformance and underinvestment in education is rising.

Teachers' knowledge, attitudes, competencies and skills are most important in the implementation of any curriculum at any level since they are the last group of professionals

that work on the final bit of it before it reaches the consumers who are the learners therefore their input cannot be taken for granted (Owala, 2021). Many teachers in low- and middle-income countries lack the skills to teach effectively, and professional development (PD) programs are the principal tool that governments use to upgrade those skills (Popova et al., 2019).

Diversity and inclusion pose challenges to teacher education, an issue taken up by the Council of Europe already some years ago resulting in the development of key competences for diversity (Council of Europe, 2009).

2.5.8.1 Proposed Solutions to Challenges

Flexibility, collaboration, and a commitment to continuous improvement are essential elements for overcoming the challenges in the implementation of CBTE in Teacher Training Colleges as identified from this study. The Organisation for Economic Cooperation and Development (OECD), Teaching and Learning International Survey (TALIS, 2013) emphasised that efforts to reform teacher education requires the expertise and experience of teachers themselves because it is often impossible to successfully implement actual reforms without the cooperation of the teaching staff.

Al- Fahad and Alotaibi (2021) conducted a qualitative case study of a teacher education program in Saudi Arabia to examine the role of teachers in implementing CBTE. The results showed that teachers are responsible for designing, assessing, and supporting the acquisition of competencies by student teachers. However, challenges such as lack of clarity in the definition of competencies, lack of alignment between competencies and the curriculum, and lack of resources and support were also identified. To overcome these challenges, the study recommended a collaborative approach to CBTE implementation, involving stakeholders in the design and assessment of competencies, aligning competencies with the curriculum and local context needs, and providing teachers with adequate resources and support.

In light of teacher education reforms, Sarvi and Tulivuori (2022) emphasise the significance of professional learning communities. Inquiry-based professional development methods, including action research, lesson study, and varied learning circles, are proposed as structures that these communities should provide for teachers. The need of instructors being proficient in ICT and capable team players is also given prominence.

Additionally, Sarvi and Tulivuori advise that a national consensus on the issue of teacher preparation be established. As part of a continuum for early childhood, pre-primary, primary, and secondary education, a normative curriculum should be developed and tailored to support teacher education grounded in research. High-performing systems integrate a substantial practical component into their initial teacher education program through a network of practicum schools. This helps students gain classroom management skills and make the connection between pedagogical theory and practice.

There should be a distinct continuum that allows teachers to maintain their professional abilities throughout their careers, and teacher education should be viewed as a lifelong learning process. To assist prepare for them, it is especially critical to foresee the skills and training that teachers will require in the future. According to Sarvi and Tulivuori, continuing professional development (CPD) ought to be customised, useful, and centred on enhancing the instruction-teaching procedure.

In Paulo (2014), the author offered a number of suggestions, one of which was that in order for teachers to acquire the 21st century abilities that they will impart to their students, the government should guarantee that contemporary technology is invested in and adopted by teacher training institutions and schools. To improve teacher quality, the government should also make investments in human and educational resources and increase funding to support motivation and in-depth subject coverage in in-service teacher training programs. In response to concerns about instructors' readiness to lead CBTE programs, Momanyi and Rop's (2019) research offers the following solutions: KICD ought to furnish instructors and Curriculum Support Officers with comprehensive guides, and prioritise teacher training to incorporate CBC into programs, syllabuses, and curricula.

The Ministry of Education (MoE) was advised in the M&E report on piloting in TTCs (2020) to organise comprehensive subject-based training for tutors. Additionally, KICD should consider merging professional courses to minimise duplication of content and make the most of limited time and human resources, as well as any other inconsistencies in the design of DECTE and DPTE curricula. Additionally, KICD should consider providing FastTrack with an adapted curriculum for VI. The MoE should assist TTCs in providing multimedia devices and dependable internet to support CBTE pedagogy and learning. TSC should assign tutors for new learning areas, and specialists in Braille for Music should be

posted. Finally, MoE and other stakeholders should provide specialised learning resources for SNE learners.

Annan (2020) posits that professional development, or the regular and continual upgrading of one's professional competence and skills, is another crucial topic that requires stakeholders' attention. The circuit supervisors (CS) of the zone and the various headmasters of the schools may provide routine post-employment training for hired instructors. Mensah and Addah [46] made the suggestion that teacher professional development should receive the utmost attention since it contributes to the achievement of teaching and learning objectives in the educational system. Participant awards include certificates, which may be necessary to advance to the next rung of the professional ladder.

2.5.9 Key Issues in the Literature Review

Based on the information obtained from the related literature the following is deduced as key issues:

i) Teacher educators' preparation

Most of the research studies have affirmed that preparation of teacher educators for implementation of CBTE in teacher training colleges remains paramount. This is because the 21st learning requires breaking the ceiling, patterns and learning new behaviour through continuous training, preparation, building teachers educators capacity as well regular follow up and support (OECD, 2010).In the same breast the reports have shown that it is a challenge to support teacher educators fully since implementing CBTE can be complex, as it requires careful design, assessment, and support systems to ensure that teacher educators are indeed developing the necessary competencies to be effective teacher educators.

It is clear that this study aimed at establishing the extent to which training, capacity building and retooling of teacher educators through the cascading model has impacted on the implementation of CBTE in the public and private TTCs. In addition, to find out real time effectiveness and efficiency of the training at the grass root level on a teacher educator in a classroom through classroom observation. Another salient issue stems from the M&E pilot report by KICD (2021) had revealed that most of the teacher educators (93.4%) were not specialised in teaching in TTCs, therefore they need a short course to enable them teach effectively the DECTE and DPTE teacher trainees.

The study did not focus on aspects of teacher education quality policy which the existing literature has demonstrated that it is central to teacher education reforms in other countries like the USA. The policy provides a framework of holding teacher education accountable', results of international assessments of student achievement and related country comparisons. The Teacher quality education policy is seen as key levers to improving a country's economic development and global competitiveness.

ii) Effectiveness of planning for implementation of CBTE by teacher educators and teacher trainee professional work

The related studies have underscored the importance of effective planning which includes preparation of professional documents, preparation of teacher trainees for micro teaching and practicum. Most of the studies emphasised that learning can only be meaningful key aspect of any teacher's work in order to give students meaningful through planning for instruction through lesson planning. The findings also emphasised that Micro Teaching is critical because it focuses on core skills such as lesson planning, introduction, presentation and explanation, stimulus variation, use of teaching aids, board writing, reinforcement, probing, classroom management while practicum was considered necessary for teacher trainees to develop effective teaching strategies and skills during professional work. This study was conducted to unveil the competencies of the teacher educators in preparing their professional documents such as the Scheme of Work, lesson plans, record of work and Individualised Education Plan (IEP) which the related literature review did not focus on

iii) Utilisation of curriculum support materials

From the literature review curriculum support materials which include print and non-print materials as well as human and financial resources were inadequate across the TTCs yet curriculum materials are indispensable in the teaching-learning process. Apart from inadequate curriculum support materials lack of information and communication technology (ICT) skills and techno-phobia among the teacher educators was one of the challenges facing learning and teaching CBTE implementation in TTCs. However, this study focused on establishing availability, adequacy, utilisation of print, non-print, impoverished and locally available learning materials. The also aimed at establishing the extent to which the teacher educators engage teacher trainees in mobilising and manipulating the learning resources since this could lead to transfer practice during practicum and professional work.

iv) Pedagogical Approaches

From the different research studies, learner-centred pedagogy has been widely advocated in many contexts with student active participation in learning being a central element. Many developed and developing countries have adopted innovative pedagogies including child-centred and competency-based teaching to further active learning and develop students' full potential. However, the literature also revealed that there were gaps between practice and theory because a majority of the teacher educators were still using teacher -centred pedagogies and studies conducted in Kenyan TTCs the educators were struggling to adopt the paradigm in transformative pedagogical approaches and integration of digital materials in learning.

v) Effectiveness of Upgrade courses in TTCs

The term Upgrade of teachers was also in use in Ghana with diverse duration for the upgrade programmes ranging from a 3-year Diploma in Basic Education for basic school teachers which is offered by the colleges of education (CoE); a 2-year program to upgrade teachers with Certificate "A" to a diploma level and a bachelors' degree in any of the education universities in Ghana or a one-year postgraduate diploma to become a professional teacher. This proliferation of alternative paths to teacher certification was met with an increase in the demand for teachers' programme. Similarly, in Kenya, there should be an increased demand for Upgrading courses though the organisation is totally different.

The research findings have emphasised that professional development for teacher trainees is mandatory given that pre-service training is not enough to sustain teachers in their professional work. In essence the BECF (2017) envisages the paradigm shift in teaching and learning from teacher centred to learner centred learning which was not entrenched in the P1 course, ECD and DTE training previously. Monitoring and evaluation reports (KICD,2018;2019;2021;2022) have also revealed that pre-service teachers are struggling to transition to CBC pedagogical approaches which means there are challenges stemming from the TTCs training.

This implies that teachers who are trained to teach a knowledge based curriculum cannot be sustained in their professional work without Upgrading to suit the CBC demands and boast the professional competencies. Cognisant of the fact Upgrade course is not applicable in other countries though Ghana has some slight similarity, it would be prudent to adopt

terminologies that resonate with practise in other countries or consider the recommendations of the presidential working party (PWPER, 2023) on initiating year courses.

vi) Competency Based Teacher Assessment (CBTA)

Most of the research findings on CBTA assessment across different nations have demonstrated that assessments must adhere to a number of principles, which include assessment based on formative assessment procedures to foster learning and motivate students; to strengthen the relationship between students and instructors Assessment should therefore be viewed as integral to the learning and teaching process rather than as an "add on" or burden to learners in terms of workload and potentially negative social and academic consequences. Timely feedback and online assessment settings: web publication, online discussion tasks, automated scoring systems, and other evaluation goods were key to the paradigm shift to assessment. However, this study aimed at establishing how teacher educators have embraced the development and use of diverse assessment tools to determine the teacher trainees progress based on formative assessment techniques of which the literature review had limited reference with no direct relationship.

2.6 Chapter Summary

This chapter presented a summary of the literature review anchored on the research objectives, empirical information based on the relevant theories, policies and previous related research reports. It also brought out the key issues as gaps.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was employed in the study. It covers the research design, study population, sample and sampling procedure, data generation instruments and procedure and data analysis. The chapter also outlines the ethical issues that were considered during the study.

3.2 Research Design

The study was grounded on the pragmatist research paradigm which recognizes both the positivist and interpretivist approaches to research problems. The paradigm values both objective and subjective knowledge to meet research objectives. Researchers adopting a pragmatist position have the liberty to choose those research methods or strategies that can best answer their research questions (Creswell, 2007). According to the pragmatist research paradigm, the most important question is whether the research design has helped to find out what the researcher wants to know. The paradigm also allows a flexible approach that emphasises practical utility and useful knowledge in meeting the objectives.

Under the pragmatist paradigm, the study used a concurrent mixed methods design that employed both quantitative and qualitative methods. These methods allowed for the use of tools such as questionnaires, in-depth interviews, focus group discussions and observation guides.

3.3 Sampling

Sampling is a crucial aspect in methodology that enables selection of a subset from a larger population. This subset is a representative group whose information can be generalised to the whole population. The following process was used in determining sample size in this study:

3.3.1 Target population

The population of the study refers to the entire group of individuals, objects, or events that the researcher wants to investigate (Creswell, 2014). In this study the population of interest was all teacher-training colleges in Kenya. This included both public and private diploma teacher training colleges offering the Competency Based Teacher Education (CBTE) curriculum and colleges with SNE teacher trainees. There are 35 public colleges and 36

colleges (MoE, 2022). The study visited 62 colleges since some private colleges had challenges with enrolment and did not have trainees. Within these institutions, the study targeted the chief principals, deans of curriculum, teacher educators and teacher trainees.

3.3.2 Sampling techniques

In this study, the total population of public teacher training colleges was targeted for the study. This was considered appropriate because the population of teacher training colleges in Kenya is relatively small. It was not necessary therefore to divide it into strata for sampling purposes. This also guaranteed a perfect representation of the population.

From the category of private colleges, the criteria for inclusion was that the college must be registered with the Ministry of Education in Kenya and offer the competency Based Teacher Education (CBTE) curriculum. All the private teacher training colleges that meet this criterion were targeted for inclusion.

3.3.3 Sample size Determination

Respondents were obtained from the teacher training colleges as shown in Table 1.

Table 1: Sample size

Category	**Target Population**
Principals	71
Deans of curriculum/ academic registrars/HoDs	71
Teacher educators	355
Teacher trainees	710

KICD Survey, 2023

Purposive sampling was done for the teacher educators where 5 teacher educators were purposively identified to represent different subject clusters. The total number of trainees targeted in the colleges was 710. Sampling of trainees was randomly done, where at least 10 of them were drawn from different programmes (DECTE, DPTE, DSTE, UPGRADE) and different years (1st, 2nd or 3rd year) for the group discussions. To ensure gender parity in the samples, representation from all gender was considered.

3.4 Data generation techniques and Process

The survey used written questionnaires, oral interviews, Focus Group Discussion (FGD) and an observation guide as the data generation tools. The tools consisted of closed and open-ended questions. The questions focused on the key parameters of curriculum implementation as outlined in the objectives. These are: professional capacity of CBTE curriculum implementers; planning for curriculum implementation in TTCs; resource availability and use; pedagogical approaches for CBTE; capacity in undertaking competency based assessment and challenges encountered in CBTE curriculum implementation.

In each college, an oral interview was conducted with the Principal. Similarly, an interview was held with the Dean of Curriculum or the Academic Registrar or a Head of Department from each college visited. A semi-structured interview guide was designed to collect in-depth qualitative data on the effectiveness of the curriculum in preparing teacher trainees to teach in pre-primary, primary and secondary levels of education, and to identify challenges and barriers to implementation. The interviews were recorded and transcribed for analysis. Teacher trainees were guided through a focus group discussion involving not more than ten trainees in each discussion group.

In each college, written questionnaires were administered to teacher educators from different departments. Out of the identified respondents, some responded on the regular DPTE and DECTE programmes while the others responded on the upgrade programme.

The use of multiple data collection methods is important because it allows for triangulation of data, which can increase the validity and reliability of the findings (Creswell, 2014). The use of surveys, interviews, and document analysis provided a comprehensive and holistic view of the implementation of the curriculum in teacher training colleges in Kenya and enabled the study to generate rich and detailed findings.

3.5 Data analysis

The study yielded both qualitative and quantitative data. Quantitative data was generated from the closed items in the questionnaires and observation guides. The bulk of data was qualitative and was generated from the interviews, FGDs, open ended questions in the questionnaires and observations.

After the data generation exercise, questionnaire and observation data were keyed into Excel platforms for analysis. The analysis involved descriptive methods such as tables of frequencies, means and percentages.

Oral interviews and FGDs were transcribed to pave the way for analysis. The written transcripts were then subjected to a thematic analysis. This is a widely used qualitative data analysis technique that involves identifying patterns, themes, and relationships in the data (Braun & Clarke, 2019). This analysis provided insights into the challenges and barriers to curriculum implementation and the effectiveness of the curriculum in preparing teachers for primary and secondary schools. Direct quotes of respondents' views were used in the report to support and authenticate the findings. A coding system was used to maintain confidentiality of the respondents. A document analysis was conducted on professional documents observed such as schemes of work, lesson plans and records of work.

3.6 Trustworthiness of the study

This involves the steps that were taken to ensure that the entire research process was done in a trustworthy manner.

3.6.1 Trustworthiness of quantitative research

For trustworthiness, validity and reliability are critical aspects. Validity in research refers to how well a research instrument measures what it is intended to measure. There are different types of validity. In this study, content validity was considered as the most important. Content validity is defined as the degree to which items in an instrument reflect the content universe to which the instrument will be generalised (Straub, Boudreau et al., 2004). In this study, validity in the instruments was ensured through a process of validation by research and curriculum experts in teacher education. In addition, the instruments were further validated through a pilot exercise where items that appeared not to be clear will be reviewed following the piloting.

Reliability concerns the extent to which a measurement of a phenomenon provides stable and consistent results. After the piloting of the tools, the quantitative items in the questionnaires were analysed for internal consistency and Cronbach Alpha coefficients for the different items in the questionnaires obtained**.**

3.6.1 Trustworthiness of qualitative research

Trustworthiness makes reference to rigour of the study. It makes reference to the degree of confidence in data, its interpretation, and methods used to ensure quality of the study. As pointed out by Lincoln and Guba (2005) and Lichtman (2014), there are four (4) aspects of trustworthiness in qualitative research. These are credibility, transferability, dependability and conformability.

3.6.2.1 Credibility

Credibility is the extent to which the study investigates what it set out to investigate. The key concern of the study was to assess the effectiveness of the Competency Based Teacher Education (CBTE) curriculum in preparing teacher trainees to teach at pre-primary, primary and secondary levels of education. In addressing credibility, the researchers demonstrated that a true picture of the phenomenon under scrutiny is being presented. Data triangulation was used to increase the trustworthiness of the study. Data triangulation involves using multiple data sources to corroborate findings (Creswell & Plano Clark, 2018). The use of multiple data sources also allows for the exploration of multiple perspectives and the identification of patterns and relationships between variables. Data was generated from different participants such as Principals, Heads of Departments, Teacher Educators and Teacher Trainees. Different data generation tools were used in the study. These include use of questionnaires, oral interview guides as well as observation guides. Additionally, there was triangulation of data analysis methods. The study generated both quantitative and qualitative data. The two were also triangulated to give a clear picture on implementation of Competency Based Teacher Education curriculum.

3.6.2.2 Transferability

This is the extent to which the findings of the study can be generalizable to other similar contexts. Sufficient details of the context of the fieldwork were provided for a reader to be in a position to make a decision on whether the findings can justifiably be applied to other settings.

3.6.2.3 Dependability

This is the extent to which the research procedures are clear enough to readers to enable other researchers carry out similar studies in the same or other contexts. This aspect was taken care of in this study by providing a rich detail of the entire research process. Any researcher interested in replicating this study in Kenya or elsewhere, will have a clear road-map from the research problem, objectives, scope, rationale, literature and methodology to successfully do so.

3.6.2.4 Confirmability

Data generation process requires documentation to demonstrate that findings emerge from the data and not researchers' own predispositions. For this study, the process has been documented. In order to bring in neutrality in the study, the research process involved researchers and other curriculum developers from KICD. It also had representation from the MoE. This was meant to avoid biases in the research process. Overall, the data generation process was conducted in a systematic and rigorous manner. The results of the data analysis were presented in a clear and concise manner to facilitate interpretation and understanding.

3.7 Ethical Considerations

In conducting research, it is important to ensure that ethical procedures are followed to protect the participants' rights and ensure the validity and reliability of the research findings. Ethical considerations for this study include obtaining informed consent from participants, maintaining confidentiality, and ensuring that the research does not cause harm to participants.

To obtain informed consent, participants were provided with detailed information about the study, including its purpose, methods, and potential risks and benefits. They were informed that participation is voluntary, and they had an opportunity to ask questions or withdraw from the study at any time.

To maintain confidentiality, participant data was stored securely and anonymously. Only the research team had access to the data, and participants' identities were not disclosed in any publications or reports resulting from the study.

Ethical procedures for this study ensures that participants' rights are protected, and that the research is conducted in an ethical and responsible manner. To ensure that the research does

not cause harm to participants, the research team was trained to handle sensitive information and to conduct interviews in a sensitive and respectful manner. Participants were informed to skip any questions that they feel uncomfortable answering, and they were provided with resources for support where necessary. In this study, this included writing materials and a different environment from others when responding.

The ethical procedures for this study was guided by the principles of the Belmont Report (1979), which outlines the ethical principles of respect for persons, beneficence, and justice. These principles aim to protect the rights of participants and ensure that research is conducted in an ethical and responsible manner (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). During training, emphasis was given on respect to the respondents and their opinions.

In addition, the study followed the ethical guidelines set forth by the International Council for Educational Development (ICED), which provides guidance on ethical conduct in educational research (ICED, 2006).

The study adhered to the ethical guidelines set forth by the Kenyan National Commission for Science, Technology, and Innovation (NACOSTI), which requires that all research involving human subjects in Kenya follows ethical principles and guidelines (NACOSTI, 2018). The research team obtained permission from the relevant authorities, such as the Ministry of Education and the teacher training colleges, before conducting the study. This ensured that the study was conducted with the necessary approvals and that the research carried out in compliance with the regulations and laws for data generation and handling.

Any potential conflict of interest was to be disclosed and addressed before and during the study. In this study, there was none. The research team avoided any personal or financial conflicts of interest that may compromise the validity or impartiality of the study results.

Ethical procedures for this study ensured therefore that the research was conducted in a manner that protected the rights of participants and adhered to ethical principles and guidelines. This gives confidence that the research findings are trustworthy.

3.8 Chapter Summary

In this chapter, the research process has been explained. In view of the aforementioned, a mixed approach was adopted with both quantitative and qualitative data being generated

concurrently. Data was generated through different tools including questionnaires, interview guides and observation schedules. The quantitative data was analysed using descriptive statistics while the qualitative data was analysed thematically. Relevant ethical considerations were adhered to and followed to ensure protection of the respondents and that the findings remain trustworthy.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the findings for each objective of the study. These are presented using descriptive statistics such as frequencies, percentages and means. Narratives have also been used especially in presenting findings from the qualitative data. Direct quotes from respondents have been used to support the narratives. Tables and charts are also used to present findings in a summarised manner.

4.2 Demographics

The study used 5 categories of data generation instruments. These were: interview guides for Principals and Deans of Curriculum; written questionnaires for Teacher educators; and FGD for Teacher Trainees and an observation guide. The target numbers and achieved responses were as shown in Table 1.

Table 2:Target respondents and response rates

Target respondents and response rates

Category	Target number	Achieved response rate
Principals	71	62 (87.3%)
Teacher Educators	355	285 (80.3%)
Deans of Curriculum	71	55 (77.5%)
Teacher Trainees	710	590 (83.1%)
Observations	40	31 (77.5%)
Overall	1247	1023 (82.0%)

4.3. Preparedness of teacher educators to implement CBTE

This section unveils a comprehensive understanding of the extent to which the teacher educators demonstrate proficiency in translating CBTE principles into effective teaching methodologies.

CBTE stands as a transformative paradigm, emphasising the acquisition of practical competencies alongside theoretical knowledge. The role of teacher educators becomes paramount in this context, as they are tasked with navigating this innovative approach and imparting it seamlessly to the next generation of educators.

This study delves into multiple dimensions, evaluating how teacher educators approach curriculum design, implement diverse assessment strategies, harness technology, incorporate inclusive teaching practices, and emphasise practical application. The findings not only shed light on their strengths but also illuminate areas where further enhancements could fortify the implementation of CBTE in the TTCs.

4.3.1 Training of the teacher educators

In order to assess the teacher educators' professional competence in CBTE implementation in TTCs, this study sought to determine whether the teacher educators had attended training on CBTE curriculum. The results are presented in Table 2.

Table 3:Training on Competency Based Teacher Education

	Frequency	Percentage
Attended	257	90.5
Not Attended	27	9.5

The results of Table 2 reveal that the majority of respondents, constituting 90.5%, had attended training on Competency-Based Teacher Education (CBTE), while a smaller percentage, 9.5%, had not undergone such training.

This proportion of individuals who received CBTE training suggests a significant level of exposure and familiarity with the CBTE curriculum. The considerable attendance at training sessions indicates an active engagement with professional development opportunities related to CBTE among teacher educators. Conversely, the 9.5% who had not attended CBTE training represent a group with a potential need for such professional development. This subset of individuals might benefit from opportunities to enhance their understanding and application of CBTE principles, aligning their instructional practices with contemporary educational approaches.

The contrast in percentages between those who attended CBTE training and those who haven't underscores the importance of continuous professional development. It suggests a positive trend towards upskilling educators in alignment with evolving pedagogical approaches.

Findings of Table 3 illustrates participants' responses to the question of whether they had attended training. The responses are categorised by different teacher education programs:

DECTE (Diploma in Early Childhood Teacher Education), DPTE (Diploma in Primary Teacher Education), and DSTE (Diploma in Secondary Teacher Education). This breakdown allows for a comparative analysis of training attendance among participants from various teacher education background.

Table 4:Teacher Training per category

	Attended		Not attended	
	F	%	f	%
DECTE	62	89.9	7	10.1
DPTE	177	91.7	16	8.3
DSTE	18	81.8	4	18.2

The table presents a retrospective analysis of participants' attendance at training sessions on Competency-Based Teacher Education (CBTE) across different teacher education programs. In the Diploma in Early Childhood Teacher Education (DECTE) category, 89.9% of respondents had attended the training, while 10.1% had not. The Diploma in Primary Teacher Education (DPTE) showed a higher attendance rate, with 91.7% of participants having attended the training and 8.3% not having attended. Similarly, the Diploma in Secondary Teacher Education (DSTE) had an attendance rate of 81.8%, with 18.2% indicating non-attendance. These findings suggest that, during the period under consideration, a substantial majority of participants in each program engaged in CBTE training, with some variations across programs. The outcomes underscore the importance of training participation in the context of implementing CBTE and reveal potential areas for targeted interventions to ensure comprehensive coverage and engagement across all teacher education programs.

The principals expressed the need for follow-up training after initial sessions. Some principals mentioned attending two effective training sessions, initially feeling somewhat lost coming from a secondary and diploma college background but gradually learning over time. The acknowledgment of training being done through a multi-agency approach indicates collaborative efforts involving various stakeholders such as KICD, KNEC, TSC and MOE. This underscores the need for collaboration in implementing CBTE training,

involving multiple stakeholders to ensure comprehensive and effective professional development.

> **Dean of Curriculum:** We have been trained by KNEC, TSC, KICD and the ministry of education **(DOC-INT-ASU-P-HOM).**
>
> **Principal:** This training has been helping us on how to boost level of performance of learners in school … **(P-INT-KIT-P-KIT).**
>
> **Principal:** We have had to go through trainings, we have been retooled and think as many times as three. That has really gone a long way to, to, to guide us on what we need to do **(P-INT-LUG-P-KAK).**
>
> **Principal:** Initially, educators were not well prepared but continuous induction and retooling of these Educators has now made them better in implementing CBTE. **(P-INT-KAN-P-MIG)**.

4.3.2 Teacher Educators' Professional Competence in preparing Lessons

The findings in Table 4 offers insights into the utilisation of learning experiences harmonised with learning outcomes, the formulation of pertinent key inquiry questions, adoption of diverse pedagogies tailored for competency development, and the incorporation of ICT in lessons. The findings shed light on the balance between content and pedagogy, the provision of diverse resources, and the integration of formative assessments.

Table 5: Teacher Educators' Professional Competence in preparing Lessons

Aspect		Percentage
a)	Use of learning experiences that are in line with learning outcomes	83.6
b)	Use of appropriate key inquiry questions during the lesson	76.6
c)	Use of varied pedagogies suitable for developing trainees' competencies based on intended learning outcomes	70.8
d)	Use of pedagogical approaches that lead to active participation and involvement of teacher trainees	77.2
e)	Integration of content and pedagogy during lesson delivery.	71.8
f)	Integration the use of ICT in the lesson.	53
g)	Use of varied resources during lesson delivery.	60.8
h)	Provision of opportunities for trainees to develop core competencies.	74.8
i)	Provision of opportunities for teacher trainees to nurture and practice values during the lesson.	68.4
j)	Mainstreaming of Pertinent and Contemporary Issues (PCIs) when	56.2

	facilitating learning.	
k)	Use of formative assessment during the lesson to check on the teacher trainees' understanding.	72.2
Overall		**69.6**

The findings of Table 4 reveal several key findings concerning the degree to which teacher educators demonstrated professional competence in the implementation of CBTE within Teacher Training Colleges (TTCs).The mean percentage of teacher educators professional competence in preparing lessons was 69.6% It was evident that the majority of teacher educators exhibited commendable proficiency in incorporating learning experiences aligned with the specified learning outcomes, with a percentage of 83.6. This finding suggests a strong alignment between instructional content and the intended educational goals. The study found that teacher educators effectively utilised appropriate key inquiry questions during lessons, achieving a notable percentage of 76.6. This outcome points towards an active engagement with CBTE methodologies, fostering critical thinking and inquiry-based learning among teacher trainees.

A significant proportion, reaching 70.8%, of teacher educators was observed to employ varied pedagogies tailored to the development of trainees' competencies based on intended learning outcomes. This diversity in teaching methods indicates a responsive and tailored approach to meet the varied needs of teacher trainees. The findings also highlighted that 77.2% of teacher educators utilised pedagogical approaches fostering active participation and involvement of teacher trainees. This suggests the creation of an interactive and engaging learning environment, aligning with the principles of CBTE.

It was noted that teacher educators integrated content and pedagogy during lesson delivery at a rate of 71.8%, ensuring a cohesive approach to teaching that aligns instructional methods with the content being taught. However, an area identified for potential improvement was the integration of Information and Communication Technology (ICT) in lessons, with a reported percentage of 53%. This indicates a noteworthy aspect where enhancements could be considered to further leverage technology as a teaching tool.

Regarding the use of varied resources during lesson delivery, teacher educators demonstrated a moderate level of diversity, with 60.8% utilising a range of instructional materials. Significantly, 74.8% of teacher educators provided opportunities for trainees to

develop core competencies aligned with CBTE principles. This underscores a commitment to the fundamental goals of CBTE, ensuring the holistic development of teacher trainees. Moreover, teacher educators were reported to provide opportunities for teacher trainees to nurture and practice values during lessons at a rate of 68.4%, reflecting a holistic approach that goes beyond mere academic instruction.

In terms of integrating Pertinent and Contemporary Issues (PCIs) when facilitating learning, the study found that 56.2% of teacher educators engaged in mainstreaming such issues, indicating a moderate incorporation of current and relevant topics in the lessons. Lastly, a noteworthy finding was the use of formative assessment during lessons, with 72.2% of teacher educators employing this method to check on the understanding of teacher trainees. This approach aligns with the principles of continuous monitoring and feedback in the CBTE framework.

Table 5 provides a detailed assessment of Teacher Educators' Professional Competence in preparing lessons within the context of Competency-Based Teacher Education (CBTE). The table is structured to highlight the performance of teacher educators across three distinct categories: Diploma in Early Childhood Teacher Education (DECTE), Diploma in Primary Teacher Education (DPTE), and Diploma in Secondary Teacher Education (DSTE). The various aspects of professional competence, such as developing learning outcomes, designing learning experiences, and integrating values within the learning process, are measured through mean percentages. These metrics offer a comparative analysis, allowing for an in-depth exploration of the strengths and potential areas for improvement across the different teacher education programs. The table aims to provide insights into the nuanced variations in professional competence among teacher educators, facilitating targeted efforts for enhancing the overall effectiveness of CBTE implementation within each educational category.

Table 6:Teacher Educators' Professional Competence in preparing Lessons by Category

Aspect		DECTE (n=70)	DPTE (n=193)	DSTE (n=22)
a)	Developing appropriate learning outcomes that include knowledge, skills and attitudes for a specific lesson.	86.6	83.8	86.4
b)	Designing appropriate learning experiences in line with learning outcomes.	85.2	83.2	85.4

c)	Providing opportunities for developing core competencies within the learning experiences.	78.2	77.4	81.0
d)	Providing opportunities for nurturing and practising values among teacher trainees.	80.6	78.2	83.6
e)	Formulating key inquiry questions.	86.8	82.0	87.2
f)	Mainstreaming Pertinent and Contemporary Issues (PCIs) in the learning process.	76.6	76.8	81.0
g)	Linking ideas or concepts in one subject to another.	82.8	81.6	86.4
h)	Using non-formal activities to reinforce learning.	80.0	75.2	68.2
i)	Using varied pedagogical approaches that lead to active participation and involvement of teacher trainees.	82.8	82.6	84.8
j)	Integrating content and pedagogy during curriculum delivery.	82.0	80.4	86.4
k)	Conducting remote/online classes.	65.2	63.6	57.2
Mean Percent		**80.6**	**78.6**	**80.7**

The comparison of Teacher Educators' Professional Competence in Preparing Lessons, presented in Table 4, offers a comprehensive view of the proficiency variations among different groups—DECTE, DPTE, and DSTE—in implementing Competency-Based Teacher Education (CBTE) principles. Examining the mean percentages reveals that DECTE, with a score of 80.6%, exhibits a slightly higher level of overall professional competence compared to DPTE (78.6%) and DSTE (80.7%). This suggests that, on average, teacher educators in DECTE demonstrate a marginally stronger performance across various competency areas.

The individual competency areas explored in the comparison encompass aspects such as developing learning outcomes, designing learning experiences, providing opportunities for core competencies, nurturing values, formulating key inquiry questions, mainstreaming Pertinent and Contemporary Issues (PCIs), linking ideas across subjects, using non-formal activities, employing varied pedagogical approaches, integrating content and pedagogy, and conducting remote/online classes. While there are slight variations in specific competency areas, the overall trend indicates a high level of professional competence among teacher educators in all three groups.

The implications of the comparison point towards areas for potential improvement, particularly in aspects with lower percentages, such as conducting remote/online classes. This information can guide targeted professional development initiatives and the sharing of best practices among different groups, fostering an environment of continuous improvement.

The findings indicate an overall positive trend in the demonstration of professional competence by teacher educators in implementing CBTE. The identified areas for improvement, such as the integration of ICT, provide valuable insights for refining the implementation of CBTE in Teacher Training Colleges.

These findings collectively depict a landscape where teacher educators within the Teacher Training Colleges have demonstrated a commendable commitment to the principles of Competency-Based Teacher Education. The emphasis on aligning learning experiences with outcomes, employing diverse pedagogies, and fostering active participation underscores a proactive approach to nurturing the competencies of teacher trainees.

While the integration of ICT in lessons revealed an area where enhancements could be beneficial, the reported utilisation of varied resources suggests a balanced mix of instructional materials, contributing to a multifaceted learning environment.

A significant highlight was the provision of more opportunities for teacher trainees to not only develop core competencies but also to cultivate values. This holistic approach aligns with the broader goals of education, emphasising not just knowledge acquisition but also the development of well-rounded, principled educators. The integration of Pertinent and Contemporary Issues (PCIs) in lessons, although moderate, signifies an awareness of the importance of connecting educational content with current societal realities. This integration can contribute to a more contextualised and relevant educational experience for teacher trainees.

The consistent use of formative assessment strategies is a positive aspect that aligns with the continuous monitoring and feedback principles inherent in CBTE. This practice ensures that teacher trainees' understanding is regularly assessed, allowing for timely adjustments in instructional approaches.

4.3.4: Teacher Educators' Professional Competence in applying Pedagogical Approaches

Findings from this study revealed that teacher educators adopted a variety of pedagogical approaches to ensure that CBTE implementation was successful.

i. Instructional materials

Responses from the Teacher Educators and trainees highlight the diverse approaches employed by educators in preparing instructional materials. The use of curriculum design tools was acknowledged as a resource to gather information for the preparation of class notes. The trainees laid a strong emphasis on their competence in preparing essential teaching documents such as lesson plans, lesson notes, and schemes of work. The trainees expressed familiarity with the preparatory aspects of teaching, underscoring their understanding of the integral role played by well-structured instructional materials. The engagement in group and peer assessment, as mentioned by trainees, indicates a collaborative learning environment where trainees actively participate in evaluating each other's work, fostering a culture of shared responsibility and continuous improvement in teaching practice.

> **Teacher Educator:** Some tutors have textbooks; others have made notes; they use curriculum design tools to source information to prepare class notes **(TR-FGD-BOR-P-NYAM).**
>
> **Trainee:** We know how to prepare lesson plans, lesson notes and schemes of work. **(TR-FGD-BON-P-BUS).**
>
> **Trainee: …**how to prepare as a teacher before start of lesson **(TR-FGD-NYA-P-HOM).**
>
> **Trainee:** Started from the first term, prepare lesson notes, lesson plan, schemes of work. Groups and peer assessment through check list. **(TR-FGD-KAM-P-NYE).**

ii. Integration of ICT

The integration of ICT into lesson delivery was evident in instances where lesson notes were available in soft copy, providing trainees with convenient access to instructional materials. This modern approach aligns with the evolving landscape of education technology, enhancing accessibility for both teachers and learners. Teacher educators were able to access online teaching resources that supplemented the print materials they were using for effective teaching.

However, digital literacy emerged as a concern, with some respondents expressing unease about the adequacy of training in this area. Resource limitations, such as the absence of projectors for presentations, were highlighted, which hindered effective integration of ICT skills.

> **Principal:** KICD to work with MOE to develop DLP for the teacher colleges. Develop content for TTC's **(P-INT-RUB-PR-THA).**

Principal: This is the way to go but preparations for the provision of DLP and internet is to be setup first **(P-INT-MAN-PR-MAN)**.

Principal: Teachers use computers to search for information. They are not sufficient and relevance of information is questionable **(P-INT-MAN-PR-MAN**).

Principal: KICD to assist us on how to access the gadgets for assessment. Let the government also take into consideration private institutions to improve collaboration between public and private **(P-INT-INT-PR-KAJ)**.

Principal: …So we borrow tablets from the primary school **(P-INT-HOL-PR-MAC**).

iii. Content Coverage

Teacher trainees noted that teacher educators were able to break strands and sub strands into teachable units. However, an overarching concern revolves around the time allocated for the extensive workload associated with the curriculum, prompting a collective call for a reduction in workload to enhance overall performance. Additionally, Teacher trainees noted that they had not learnt the foreign languages in high schools. Therefore, they needed more time to cover and understand adequately the concepts they were being taught in the foreign languages.

Some respondents proposed reviewing the curriculum to either cut down on certain strands or add more time, striking a balance between comprehensive coverage and practical constraints. This suggestion acknowledges the need for a curriculum that is both thorough and feasible within the designated time frame. Teacher educators noted that they were competent in their teaching. However, they cited lack of recommended course books and other teaching/learning resources to facilitate the implementation of the Competency-Based Curriculum (CBC) in colleges, emphasising the importance of supportive materials for effective curriculum delivery.

Principal: … KICD can come and boost us, colleges have no text books **(P-INT-RAC-PR-MIG).**

Principal: … bookshops without (textbooks)... so that's the challenge yea but from the design they are so elaborate that they guide us so well yes **(P-INT-RAC-PR-MIG).**

Principal: … textbooks are expensive but if the KICD can do more that can be… at a cost that will be cheaper **(P-INT-RAC-PR-MIG).**

iv. Effectiveness in micro teaching

The teacher trainees' perspectives on microteaching underscore the pivotal role it plays in their teacher education journey. The teacher trainees emphasised the active guidance

provided by lecturers during microteaching sessions, highlighting a supportive learning environment where educators are present to correct and guide them. The incorporation of group assignments enhances collaborative learning, allowing trainees to apply their knowledge collectively and present their findings in the classroom. Notably, the emphasis on qualities such as confidence, audibility, and belief in their teaching methods reflects a holistic approach to teacher preparation. Trainees appreciated constructive feedback, as lecturers intervened when inappropriate methods were detected, fostering a culture of self-reflection and improvement.

Trainee: When doing micro teaching, our lecturers are always there to guide us and they correct us where we are wrong. We are given assignments in groups where we do and come to present in the class. **(TR-FGD-SEM-P-KSM).**

Trainee: They tell us that we must be teachers who are confident, audible and believe in what you are saying. They have encouraged us when teaching and if they find out you are using the wrong method they stop you and tell you are using the wrong method. We also critique ourselves. They also show us how to dress and also how to integrate ICT **(TR-FGD-UGE-P-SIA).**

Trainee: we have carried out micro teaching in our classrooms; they guided us on how to prepare professional documents (**TR-FGD-PAU-P-KIS).**

Trainee: We have lessons planned when we are doing micro teaching in our classes teaching our peers. We have been taught how to do learners' progress records **(TR-FGD-KIT-P-KIT).**

Trainee: teachers here have been preparing us for micro teaching. We are learning microteaching itself as a learning area as a unit. So during that lesson we are taught the different methods of teaching and we are given a chance to work in groups and then present. So we get the experience of teaching. **(TR-FGD-GAL-P-KIL)**

v) Learning through projects and research

The respondents emphasised the importance of practical training, urging a shift from theoretical content to more hands-on, applicable teaching skills.

Dean of Curriculum: they have the capability to develop and administer CBA tools for example rubrics, task oriented activities among others **(DOC-INT-NAK-PR-NAK).**

Trainee: in the practicum, the teacher have been saying that when you are going to class, you must have enough learning resources. And the learning resources vary to the age of the learners. They should be learners appropriate **(TR-FGD-GAL-P-KIL).**

Trainee: I am getting equipped with skills, the values and the knowledge that I need to conduct learners in the classes, the learners that are going to be doing the CBC. **(TR-FGD-GAL-P-KIL).**

vi) ***Assessment***

The respondents' perspective on the assessment practices within the teacher education program reveals a positive outlook on the educators' capabilities in developing and assessing using Competency-Based Teacher Assessment (CBTA). The acknowledgment that they are proficient in CBTA aligns with the principles of Competency-Based Teacher Education (CBTE) and underscores their commitment to evaluating teacher trainees based on demonstrated competencies.

> **Dean of Curriculum** they are capable to develop and assess using CBTA, they have been doing practicum online **(DOC-INT-KER-P-KER).**
>
> **Dean of Curriculum** they do it perfectly well. The upgrade is the evidence; they access learners properly. But KNEC has brought back the examinations, which is not right **(DOC-INT-KER-P-KER**).

iv) Undertaking the various aspects of the CBTE curriculum designs

This section systematically explores the educators' capabilities in developing appropriate learning outcomes, designing aligned learning experiences, providing opportunities for core competency development, nurturing values, formulating key inquiry questions, mainstreaming Pertinent and Contemporary Issues (PCIs), linking ideas across subjects, using non-formal activities for reinforcement, employing varied pedagogical approaches, integrating content and pedagogy during curriculum delivery, and conducting remote/online classes. Each aspect is quantitatively measured to capture the percentage of educators who perceive themselves as effective in these fundamental areas. This detailed analysis aims to provide a nuanced understanding of educators' strengths and potential areas for improvement in implementing the CBTE curriculum.

Table 7:Effectiveness in undertaking the various aspects of the CBTE curriculum designs

Aspects	**%**
Developing appropriate learning outcomes that include knowledge, skills and attitudes for a specific lesson.	84.8
Designing appropriate learning experiences in line with learning outcomes.	83.8

Providing opportunities for developing core competencies within the learning experiences.	77.8
Providing opportunities for nurturing and practising values among teacher trainees.	79.2
Formulating key inquiry questions.	83.6
Mainstreaming Pertinent and Contemporary Issues (PCIs) in the learning process.	77.2
Linking ideas or concepts in one subject to another.	82.2
Using non-formal activities to reinforce learning.	75.8
Using varied pedagogical approaches that lead to active participation and involvement of teacher trainees.	82.8
Integrating content and pedagogy during curriculum delivery.	81.2
Conducting remote/online classes.	63.6
Overall	**79.3**

The study revealed that a significant percentage of respondents, 84.8%, believed they were highly effective in developing appropriate learning outcomes that encompassed knowledge, skills, and attitudes for specific lessons. This finding suggests a strong historical confidence among educators in their ability to articulate clear and comprehensive educational objectives aligned with CBTE curriculum. Additionally, 83.8% of the respondents expressed satisfaction in their past performance regarding the design of appropriate learning experiences in line with specific learning outcomes. This efficacy indicates a recognized capacity among educators to create educational activities that directly support the intended goals of the CBTE curriculum. Furthermore, 77.8% of respondents believed they were effective in providing opportunities for the development of core competencies within learning experiences, underscoring their commitment to fostering essential skills and knowledge acquisition. This perspective sheds light on educators' perceptions of their proficiency in critical aspects of CBTE implementation.

In the realm of values education, 79.2% of respondents acknowledged their effectiveness in providing opportunities for teacher trainees to nurture and practice values within the curriculum. This commitment to values-based education suggests a holistic approach that extends beyond traditional knowledge transfer. Formulating key inquiry questions, a crucial aspect of inquiry-based learning, received a high rating of 83.6%, showcasing educators' past confidence in guiding critical thinking and exploration. Moreover, the integration of Pertinent and Contemporary Issues (PCIs) into the learning process, a cornerstone of

relevance in education, was deemed effective by 77.2% of participants. This efficacy suggests a consistent effort among educators to connect real-world issues with academic content. Respondents also reported a high effectiveness of 82.2% in linking ideas or concepts across subjects, demonstrating their ability to promote interdisciplinary connections within the curriculum.

Additionally, 75.8% of teacher educators considered themselves effective in using non-formal activities to reinforce learning, indicating versatility in teaching methods beyond traditional approaches. The use of varied pedagogical approaches, rated at 82.8%, reflected educators' confidence in employing diverse teaching methods to encourage active participation and involvement. Furthermore, the integration of content and pedagogy during curriculum delivery received a significant rating of 81.2%, indicating educators' effectiveness in aligning instructional methods with subject matter to enhance the overall learning experience.

However, the effectiveness in conducting remote/online classes received a relatively moderate rating of 63.6%, suggesting that educators perceived this aspect as presenting opportunities for growth in adapting to digital teaching methods.

The responses from teacher trainees reflect a positive perspective on the effectiveness of their training in preparing them for the teaching profession. Trainees expressed a comprehensive preparation, highlighting their ability to handle diverse categories of learners, embrace inclusivity, and understanding the unique needs of learners. The trainees emphasised the significance of a learner-centred approach in delivering content, enabling them to interact with learners outside the classroom and engaging with communities effectively. The training provided valuable insights into fostering mentorship skills, and creating a conducive learning environment. Furthermore, the emphasis on core competencies, values, and effective communication skills aligns with the broader goals of national education, emphasising an all-encompassing approach to learner development.

> **Trainee:** I can say we have been helped to acquire competency of CBC where we are given a task, we do it and present it to our fellow learners. **(TR-FGD-KIT-P-KIT).**
>
> **Trainee:** The way knowledge is being delivered is clear. Also our teachers boost our confidence during the presentation **(TR-FGD-GAR-P-GAR).**

Trainee: … our trainers are really really working hard on that, and we are thanking them because they are really equipping us with different methods **(TR-FGD-GAL-P-KIL)**.

4.3.5 Effectiveness of the Upgrade programme

This section presents findings on the perceived effectiveness of the upgrade program among respondents. This section scrutinises educators' responses, including principals, teacher educators, deans of curriculum, and teacher trainees, providing valuable insights into the program's strengths and areas for potential enhancement.

The creation of specific curriculum designs for different upgrade levels, such as UDECTE and DECTE, was suggested to ensure alignment with the specific needs of each group. The respondents noted that the content for UDECTE and UDPTE was quite similar and there was a need to develop unique content for each of the programmes.

Principal: Most of the content is not fully taught. The UDPTE and UDECTE content is 75% similar**(P-INT-HOL-P-MAC).**

The respondents lauded the Upgrade programme noting that it had equipped the trainees with 21st century skills. The programmed helped P1 teachers to acquire practical skills that they could impart to the trainees.

Principal: It makes the former PTE graduates to attain CBC skills and them compliant **(P-INT-**BUN-**P-VIH)**.

Teacher Educator: Upgrade program adequately prepares teachers since they are equipped with new ideas, pedagogies in implementing the CBC **(T-Q-JOS-P-VIH)**.

Teacher Educator: It equips the teachers with necessary knowledge and skills for implementing CBC **(T-Q-PAU-P-KSM)**.

Table 8 presents an evaluation of the effectiveness of the upgrade program in preparing teachers for the implementation of the Competency-Based Curriculum (CBC). The percentages reveal the proportion of respondents in each category, providing a quantitative glimpse into the community's overall assessment. This table serves as a crucial instrument for understanding the perceived strengths and limitations of the upgrade program, offering valuable insights into the ongoing efforts to equip teachers with the necessary skills and knowledge for effective CBC implementation.

Table 8:Effectiveness of the upgrade program in preparing teachers to implement CBC

Response	f	%
Effective	145	55.3
Not effective	117	44.7

The findings presented in Table 7 reveals that 55.3% of the respondents affirm that the upgrade program adequately prepares teachers for the implementation of Competency-Based Curriculum (CBC), while 44.7% expressed reservations, indicating a belief that the program falls short in adequately preparing teachers for CBC implementation. These findings showcase a divided perspective among the respondents regarding the effectiveness of the upgrade program in equipping teachers for the requirements of CBC. The affirmative responses suggest a level of confidence in the program's efficacy, while the dissenting opinions underscore potential areas for improvement or concerns about the program's comprehensiveness.

The program was acknowledged for its role in equipping teachers with new ideas and pedagogical approaches essential for the effective implementation of CBC. It was seen as a valuable platform for introducing 21st-century skills, appropriate pedagogical methods, and competency-based assessment strategies. The exposure to these modern teaching approaches was perceived as a significant benefit, aligning teachers with contemporary educational practices.

The program's efficacy was also lauded in terms of its ability to enable former PTE graduates to transfer their existing content knowledge into the CBC framework. Respondents saw this as a valuable aspect that facilitates a smoother transition and compliance with CBC requirements.

However, concerns were raised about the one-year duration, with some perceiving it as inadequate given the broad-based nature of CBC curriculum designs. The issue of covering extensive content within a limited timeframe was evident, prompting suggestions for either an extended duration or a more specialised focus in line with the subjects chosen during P1 training.

> **Teacher Educator:** Time is short **(T-Q-BUN-P-VIH).**

Teacher Educator: I think more time should be added and a separate design be made for the group **(T-Q-BUN-P-VIH).**

Teacher Educator: course content is too much for the duration (1 year) **(T-Q-ISL-PR-MSA).**

There was a nuanced perspective related to subject combinations, with some respondents asserting that the program's effectiveness was contingent on teachers upgrading in the same subjects they studied during PI. This aligns with the notion that familiarity with the subject matter enhances the program's impact.

Teacher Educator: Can only be effective if they upgrade in the subject combinations they did in PI. The contents are too much for the period of coverage. Can only be effective if duration of coverage is increased or when trainees are allowed to upgrade in learning areas they trained in PI **(P-INT-BUN-P-VIH).**

Teacher Educator: The trainees need to pursue the areas they undertook at P1- Sciences A; Arts B. **(T-Q-KAI-P-VIH).**

Teacher Educator: The one year course duration is inadequate to prepare the aspired competent teachers given that the curriculum designs are broad-based **(T-Q-KAI-P-VIH).**

The articulation of pedagogical methods, assessment strategies, competencies, values, and approaches to handling CBC was acknowledged positively, indicating that the program is comprehensive in addressing various aspects of CBC implementation. The respondents regarded the program as useful, mentioning that it sharpened the trainees' skills.

Principal: Quite effective: interesting; trainees enjoy this kind of teaching **(P-INT-KAI-P-VIH).**

Principal: The upgrade teachers are taught new ways of developing learning outcomes that include knowledge skill and attitude. Some new things have been introduced that requires them to be up to date **(P-INT-NAB-P-BUN).**

Principal: They are able to acquire more competent skills in teaching **(P-INT-NAB-P-BUN).**

The principals noted that the upgrade programme was good and beneficial. Trainees acquired content for their level and expressed satisfaction with the program's ability to introduce new ideas. The engagement in mentorship and interactive learner-centred pedagogies was highlighted as a positive aspect of the program. However, they suggested a re-evaluation of the time organisation and structure of the upgrade program, considering the workload and ensuring that the training adequately prepares teachers for CBC implementation.

The responses from principals, teacher educators, deans of curriculum and teacher trainees reflected a range of suggestions to enhance the effectiveness of the upgrade program.

Among the notable suggestions was the proposal for a distinct curriculum design tailored specifically for the upgrade program, recognizing the unique needs and backgrounds of the teacher trainees. It was widely advocated that teachers should specialise in their areas of competence during the upgrade, ensuring a more targeted and relevant training experience.

> **Teacher Educator:** a curriculum design for upgrade to be developed; upgrading to be done in areas of specialisation during PI **(T-Q-UGE-P-SIA).**
>
> **Teacher Educator:** develop a curriculum design for a year; need support programmes after training **(T-Q-SEM-P-KSM).**
>
> **Teacher Educator:** provide curriculum design for upgrade. at least two years of study. **(T-Q-RON-P-NAK)**.

4.4 Effectiveness of planning by the Teacher Educators for implementation of CBTE

Planning is a critical component of any curriculum delivery process including the Competency Based Teacher Education (CBTE) curriculum. Considering that curricula scholars agree on the conceptualization of curriculum implementation as a process of putting into effect the agreed plans, decisions and ideas, it was imperative for this study to establish the effectiveness of planning by the teacher educators for implementation of CBTE in the Teacher Training Colleges (TTCs). This information was sought through interviews conducted with principals, teacher trainees, deans of curriculum and heads of departments in selected colleges. In addition, questionnaires were administered to teacher educators to solicit information relating to planning for CBTE implementation.

4.4.1 Planning Efficacy

Essentially, this study interrogated the subject of planning by looking at the preparation of professional documents by teacher educators and the conduct of practical sessions in the course of study. Explicitly, the data generation focused on how the officially designed CBTE course of study is translated by the teacher educators into schemes of work and lessons to be delivered to teacher trainees with the guidance of the curriculum designs. Data from the questionnaires looked at among other things, the teacher educators' effectiveness in undertaking certain aspects of the curriculum design which is the mother document from which planning for learning experiences takes place. Based on self-evaluation, the teacher educators responded as shown in Table 9.

Table 9:Teacher Educators Self Evaluation on Use of Curriculum Designs

Aspect of CBTE Curriculum Designs		Percent			Overall
		DECTE	DPTE	DSTE	
a)	Breaking down the learning outcomes within the time provided in the curriculum designs.	78.6	77.2	76.4	77.4
b)	Sourcing for relevant learning resources to enhance the achievement of learning outcomes.	76.0	73.4	68.2	73.6
c)	Designing appropriate Community Service Learning (CSL) activities.	69.4	74.0	65.4	72.2
d)	Planning for varied pedagogies suitable for developing trainees' competencies.	78.8	79.4	81.0	79.4
e)	Keeping a record of own achievements and applying self-reflection to improve practice.	80.0	76.8	75.4	77.6
Mean Percent		**76.6**	**76.2**	**73.3**	**76.0**

Looking at the ratings in Table 4.1, it can be seen that overall, teacher educators are effective in all the aspects of curriculum designs relating to planning because all the ratings are above 70%. Notably, they seem to be more effective in certain aspects compared to others. For instance, they scored very highly on the aspect of planning for varied pedagogies suitable for developing trainees' competencies (79.4%) and keeping a record of their own achievements and applying self-reflection to improve practice (77.6%). On the other hand, such aspects like sourcing for relevant learning resources to enhance the achievement of learning outcomes and designing appropriate CSL activities got a rating of 73.6% and 72.2% respectively. Based on the levels of teacher education programs, it can also be seen that teacher educators in DECTE and DPTE programs rate almost the same (76.6% and 76.2% respectively) in their effectiveness to undertake the various aspects of curriculum design. On the other hand, the rating of those in the in DSTE program was 73.3%.

In addition to the efficacy ratings, the teacher educators also indicated the extent to which they agreed with certain statements pertaining to CBTE curriculum designs. The scores are shown in Table 9.

Table 10:Teacher Educators' Agreement with CBTE Curriculum Designs Aspects

	Statement Pertaining to CBTE	(%)
a)	Teacher Education Curriculum designs are easy to interpret.	76.0
b)	Components of the curriculum design are logically sequenced.	76.2
c)	The learning experiences support inquiry-based learning approaches.	82.0
d)	The learning experiences support different learning styles.	78.8
e)	The learning experiences are appropriate to teacher trainees' needs.	78.6
f)	The learning experiences promote acquisition of core competencies.	82.6
g)	The learning experiences support achievement of specific learning outcomes	83.6
h)	The curriculum designs promote collaborative and active learning processes.	86.4
i)	The designs embrace the use of the trainees' immediate physical surroundings in and out of the classroom.	81.4
j)	The suggested key inquiry questions enhance learning	81.8
k)	The curriculum designs adequately address nurturing of values	79.0

Table 10 shows that teacher educators agreed to a high extent that the CBTE curriculum designs promote collaborative and active learning processes (86.4%), and that learning experiences support achievement of specific learning outcomes (83.6%). Whereas most items were scored above 80%, the aspect of logical sequencing of components of the curriculum design was rated at 76.2% and ease of interpreting teacher education curriculum designs scored at 76.0%.

These findings are supported by qualitative data where the teacher educators had to make a comment on their scores. A majority indicated that they were able to break down the specific learning outcomes within the appropriate time. Further, the teacher educators noted that the creation of lesson outcomes was quite attainable, and that they understood the different aspects of the curriculum designs which made it easy to interpret. On the other hand, they appeared to agree on the challenge of formulating KIQs and designing CSL activities. This is prominent in the following excerpts.

Teacher Educator: the curriculum designs have been incorporated well that teacher trainees get the best skills, knowledge and values… **(TE-QN-KEW-P-KER)**.

Teacher Educator: related to learning outcomes. there are also a few disconnect in some learning areas i.e. basketry and weaving **(TE-QN-KER-P-KER)**.

Teacher Educator: The interpretation fairly captures many aspects correctly, however there some which need more interpretation as the implementation goes on i.e. formulation of KIQ can capture innate ability of the trainees **(TE-QN-MWI-PR-KIT)**.

Teacher Educator: generally, the interpretation is good though at times the time allocated becomes a challenge to effectively implement some concepts especially with CSL due to squeezed time **(TE-QN-ABE-PR-NYAN)**.

It is also worth noting that besides the efficacy scores indicated, some teacher educators pointed out that they would evaluate their performance in terms of planning through conducting formative and summative assessments. In concurrence, the principals reiterated that the teacher educators in their colleges were very effective in planning for CBTE implementation. They noted that they had been trained on curriculum interpretation and integration with a focus on the curriculum designs.

Teacher Educator: I am meeting expectations in the above listed aspects since the teacher trainee achieve above average in both formative and summative assessment **(TE-QN-EGO-P-MER)**.

Principal: Teachers' educators have very effective planning. Most of them have been trained on curriculum implementation, integration…and here is where you learn how to interpret the design and come up with the already available hours but you have to break, customise the learning outcomes, learn experience and come up with you know, an hourly lesson **(P-INT-GAL-P-KIL)**.

4.4.1.1 Issues of concern in Planning by Teacher Educators

With respect to the different aspects of curriculum designs that teacher educators need to carry out during planning for CBTE implementation, it became clear that they were having some challenges. Those that came out prominently touched on the lack of or inadequate resources such as text books to anchor the realisation of certain learning outcomes. Another one indicated the lack of sufficient time to cover the content and accomplish certain tasks. Specifically, it was noted that sourcing for relevant resources was not easy in some strands and sub-strands hence the need for retooling.

Teacher Educator: The time provided in the designs to address the learning outcomes is inadequate it has not factored in time taken by SBAs and projects. **(TE-QN-ISH-PR-EMB)**.

Teacher Educator: Development of core competencies, learning resources, values, KIQs, and records often may not be practically done in view of the time available for documentation, as much as 7 out of 7 lessons per day **(TE-QN-ERE-P-KAK)**.

Teacher Educator: Sourcing for relevant learning resources is tedious hence leads to delayed break down of the learning outcomes and developing appropriate learning outcome. Curriculum developers should provide teaching no teacher educators in accordance to current curriculum design. this will ensure that there will be uniformity in all institution **(TE-QN-WES-PR-WEP)**.

Teacher Educator: allocated time is not sufficient to cover the content. Sometimes sourcing for relevant resources is not easy in some strands and sub-strands. retooling highly recommended **(TE-QN-SHA-P-MSA)**.

There was another challenge that touched on pedagogical content knowledge (PCK) where some teacher educators expressed concern over doing both in the same lesson. They explained that due to these mergers, one of the components may not be given so much attention. Hence, they felt that pedagogy and content for each learning area could be separated in the curriculum designs so as to reduce the loading for what they would be teaching.

Teacher Educator: curriculum design have a lot to be done in class, learning experiences, PCIs, CSL, pedagogy. My view is that separate pedagogy and content for each learning area in the design of every learning area. It is quite involving to do both in a lesson **(TE-QN-CHE-P-WEP)**.

Teacher Educator: the designs are well developed and adequately give opportunity for mainstreaming and developing core competencies, values and PCIs. However, some designs (Integrated Science) do not adequately address the PCK across the SOLOs **(TE-QN-LUG-P-KAK)**.

Based on these issues of concern and others not elaborated, the teacher educators made suggestions on how to overcome them which basically pointed to gaps in training. The teacher educators largely expressed the need for training in interpretation of CBTE curriculum designs including time management, and ICT integration.

Teacher Educator: How to cover a given content within a given time frame which may seem too short for the content required to completed **(TE-QN-VIC-P-KSM)**.

Teacher Educator: ICT integration google forms that enables the tutor to set questions online and get feedback from learners. Also skills on how to add videos and pictures **(TE-QN-GAR-P-GAR)**.

Teacher Educator: I need further training in TPACK especially in enabling video or conducting online classes **(TE-QN-MIG-P-MIG)**.

Ultimately, the teacher educators pointed out that training in the stated areas put together with a review of the CBTE curriculum designs would enable them to plan better and prepare the teacher trainees.

4.4.2 Planning and Preparation for Microteaching

Microteaching entails the planning and delivery of a short lesson in a classroom within the college. This helps teacher trainees to practice their skills with a small group of teacher trainees before teaching a bigger group. Considering the critical role that micro teaching plays in the preparation of the teacher trainee, this study sought to establish how effective teacher educators were in planning for the same. Qualitative data from interviews showed that the teacher educators in respective colleges planned well for the practical work. They would organise for microteaching in their respective learning areas, and further plan for the practicum. The planning for practicum entailed offering guidance and briefings, team coordination and placement of teacher trainees in respective schools.

> **Principal**: the team coordinator is the one the plan that, he knows how many learners are there and we also tend to look where they are going to stay. Some of are from around so they stay at home and come to ask guidance and schools they are going to the field. **(P-INT-BUR-P-TAT)**.

> **Principal**: We have also ensured that, uh, these teachers participate in preparation of, trainees in Microteaching. So every teacher must ensure that in his learning area, you are able to prepare learners in preparation of the schemes and the lesson plan for them to implement. So when they go out, they already have the competency **(P-INT-WES-P-WES)**.

> **Principal**: we've got 67 DECTE sending them to some areas is a challenge, as some bounce and came back we relocate them **(P-INT-ISL-P-MSA)**.

These findings are in concurrence with the teacher trainees' feedback especially when they mentioned that the exercise had been done consistently in the college. They noted that they would be taught about different teaching methods and would be allowed to participate in group work where they would reflect such methods. Moreover, they indicated that they were confident that the microteaching was instrumental in creating exposure to actual practice in line with planning and preparation.

> **Trainee**: uuh teachers here have been preparing us on micro teaching. We are learning micro teaching itself as a learning area as a unit. So during that lesson we are taught the different methods of teaching and we are given a chance to work in groups and then present. So we get the experience of teaching **(TR-FGD-GAL-P-KIL)**.

Trainee the training is preparing us because we are being engaged to teach in nearby schools to do micro-teaching and interact with learners. Also the content we are learning is exposing us to the different areas on how to teach the young kids **(TR-FGD-MWI-PR-KIT)**

Trainee: The teachers have been teaching us through discussion or group work where we learner discuss and come to teach others in front of the class based on the specific objective. When doing micro teaching, our lecturers are always there to guide us and they correct us where we are wrong. We are given assignment in groups where we do and come to present in the class **(TR-FGD-SEM-P-KSM)**.

The results also revealed that microteaching and practicum was a means of generating feedback to help the trainees grow. Concisely, after completing their teaching in both phases the teacher trainees would write a reflection paper based on the feedback of their peers, teacher educators or even mentors. Such would enable the teacher educators to assess trainees' performance and suggest necessary corrections before letting them out again. They said:

Principal: we do practicum briefing, then we offer to the professional materials during classwork, they report to their schools, develop some documents they come back with them, and we assist them to rectify them and they go back for final documents. We sent practicum direct to talk to schools by briefing the school on who we will be sending **(P-INT-ISL-P-MSA)**.

Principal: …After they are from the we assist them to make he corrections and send them back for final do document. They don't go out of Mombasa. From KICD we would ask for guidance for the micro teaching **(P-INT-ISL-P-MSA)**.

4.4.2.1 Issues of Concern in Microteaching

In contrast, some trainees spoke about challenges they experience when it comes to planning for and engaging in micro-teaching. Factually, microteaching is to be carried out in the first term which lasts for ten weeks. Over the course of term one, the practical is allocated ten hours. In their view, this time is not adequate and leads to uncompleted work. They further raised concerns over the unstructured nature of the program which lacks clear guidelines on how to handle microteaching in each learning area. They said:

Trainee: they are effective. Micro-teaching for third years need to be structured so that we know what exactly we need to do. What college A is doing maybe not what college B is doing. Make it structured so that colleges can do something that is uniform **(TR-FGD-ASU-P-KIS)**.

Trainee: no clear guidelines how to handle micro teaching in each learning area on how a lesson is started and how it ends; there is a variation on how micro teaching is

handled in different colleges; have gained skills on how to teach; by year 2, it was easy to apply micro teaching; focus on skills to use in class, one would have wanted to have optional subjects instead of all, micro teaching is not done to expectation of trainees as is done for a short time of 10 minutes teacher educators **(TR-FGD-THO-P-KIA)**.

As such, they recommended that the microteaching be extended to the second term so that it contains a total of twenty hours to be covered in term one and ten hours in term two. They also suggested a structured program for microteaching where all colleges can take part in a uniform program.

4.4.3 Planning and Preparation for Practicum

The practicum is a crucial transition as the teacher trainee moves from the reduced complexity learning situation to a real and complex learning situation through this re-planning and re-teaching experience. The findings of this study showed that the teacher educators would guide the trainees well in the areas of planning. As such, they would direct the trainees to check that they have enough and varied resources that are age and learner appropriate. They also mentioned that the trainees should ensure they create learner-friendly classrooms where learners would be allowed to actively engage in the learning process as much as possible. They said:

Trainee: …you must have enough learning resources. And the learning resources vary to the age of the learners. They should be learners appropriate. Then when you are teaching, you must involve the learners. The lesson should be learner centred not teacher centred… **(TR-FGD-GAL-P-KIL)**.

Trainee: We just have hints on practicum for example you have to prepare learning materials according to the level of learners, the lesson should be engaging, and the lesson should be learner centred. In addition to that the hint is that we should be prepared in terms of the professional documents **(TR-FGD-KWA-P-KWA)**.

Trainee: we are not prepared that much, we are told to give learners time to take part in activities, we are also told to know about the use the digital devices we are also taught on how to handle people with special needs **(TR-FGD-REG-P-MAK)**.

Trainee: Prepare us early enough on content, skills and building of confidence, guide us on how to deliver content and manage class, we also observe them while teaching us **(TR-FGD-CHE-P-WEP)**.

4.4.3.1 Issues of Concern among Teacher Trainees during the Practicum

The findings showed that the main concern about the practicum was about its duration. Most of the trainees reported that the practicum was taking a very long time as it spread over two terms. However, they felt that this duration was unnecessary and that they were okay with

one term. going for two terms. As such they also pointed out that the DPTE did not have to go for nine terms citing that seven terms were adequate.

> **Trainee**: …Only that I could, ask that the period that we are staying here of three years is not. Uh, and it's a big, it's a way too long. Like we are going for a practicum of two terms when, uh, it should have been one term now that we have even have had a micro teaching of one term. So there is no need of nine terms for DPTE, it should just be seven times and we are through with it because, uh, we really feel that we should already be outside there assisting the learners who are waiting for the CBC trained **(TR-FGD-BAR-P-BAR)**.

> **Trainee**: Okay on the two terms teaching practicum, I think we have been having a lot of microteaching among our peers, so having two terms practicum is actually a lot. Because, being in certain school for two terms then we don't have to reside from our own school, we will be having some challenges in case of capital…So being there for two terms is not favouring the teacher trainees **(TR-FGD-INT-P-KAJ)**.

Furthermore, some trainees attempted to justify why they did not need to go for the practicum over two terms. They noted that one term was meant for mentorship and the other was for actual assessment. For this reason, they were of the opinion that one could take one term where mentorship would be done for approximately one month then the rest of the time could be used for actual teaching.

4.4.4 Preparation of Professional Documents

Professional documents are records that teachers need to assist them during the process of instruction. They are used to guide the direction which the teaching and learning process would take. These need to be prepared in advance as they enable the teacher to interact effectively with the learners. The professional documents that were covered in the study include: Schemes of Work (SoW), lesson plans, class registers, and records of work covered. However, the findings showed that the participants mainly talked about the SoW and the lesson plans.

4.4.4.1 Quality Assurance in Preparation of Professional Documents

In this study, findings revealed a number of issues including teacher educators' efficacy in preparing the professional documents, the issues of concern experienced, and their importance in preparing teacher trainees professionally. To this end, it is worth noting that the preparation of professional documents is very critical in the planning of CBTE implementation. The data showed that respective colleges had quality assurance mechanisms to check whether the teacher educators prepared the professional documents. They would

commonly direct teacher educators to prepare the documents which would be approved by the dean of curriculum (DOC). They said

> **Principal**: we prepare the professional documents, schemes of work, in the beginning of the term they must be signed with the dean of curriculum… we get feedback almost on weekly basis because after every week the records of what class what attended **(P-INT-KIT-P-KIT)**.
>
> **Principal**: …You see teachers are monitored that we, they think they, they create appraisal and in the process of getting that appraisal, there are certain requirements that are needed. One is lesson observation… and other preparation of documents…Yes. for teacher educators. So they actually know how to prepare the current, uh, professional documents targeting, the CBC learners… **(P-INT-KIB-P-KAK)**.
>
> **Principal**: We have made a follow up every day of the time have ensured that to ensure that teachers have updated their professional, uh, documents **(P-INT-WES-P-WES)**.

In line with the affirmation from principals that the teacher educators were keen to prepare the professional documents, observation data also revealed that teacher educators were effectively preparing SoWs that align to the curriculum designs (75.4%) and adhere to the required format (73%). However, they were average (57.6%) in presenting schemes of work that are updated.

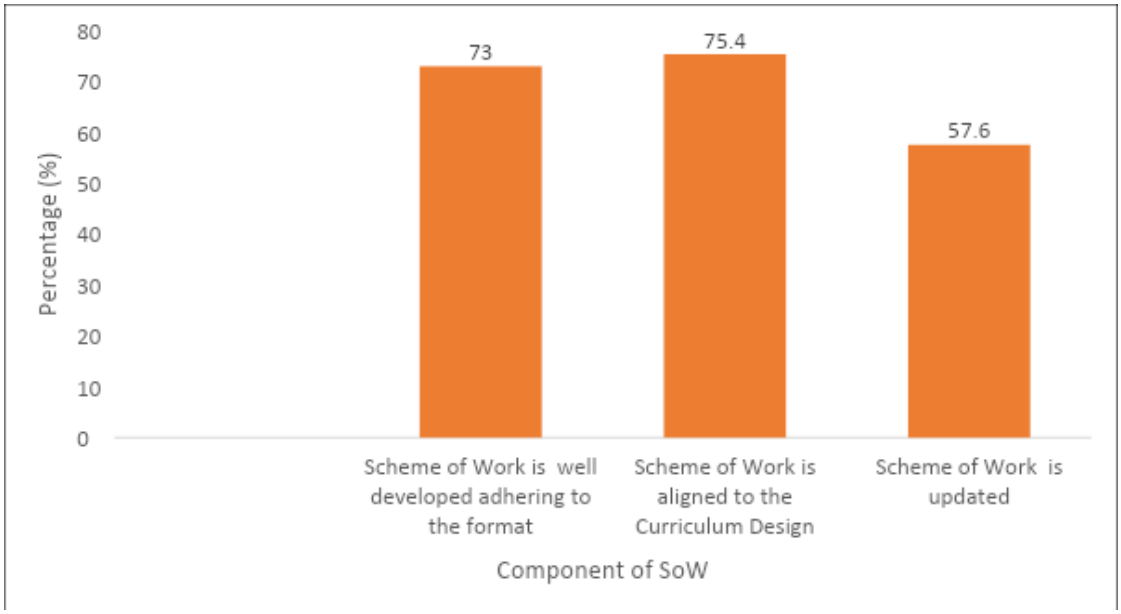


Figure 1 : Ratings on the development and use of Schemes of Work

Furthermore, observation was also done to check on a series of aspects pertaining to the development and use of lesson plans. The results are shown in **Table 11**.

Table 11:Development and Use of Lesson Plans

Aspect of Lesson Plan	(%)
Lesson plan is aligned to the Scheme of work	69.2
Lesson plan is well developed adhering to the format	58.4
Lesson steps have incorporated appropriated pedagogies	63.4
Lesson plan steps have mainstreamed competencies.	61.0
Lesson plan steps have mainstreamed values	67.6
Lesson plan steps have mainstreamed PCIs (where applicable)	63.4
Lesson plan steps have provided for appropriate resources	61.6

Generally, the teacher educators seem to be above average in the aspects of the lesson plans. It can be seen that the teacher educators were able to prepare lesson plans that were aligned to the schemes of work, which scored 69.2%. Following closely was the development of lesson plans that mainstreamed values 67.6%. Developing lesson plans with steps that provide for appropriate resources and mainstreaming competencies were rated at (61.6%) and (61%) respectively. The lowest score of 58.4% was assigned to teacher educators preparation of lesson plans that adhere to the format. As such, it would be correct to indicate that the teacher educators still need some capacity building in this area.

The principals underscored that the ability to prepare professional documents is one of the competencies that a trained teacher should possess. When asked to comment on the effectiveness of the mechanisms they use, some principals indicated that they would obtain reports from class representatives and teacher trainees. The DOC would also submit reports showing the status of teacher educators with respect to preparation of professional documents. Some HODs underscored that since the start of the CBTE curriculum, the teacher educators have shown a lot of commitment to the preparation of professional documents, especially the schemes of work and lesson plans. They also noted that teacher educators are currently assisting trainees to develop their own work plans.

4.4.4.2 Preparation of Professional Documents by Teacher Trainees

By extension, the data showed the college administrations insisted that the teacher trainees should also learn how to prepare the professional documents so that they implement the same way they get to actual practice. In the same token, the teacher trainees pointed out that

the teacher educators would stress on the preparation of professional documents which would be done during microteaching. They said:

> **Principal**: We have also ensured that, uh, these teachers participate in preparation of, trainees in microteaching. So every teacher must ensure that in his learning area, you are able to prepare learners in preparation of the schemes and the lesson plan for them to implement. So when they go out, they have already the competency **(P-INT-WES-P-WES)**.
>
> **Trainee**: we have undergone successful micro-teaching and as we prepare the document, our teachers correct us whenever we make mistakes as we prepare them. They have helped in the flow and the format of the documents. We have been guided on the steps of the preparation of the lesson plans **(TR-FGD-SHA-P-MSA)**.
>
> **Trainee**: after a certain period of time, the tutors give Us a chance to prepare lesson plan, schemes of work and we present the teaching of other trainees and they are there to give us feedback. They also assist as by correcting the weak areas **(TR-FGD-REG-P-MAK)**.

Feedback from the teacher trainees indicated that besides the guidance they got from their educators, the trainees would help each other to practically develop the records. This is indicative of the rigorous peer teaching that goes on in TTCs. Furthermore, the learners were implicitly encouraged to conduct research in cases where they would pick a strand from the curriculum design and proceed to come up with their own schemes of work, which would then be presented to the other peers during classroom presentations. Whereas some trainees would randomly make presentations based on their work class presentations, others confirmed that they would wait for the more structured microteaching sessions to make presentations. They said:

> **Trainee**: On the part of professional documents, one of it being the scheme of work the teachers have been giving us time to go into the group learning easily look for a strand then after that come up with our own scheme of work whereby during the normal class, one of us being the teacher trainees move in front of the class and he tries to demonstrate as if it is in a learning session in class. Yeah **(TR-FGD-GAL-P-KIL)**.
>
> **Trainee**: We have a strand in micro-teaching, we are taken through professional documents and in other subjects, we are told to prepare them to keep reminding us. We usually have a micro-teaching lesson in every strand, we develop the documents **(TR-FGD-KIL-P-KIA)**.
>
> **Trainee**: There is good exposure to developing schemes of work and lesson plans; not clear how to prepare learners progress records; should be guided on how to prepare class register if to mix boys and girls or separate; clarity needs to be sought whether to include PCI's in the lesson plan as some subject tutors have allowed while others do not allow, there should be a uniform direction **(TR-FGD-THO-P-KIA)**.

The results showed some issues of concern that the trainees faced in the preparation of professional documents. For instance, as captured in the quotations, it is clear that the teacher trainees displayed varied levels of ability on the preparation of some of the professional documents. Even so, the findings showed that they would either guide each other or suggest being helped in those areas they found to be challenging. Consequently, there was a concern over the unclear situation regarding the inclusion of PCIs in the lesson plan, and the teacher trainees suggested a need to make this uniform among all teacher educators and trainees. Moreover, there are others who spoke about the content of the documents, and specifically touched on the schemes of work. They pointed out that they experienced the challenge of unbounding the lesson specific outcomes (LSOs) so that they match the recommended number of lessons under each sub-strand in the curriculum design.

4.4.4.3 Issues of Concern among Teacher Educators in the Preparation of Professional Documents

Looking at the findings, it was noted that the preparation of professional documents was still a concern in some colleges. For instance, the principals observed that some of their teacher educators would treat the curriculum designs as the schemes of work hence avoiding the preparation of the actual document. Another issue involved teacher educators avoiding some areas dealing with ICT, and Individualised Education Program (IEP) due to lack of skills. Additionally, some teacher educators would only prepare professional documents e.g. lesson plans for some learning areas and avoid others. They reported:

> **Principal**: My observation is some tutors have taken designs to be schemes of work. They just open it. They don't believe planning is comprehensive. Also have observed that when my tutors are doing lesson plans they avoid areas where there is use of ICT gadgets. This is due to lack of skills. To prepare professional documents with IEP in mind is also a challenge **(P-INT-KEN-P-KIS)**.

> **Principal**: I have not seen any challenge but you find some tutors cannot prepare all the learning areas because they are many and the time allocated is not enough **(P-INT-MWI-PR-KIT)**.

While the interview data presented issues that were of concern to the teacher educators, the observation data was also found to be useful in corroborating the findings. For instance, in relation to the schemes of work, the results showed that the document in most of the colleges has all the components as per the required format. The teacher educators reported that they would prepare the SoW annually, and in some cases, a sample of the ones done by teacher

trainees was produced as evidence. This is indeed proof that teacher educators are guiding teacher training in the development of professional documents for planning purposes.

i. Schemes of Work

However, some issues arose concerning the preparation of the schemes of work. Considerably, teacher educators in some colleges did not provide the SoW completely. For this reason, the teacher educators reported that they had been assigned new roles in the college and hence lacked ample time to prepare the teaching documents. In some instances, the teacher educators were still relatively new in the respective colleges and had not settled enough to begin the preparations. It was also noted that in the majority of the schemes of work observed, the column indicating reflections had been left blank, and in few cases filled with inappropriate information.

> **Observer**: The teacher had no schemes of work. He used the course outline. For this reason, the aspects of scheme of work could not be verified **(OBS-LUK-PR-MAK)**.
>
> **Observer**: Teacher had just reported. was in the process of preparing a professional document **(OBS-NAB-PR-BUN)**.
>
> **Observer**: Teacher said they have had so much work and has had no time to prepare schemes of work **(OBS-EAS -PR-MAC)**.
>
> **Observer**: Scheme of Work Developed as a formality. The teacher educator does not have the current format for scheme of work **(OBS-RON-PR-NAK)**.

ii.Lesson Plan

In most of the colleges visited, observation data showed that the teacher educators were not able to present the lesson plans thus they were largely missing. In the few instances where they were available, results show that most of them were well aligned to the schemes of work and done according to the required format. However, some issues were noted touching on invariance between the strand in the design and the lesson plan, lack of such components as the extended activity, and use of inappropriate methodology.

> **Observer**: The components of the conclusion and extended activity were interchanged in the lesson plan **(OBS-MAH-P-TUR)**.
>
> **Observer**: Life approach methodology isn't clear because it has step 1, 2, conclusion and extended. This doesn't allow them to check what the Bible says, apply it to real life, extended activities. Extended activities should be before conclusions to give room for correction before conclusion. It's unlikely for teachers to go through all the assignments and correct them **(OBS-ERE-P-KAK)**.

iii.Lesson Notes

The findings showed that lesson notes were available in almost all of the colleges visited. In fact, there are instances where the schemes of work and lesson plans were missing but the lesson notes were available. The lesson notes were well prepared, updated and aligned to the strands of the learning area. Even so, it was noted that teacher educators mostly downloaded the lesson notes directly from the internet.

> **Observer**: The teacher had well prepared lesson notes which went hand in hand with the strand that he was facilitating. The notes were typed **(OBS-LUK-PR-MAK)**.

> **Observer**: lesson notes available and current and were used in class during the lesson **OBS-EAS -PR-MAC)**.

> **Observer**: Lesson notes were bits and pieces of downloaded content directly from the internet **(OBS-MAH-P-TUR)**.

From the foregoing, it is clear that the preparation of professional documents is critical in the implementation of the CBTE curriculum. These tools, especially, are very important for planning and use by trainees during microteaching and the practicum as well. It is worth noting that the trainees in most schools were able to work in groups and assist each other to prepare the documents. They were also able to appreciate the role of these documents by stating that the documents would help them to manage learners in the classrooms. Besides the challenges highlighted, it can be seen that most of the teacher educators are reportedly effective and competent in the preparation of these documents, hence effective in planning for CBTE implementation.

4.4.5 The Effectiveness of the Upgrade Program

As earlier indicated, CBTE implementation relies on the teacher educators' ability to plan for lesson delivery and in turn prepare teacher trainees to facilitate learning. For this reason, it is important that their capacity to deliver the CBTE curriculum is built. This movement was ingrained in the upgrade program (UP) that was rolled out in selected TTCs. The UP aimed at exposing teacher trainees to the general structure and methodologies of the Competency Based Curriculum. It offered teachers practical training on how to design competency based lesson plans, assessments and how to create a learner centred classroom environment. When asked to comment on the effectiveness of the UP, some principals indicated that the program was fairly effective as the trainees were already in practice. As such they would join the UP to sharpen their skills.

> **Principal**: I think it was fairly effective because the trainees we had were already teachers and practising teaching and they have taught CBC already. So them joining upgrade program they were. Just sharpening their skills **(P-INT-MIG-P-MIG)**.

On the contrary, the teacher educators reported that it did not adequately prepare the trainees because of work overloads and time constraints. They appeared to agree with the principals on the challenge of time constraints. They said:

> **Teacher Educator**: they are not adequately prepared because their workload is huge compared to the time of study. this greatly affects them since they cannot finish up the syllabus before they sit for their summative exams **(TE-QN-NAK-PR-NAK)**.

> **Teacher Educator**: The duration of the upgrade is shorter in comparison with the goal of the CBC programme, many upgrades are too rigid to adhere to CBC **(TE-QN-MWI-P-KIT)**.

> **Principal**: The only challenge we are having this program is time because this program normally should take 3 years but we have to condense it to 1year **(P-INT-MIG-P-MIG)**.

4.4.6 Upgrade Program Efficiency

The teacher educators were also asked to give suggestions on how the upgrade program could be improved. The findings showed that their main concern seemed to revolve around timelines as they felt that more time needed to be allocated to enable successful completion. This was directly linked to their view that the UP had some content that could not be covered within the stipulated time. While proposing strategies to improve the upgrade program, more emphasis was placed on reviewing the program, designing specific guidelines, engaging training based on teacher educators' specialisation, and increasing the duration of the program.

> **Teacher Educator**: Their syllabus should be reviewed so that it perfectly fits with the available time of study **(TE-QN-NAK-PR-NAK)**.

> **Teacher Educator:** The government should come up with specific curriculum guidelines for upgrade program. incorporate remote learning and learners to be trained on their areas of specialisation **TE-QN-RON-PR-NAK)**.

> **Teacher Educator:** The learning area coverage is large and time taken to cover is less hence learners contact time should be added and other learning areas more so the professional areas should be merged. **TE-QN-BUR-P-TAT)**.

> **Teacher Educator:** provide the realistic timeline for the accomplishment of the planned task, and seek to reduce the expenses for the upgrades **(TE-QN-PAU-PR-KIS)**.

Furthermore, the principals also shared their proposals for improving UP. They were consistent with the teacher educators on the aspect of increasing time but suggested specific measures for reviewing the program. For instance, they felt that what had been covered by

trainees during the P1 course did not have to be repeated during the UP. They also pointed out that the UP could be done during holidays to attract more teacher trainees.

> **Principal**: We need to remove some things in this program for example methodologies because they have already done that so doing it again in upgrade program is a repetition and wastage of time. They only need to know about learner-centred approach because they were used to teacher centred approach **(P-INT-MIG-P-MIG)**.

> **Principal:** I would prefer what trainees have covered in P1 and it is part of upgrade program to be shed off and we remain with areas only they didn't cover in P1 so that we can have more time to train them. Let us spend time on what is new **(P-INT-KEN-P-KIS)**.

> **Principal:** Yes. These teachers who are coming for upgrade are those who are employed. So we would recommend this program to be carried out during holidays to attract more teachers to join the upgrade program **(P-INT-GAR-P-GAR)**.

4.5 Appropriateness of the pedagogical strategies for implementation of CBTE

The use of appropriate pedagogical strategies in the learning process is the key driver through which the core competencies will be developed and applied by the learners. The Competency Based Education emphasises what learners are expected to do rather than mainly focusing on what they are expected to know. This justifies the need to use various learner centred approaches in teaching and learning that aid in the development of competencies in learners. The CBTE curriculum blends well with the 21st century methods of learning.

Competency Based Teacher Education curriculum assumes that everyone learns differently and understanding the different ways that humans learn is crucial to educational success. It is on this philosophical premise that training of teachers is designed and implemented in the teacher training institutions.

This study sought to establish the appropriateness of the pedagogies used in implementation of CBTE in the teacher training institutions. During the study, several respondents including principals, teacher educators, deans, registrars, heads of departments and teacher trainees were required to respond to items which revolved around the aspect of pedagogies used during implementation of CBTE curriculum. The generated data was analysed under four (4) thematic areas, namely; Pedagogies used in implementation of the CBTE curriculum, appropriateness of pedagogical approaches, effectiveness of curriculum delivery in CBTE and effectiveness of pedagogy in the upgrade programme.

4.5.1 Pedagogies used in delivery of CBTE Curriculum

Different respondents indicated the pedagogical approaches used in delivery of the CBTE curriculum. Teacher educators (tutors), principals, heads of departments, deans of studies and registrars reported that the teacher educators mostly use the 21st century methods of learning. The expected pedagogical approaches are project-based learning, problem-based learning, collaborative learning, cooperative learning, blended learning, experiential learning and inquiry-based learning. The teacher trainees cited pedagogies used by their educators. Some excerpts from teacher trainees are presented as follows:

> **Trainee:** … pedagogies that cater for all learners, practicals, discussions, projects, emphasis on collaborations among the tutors, ICT integration, the pedagogies are very effective **(TR-FGD-ABE-P-NYAN).**
>
> **Trainee:** Inquiry-based learning, ask questions, project-base-making models and farm produce, learning is learner-centred, Experiential, exposure to different experiences, given time to explore, not about them but us. **(TR-FGD-KAJ-P-NYE).**
>
> **Trainee:** Inquiry-based learning, key inquiry questions. They pose the questions. Collaborative learning; group learning. Projects-based. Projects like **(TR-FGD-KAG-P-NYE).**
>
> **Trainee:** They use experimental, project based, lecture, role play, experiential, and blended learning approaches **(TR-FGD-WES-PR-WEP).**
>
> **Trainee:** The pedagogical approaches used are good, adequate and effective. Project Based learning, Blended learning approaches used **(TR-FGD-KWA-P-KWA).**

The views of teacher trainees were collaborated with the responses of the principals. They responded to a question on the pedagogies teacher educators use to prepare trainees. They affirmed that most of the teacher educators use the learner centred learning approaches in teaching and learning process. The principals cited the use of group discussions, projects and use of technology for instance using laptops and smart phones to conduct research and deliver content.

> **Principal:** There is effort to use expected pedagogies as per design: groups discussion project b **(P-INT-BUN-P-VIH)**.
>
> **Principal:** Yes, the tutors are using the CBC pedagogies e.g. they give instructions to trainees & supervise: there is a lot of group discussions, presentations, project work. **(P-INT-KAI-DPT-P-VIH)**.
>
> **Principal:** Methodologies like blended learning, peer teaching, exploratory learning, collaborative learning, yes, they do, you find that in every strand, to be specific under the sub-strand where they are talking about the specific learning outcomes, there if you look at it keenly you will find that there is one that always require research, yes and through that you find that learners are doing a

lot of research when they are using internet devices. for your information here there's a strong wifi, there are three of them **(P-INT-PAU-PR-KSM).**

Principal: Learner - centred pedagogies; It is learners who do work; A lot of collaboration sharing and research; There is a lot of practical work **(P-INT-KAM-P-MIG)**.

The observations made by data generators also indicated that teacher educators used various learner centred pedagogies such as group discussions, demonstrations, presentations and projects during the learning process.

Observer: variety of teaching learning approaches used - group discussions and presentations, group work, reinforcement of key points **(OBS-KIL-P-KIA).**

Observer: Inquiry based learning approach used, trainees critique each groups presentation **(OBS-MAK-P-MAC).**

Observer: Varied pedagogies were used e.g demonstration **(OBS-RON-PR-NAK).**

However, it is worth noting that some tutors still use the lecture method which is not among the learner centred pedagogical approaches of 21st century learning. Some of the teacher trainees' responses are captured as follows.

Trainee: … Lecture method is still being used so as to cover the content in the curriculum design (**TR-FGD-LUK-PR-MAK).**

Trainee: The teacher educators mostly use the lecture method and group work **(TR-FGD-KIB-P-KAK).**

Trainee: …lecture method; involve learners in group discussions; peer teaching and role play **(TR-FGD-EAS-PR-MAC).**

Trainee: lecture method; group discussions; demonstrations where there are practicals; science trips e.g. in agriculture, visit to the farms; improvisation; ICT use; inquiry based research and presentations; peer teaching and assessment; projects **(TR-FGD-INT-PR-KAJ).**

The responses from principals corroborated with the views of teacher trainees and data generated from classroom observations. They pointed out that despite the fact that the majority of the teacher educators were using learner centred methods of learning, a good percentage are still using teacher-centred methods like the lecture method. The following are some of excerpts from the principal's responses which justify the use of learner centred pedagogies:

Principal: Research, Presentation; Self preparation; Lecture **(P-INT-BOR-P-KIS).**

Principal: Peer learning further research, group discussions and lectures **(P-INT-MAK-P-MAK).**

Principal: Majorly, we use lecture method and group discussions. We also use projects, giving assignments and research **(P-INT-INT-PR-MAC).**

Principal: We do not use the lecture method. We use group discussions, presentations, research and other inquiry-based learning approaches **(P-INT-THO-P-KIA).**

Observer: There was little evidence of varied pedagogies. The teacher used lecture method **(OB-BAR-P-BAR).**

4.5.2 Appropriateness of the pedagogies used in implementation of CBTE curriculum

Principals, deans, registrars, heads of departments and tutors were required to comment on the appropriateness of pedagogies used in implementation of the CBTE curriculum. Furthermore, the teacher trainees were required to comment on the pedagogical approaches used by their teacher educators. The generated data was analysed and presented according to the different categories of respondents.

a) Teacher educators' views pertaining to appropriateness of pedagogies used in implementation of CBTE.

Teacher educators handling DPTE, DECTE and DSTE teacher trainees lauded the appropriateness of pedagogies recommended for use in delivery of CBTE curriculum. They were in agreement the methods were suitable because the learning process had become meaningful, real and engaging. The learner-centred methods helped teacher trainees to remain active by taking up a central role in their learning. Teacher trainees were acquiring hands-on skills due to the use of practical activities. Further, the use of technology in learning has enhanced development of digital literacy competence in learners. The following are some excerpts from teacher educators.

Teacher Educator: Pedagogy is appropriate in that learners are given hands on skills, learning from their peers, they are given digital literacy skills, competency based knowledge, skills & attitudes are impacted **(TE-QN-BUN-P-VIH).**

Teacher Educator: pedagogies are well designed and improve learning and skill development **(TE-QN-KER-P-KER).**

Teacher Educator: The pedagogical skills used in the implementation of CBTE curriculum are appropriate and thus helps the tutor and teacher trainees to share their experiences and come to the conclusion on what is expected of them for the betterment of our society **(TE-QN-NAK-PR-NAK).**

Teacher Educator: The pedagogy adopted is quite appropriate. The learner is able to work on their own at times, hence sharpening their research and communication skills **(TE-QN-GAR-GAR).**

Teacher Educator: Pedagogical strategies within CBTE are quite appropriate because trainees are able to apply the knowledge skills and attitude in practical learning **(TE-QN-MOS-P-UAG).**

Teacher Educator: the strategies are relevant and appropriate and cater for the development of an all-round teacher who can use different learning styles **(TE-QN-PRE-PR-THA).**

Teacher Educator: Quite appropriate as they enhance the acquisition of the desired core competencies **(TE-QN-MAH-P-TUR).**

Interestingly, some tutors were not comfortable with the use of the learner-centred pedagogies proposed for use while implementing the CBTE curriculum. They cited a myriad of reasons which include; inadequate capacity to utilise the learner-centred methods, overcrowded classrooms, inadequate time, inadequate learning resources to inadequate technology-related skills required when delivering the CBTE curriculum. Further, some pedagogies used in teaching and learning do not favour special needs teacher trainees. Some tutors had this to say:

Teacher Educator: Strategies mentioned in the curriculum are okay but some cannot be fully practised due to the large-classes, lack of ICT facilities and uninterrupted internet access. Some of the facilities to be visited (Inclusive edu) are far away. Time doesn't allow **(TE-QN-BUN-P-VIH).**

Teacher Educator: With a large population some pedagogical strategies can't work. One tutor handling a population of 300 students alone in a learning area **(TE-QN-SEM-P- KSM).**

Teacher Educator: Pedagogical aspect is appropriate but no textbooks to implement the content **(TE-QN-KER-KER).**

Teacher Educator: Pedagogical strategies in art quite effective... **(TE-QN-KER-KER).**

Teacher Educator: The pedagogical strategies are transformative and require a lot from the teacher in terms of preparation. Empower the tutor/lecturer please **(TE-QN-NAR-NAR).**

Teacher Educator: The pedagogical strategies used in the implementation can only be used effectively when the teacher is adequately trained in all the areas of teaching **(TE-QN-MAN-MAN).**

Teacher Educator: Needs to be made more and more student centred by incorporating more and more personalised technological advancements **(TE-QN-GAL-KIL).**

Some teacher educators reported that due to the large number of students in classrooms, transformative instructional methods are not applied hence there is limited development of competences among teacher trainees. Consequently, too much content makes teacher educators to use teacher centred methods such as lecture methods with the aim of covering the content.

Teacher Educator: The pedagogical strategies are good but with the current crowded classes. The peer, group works are a challenge **(TE-QN-GAR-GAR).**

Teacher Educator: Pedagogical strategies are appropriate. However, some are time limiting because they are quite engaging **(TE-QN-PAU-BUN).**

Teacher Educator: The pedagogical strategies used are effective though limited and some are not realistic within the scope of the learning area **(TE-QN-INT-KAJ).**

Further, teacher educators opined that despite the appropriateness of pedagogies, the teaching and learning resources were not adequate. Therefore, lack of resources limited proper use of the pedagogies for effective implementation of the curriculum.

Teacher Educator: The pedagogies are appropriate but time and resources might be the only hindrance **(TE-QN-LUG-KAK).**

Teacher Educator: They are appropriate but some are not realistic - The use of digital devices in the entire strand - Reproduction in plants **(TE-QN-MOS-UAG).**

Teacher Educator: Appropriate but requires resources for the implementation of practical lessons **(TE-QN-TAM-ELM).**

Teacher Educator: The pedagogical approaches are student centred and relevant, however research based learning has become expensive and requires more time **(TE-QN-MIG-MIG).**

Teacher Educator: teachers need specialists in different learning areas to make learning authentic and bring different pedagogical strategies in teaching **(TE-QN-MIG-MIG).**

Teacher Educator: The pedagogical approaches are in line with the expectation however, partly variation may occur due to adequacy in training of refreshing to maintain the effectiveness **(TE-QN-MIG-MIG).**

Teacher Educator: The learner centred approach is quite appropriate though it requires more time due to groups work discussion and presentation **(TE-QN-KEN-KIS).**

Furthermore, some tutors felt that the learner-centred approaches of learning are not the best to use during preparation of teachers. Some tutors had this to say:

Teacher Educator: Some approaches being used in teaching and learning processes are not appropriate **(TE-QN-MWI-KIT).**

Teacher Educator: The element of modern technology to be incorporated in the training and practicum is unrealistic in that the electronic devices expected to be used by both the teacher and parents at home are a challenge **(TE-QN-ISL-MSA).**

b) Principals' views pertaining to appropriateness of pedagogies used in implementation of CBTE Curriculum

Principals were required to comment about the appropriateness of the pedagogies used during implementation of the CBTE curriculum. Some of the principals affirmed the appropriateness while others were no in support of the proposed pedagogies. Those who supported the suitability of the pedagogies indicated that the pedagogical approaches were

effective and interesting to the teacher trainees. They also asserted that the pedagogies are assisting the teacher trainees in acquiring the required competencies efficiently and effectively. The following are some excerpts from the principals:

> **Principal:** There is effort to use expected pedagogies as per design: groups discussion project (**P-INT-KAI-P-VIH).**
>
> **Principal:** The methodologies are helpful: this learning experiences they are well prepared (**P-INT-UGE-P-SIA).**
>
> **Principal:** The above approach enables learners to have the core competences required in learning (**P-INT-NYA-P-KIS).**

At the same time, some principals expressed different views pertaining to the appropriateness of the proposed pedagogies for implementing the CBTE curriculum. They majorly indicated that implementation of the CBTE curriculum requires provision of the required resources. These resources are basically curriculum support materials and internet connectivity. This is what some principals had to say:

> **Principal:** The learner needs to be supported in terms of reference material and internet (**P-INT-KAM-P-MIG).**
>
> **Principal:** Can be used well if the internet would be available (**P-INT-BOR-P-KIS).**

c) Deans', Heads of Departments' and Registrars' views pertaining to appropriateness of pedagogies used in implementation of CBTE Curriculum

Deans of curriculum, registrars and heads of departments were also required to give comments on the appropriateness of the pedagogies used to implement the CBTE curriculum. In general, they supported the appropriateness of pedagogies within the CBTE curriculum. These comments meant that CBTE approaches relevant to the changes in the society. The teacher educators prepare lesson plans with ease and enhance acquisition of skills of preparing learning resources by the teacher trainees among other benefits. Some excerpts in support of the pedagogical appropriateness.

> **Dean of Curriculum:** Very appropriate especially having been trained. We know the methods and how to vary. We have a whole room where students have stored the items they have made using the different pedagogies to learning **(DRH-INT-JOH-P-KIA).**
>
> **Dean of Curriculum:** CBTE recommended methods are appropriate and relevant to the 21st century. Trainees are more involved in lesson preparation than before. However, ICT integration is a challenge to some of my colleagues **(DRH-INT-PAU-P-BUN).**
>
> **Dean of Curriculum:** CBTE pedagogical approaches are suitable and relevant to the changes in society. They made preparation for lesson easier as the trainees get involved in

their learning. In fact, discipline issues with current group is lower because they are engaged most of their time. Upgrade students who are mature are idle compared to CBC teacher trainees who are younger. Most teacher educators say that in any given case, you realise that when the learners take charge of learning and they're more involved, then you find that you have an opportunity to relax. And at the same time, issues of I discipline are lessened because they have things that are pushing them to ensure that they learn. What teacher trainees are doing here is what we encourage them to put in practice when they go for practicum. So, in most cases, we used group discussions and presentations, projects, demonstrations, role plays, debates and digital devices especially smartphones **(DRH-INT-MOI-P-BAR).**

Dean of Curriculum: Methodologies are appropriate? Yes. Because the techniques that are currently required for the modern world. Especially with the use of the technology **(DRH-INT-NAB-PR-BUN).**

Dean of Curriculum: According to my own submissions, that is the best methods, we come compare with the previous methods. It has more engaging learner's activities. So, it is the best because out it will be efficient understand, uh, the content and, and be able to design the information to the house **(DRH-INT-WES-PR-WEP).**

On the contrary, some deans of curriculum, heads of departments and registrars were of a different opinion. Some indicated that the proposed methods do not favour students with disabilities while others pointed out that some tutors are not able to integrate ICT as specified by the designs. The issue of overcrowded classrooms was also highlighted as a factor that hampers the usage of the proposed pedagogical methods. The following are some excerpts from the respondents.

Dean of Curriculum: The students do much of research. However, the students with disability who are HI and VI sometimes the methods do not favour them so we use the general teaching methods. We don't use IEPs which are for specific disability **(DRH-INT-MAC-P-MAC).**

Dean of Curriculum: Not able to integrate ICT as specified by the designs **(DRH-INT-EGO-P-MER).**

Dean of Curriculum: It is okay. Currently, not possible for one to use the pedagogical strategies cause of enrolment-large numbers **(DRH-INT-MUR-P-MUR).**

d) Teacher trainees' views pertaining to appropriateness of pedagogies used in implementation of CBTE Curriculum

Most trainees indicated that they liked the pedagogies used by the teacher educators. Some trainees had this to say:

Trainee: Online classes, research and present. Practicals, making charts, use of demonstrations e.g., in folk songs. The approaches are effective **(TR-FGD-PAU-P-KSM).**

Trainee: Appropriate but not lecture as it does not involve all learners **(TR-FGD-KAM-PR-MIG).**

Trainee: Online projects of help that when a teacher is not available everyone can assess **(TR-FGD-NYA-PR-HOM).**

Trainee: discussion groups effective as we are doing research by ourselves and exchange ideas; IBE **(TR-FGD-KEN-P-KIS).**

Trainee: It is learner/trainee centred through trainee searching for information when carrying out assignment, experiential e.g., in physical and health education we are taught content in class and we practice the same in the field, collaborative learning during group work, project based and blended learning **(TR-FGD-CHE-P-WEP).**

Trainee: Project based in agriculture makes us to be creative, participatory learning which is learner centred and makes all learners participate eg in English, modelling in science where models of breathing and circulatory systems are made, use of concrete block-realia in mathematics **(TR-FGD-BAR-P-BAR).**

Trainee: They mostly use projects in learning areas like Agriculture, practical work also used and it is very effective. Inquiry-based learning also used in subjects like performing Arts and Music **(TR-FGD-SHA-P-MSA).**

4.5.3 Effectiveness of content delivery in CBTE

The study sought information from teacher educators on the effectiveness of content delivery strategies in preparing teachers for professional practice. The findings are presented as follows.

i. Active learning experiences that promote development of core competencies and nurturing of values.

The pedagogical strategies used help teacher trainees to develop the core competencies as a result of the active learning experiences which will be passed down to learners. In DECTE, the involvement of teacher trainees in practical activities enables them to apply the skills and knowledge acquired in a different learning area. Teacher educators indicated that teacher trainees carry out practical activities and involve the trainee in carrying out various practical work. The practical experiences engage teacher trainees enhancing development of relevant competencies.

Teacher Educator: It gives teacher trainees a practical experience on the application of knowledge gotten from different learning areas **(TE-QN-ELG-PR-UAG).**

Teacher Education: The curriculum enable the teacher trainees to acquire adequate knowledge, skills attitude and values to be applied in the professional practice. It

involves practical work which is important for development of relevant skills **(TE-QN-MIT-PR-MAC).**

Teacher Educator: It's more practical and engages the trainee accordingly **(TE-QN-ELG-PR-UAG).**

Teacher Educator: CBTE curriculum ensures the teacher trainees are active and at the centre of general knowledge and acquisition of various skills and values **(TE-QN-BUR-P-TAT).**

Observations made during the learning process also corroborated with the findings that in some colleges, teacher educators engaged trainees by using inquiry based learning and discussion techniques.

Observer: The teacher educator engaged the trainees throughout the lesson. He allowed them to ask questions, discuss issues making reference to their experiences **(OBS-REG-PR-MAK).**

The active learning in DPTE programme promotes collaboration among teacher trainees. Further, the findings indicate that the DPTE programme is hands-on and teacher trainees are involved in carrying out activities that help them acquire competencies and nurture values required in teaching the 21st century learner.

Teacher Educator: It promotes collaboration and active learning among the learners and teachers **(TE-QN-WES-PR-WEP).**

Teacher Educator: CBTE is an effective curriculum in preparing teachers for their professional practice because it is an hands on curriculum or activity based **(TE-QN-KIT-P-KIT).**

Teacher Educator: CBTE curriculum is effective in preparing teachers for the profession in that it gives core-competencies, values, skills and knowledge for use & digital literacy and therefore they come out fully prepared as 21st century teachers **(TE-QN-BUN-P-VIH).**

Teacher Educator: CBTE curriculum prepares the teachers well in the profession since it makes them to adopt many strategies so that each learner is catered for …helps the teacher in dealing with real life situations **(TE-QN-BUR-P-TAT).**

Similar to DSTE, the active learning experiences promote development of core competencies among teacher trainees. Some of the active learning experiences mentioned by teacher educators include carrying out experiments and practical activities, role plays among teacher trainees.

Teacher Educator: CBTE curriculum is effective on most areas since it promotes collaborative and active learning outcomes and the learning experiences, promote acquisition of core competencies but other areas need improvements **(TE-QN-EAS-PR-MAC).**

ii. Development of digital literacy skills

The CBTE curriculum is appropriate and effective as it helps teachers to develop digital literacy competence due to the use of technology in learning. The findings indicated that teacher trainees use technological devices such as laptops, smartphones to search for information from the internet which not only aid in development of digital literacy competence but also research skills among trainees. This was pointed out by some teacher educators in the DECTE programme who explained that the curriculum is effective since it helps teacher trainees to develop digital literacy skills due to the use of technology in learning.

> **Teacher Educator:** In my view, CBTE curriculum is best for teacher since we are dealing with learners who are digital. In their environments they use technologies to perform tasks. Introduction of CBTE will make their learning effective **(TE-QN-ELG-PR-UAG).**

> **Teacher Educator:** It prepares teacher trainees to develop research skills because the designs give them the expected content to be covered and the teacher trainees are expected to do research to get the subject matter **(TE-QN-MAH-P-TUR).**

Significantly, the CBTE curriculum for DPTE provides teacher trainees an opportunity to carry out research using the internet for meaningful learning. Similar to observations made, technology was used during the learning process as trainees used phones to do research.

> **Teacher Educator**: The CBTE curriculum provides teachers with a variety of concepts to research on thus supporting the learning objectives of teacher trainees **(TE-QN-KER-P-KER).**

> **Observer**: The lesson was delivered using a projector. Students also used phones during the lesson **(OBS-KAG-P-NYE)**.

iii. Trainees involvement in inquiry based learning

Inquiry-based learning is a student-centred teaching method that encourages students to ask questions and investigate real-world problems. Teacher trainees are actively engaged in the learning process and are given the opportunity to explore. This was explained by teacher educators who added that the curriculum engages teacher trainees in classroom and outdoor activities such as Community Service Learning and making real-world connections through exploration. This would help teacher trainees to relate learning with the real world experiences thus building their confidence in actual teaching.

> **Teacher Educator:** The learning experiences implemented in and out of the classroom effectively prepare the trainees for their professional practice. Our current year 2 class are more confident and competent in comparison to the earlier groups **(TE-QN-KIB-P-BUN).**

However, some teacher educators indicated that the pedagogies used to deliver the CBTE curriculum were not effective in preparing the teacher trainee for professional practice. Among the reasons indicated are presented as follows.

i. Inadequate time allocation to use meaningful pedagogies

Some teacher educators expressed that the time allocated to use research, practical experiences, field excursions, presentations and micro-teaching pedagogies for learning was not adequate. They added that the learning areas were too many and this resulted in some content not being covered fully. Time allocation for practical and presentations was limited thus limiting teacher trainees development of requisite skills and competences needed for actual teaching. Also lack of adequate time for micro-teaching denied teacher trainees an opportunity to learn from other trainees and improve their competencies in teaching.

> **Teacher Educator**: Time allocated is not enough; too many learning areas for trainees to effectively research and to the presentations… **(TE-QN-BUN-P-VIH).**
>
> **Teacher Educator:** To a large extent it does only that the time given to cover work in each sub-strands (in most cases) is not sufficient to allow the trainees to engage in a micro- lesson for peer review. This would be a good approach to use to make trainees better equipped skill-wise, pedagogy-wise and very appreciative of the content learnt… **(TE-QN-BUN-P-VIH).**
>
> **Teacher Educator:** It is not adequate. The base for a teacher has in micro teaching and facilitation of professional areas which has very limited time and facilitators mostly are shy from embarking on these areas probably due to inadequacy of the competence skill to facilitate…**(TE-QN-KIL-P-KIA).**
>
> **Teacher Educator:** The one of Health Education requires the trainee to visit TIVETS, primary schools, Health centers time and again yet the programme cannot allow. This can negatively interfere with other learning areas. The administration is not willing to buy materials for practicals let alone the time required for the same being inappropriate **(TE-QN-ERE-P-KAK).**

ii. Lack of inclusivity in learning (SNE and Cultural inclusion)

Further, the findings revealed that the CBTE curriculum does not favour trainees with special needs. Teacher educators explained that some of the pedagogies used in learning do not favour special needs trainees. For instance, the use of practical, some teacher trainees do not engage in the activities due to the nature of their disability. This is because there are no adapted curriculum designs particularly for trainees with HI and VI.

> **Teacher Educator:** Inclusivity of IEP learners is challenging **(TE-QN-UGE-P-SIA).**

Additionally, some learning experiences used do not favour teacher trainees in some regions due to cultural values. For instance, Muslim female teacher trainees experience challenges in performing certain activities during PHE lessons.

> **Teacher Educators**: Some learning experiences do not favour some localities like those which practice Islam cultural values. In their areas, female learners have challenges performing some practiced activities during PE lessons **(TE-QN-GAR-P-GAR**).

iii. Use of teacher centred methodology

Observations made by data generators on pedagogies used to deliver the CBTE curriculum, lecture method dominated the learning process. The pedagogies used did not encourage active engagement of teacher trainees in the learning process.

> **Observer:** The pedagogies used did not encourage active participation in class **(OBS-WES-PR-WEP).**
>
> **Observer:** The teacher used much of lecture method **(OBS-BAR-P-BAR).**
>
> **Observer:** The teacher mainly used lecture method. He gave most of the points related to the content without actively engaging the trainees to give their views yet the strand on Social media is very familiar to trainees **(OBS-LUK-PR-MAK).**

4.5.4 Effectiveness of content delivery in upgrade programme

The study sought information from teacher educators on whether the content delivery in the upgrade programme adequately prepares teacher trainees to implement CBC. The results show that 50.9% of the teacher educators indicated that the upgrade programme content delivery adequately prepares teachers to implement CBC while 41.1% indicated the content pedagogy in the programme does not adequately prepare teachers to implement CBC.

Teacher educators were required to give reasons on why the content delivery in the upgrade programmes adequately prepare teachers to implement CBC. The responses are presented as follows.

i. New pedagogies and approaches to implement CBC

Majority of the teacher educators who indicated that the upgrade program adequately prepares teachers to implement CBC noted that the program equips teachers with new pedagogies to implement the competency based curriculum. Teachers engage in learner centred approaches which are required to help learners acquire knowledge, develop

competencies and nurture values. The program makes the teachers utilize technology in learning, a requirement in CBC where teachers are expected to integrate technology in the teaching and learning process.

> **Teacher Educator**: Upgrade program adequately prepares teachers since they are equiped with new ideas, pedagogies in implementing the CBC **(TE-QN-JOS-PR-VIH).**
>
> **Teacher Educator**: Trainees are able to integrate ICT in learning. The trainees are capable of developing the varied instruction methods **(TE-QN-MWI-PR-KIT).**

Consequently, pedagogies such as blended learning and use of ICT to carry out research enable teachers to acquire digital literacy skills which can also be transferred to actual teaching where teachers are able to integrate technology in teaching and learning.

> **Teacher Educator**: Learners/ teacher trainees are exposed to new teaching learning approaches such as blended learning, inquiry based approach, the teaching content is broken down to facilitate core competencies, PCIs Values, skills, knowledge, values and attitudes among others **(TE-QN-VIC-PR-VIH).**
>
> **Teacher Educator:** It exposes them to ICT use in teaching which is appropriate in learning today. It gives/equips them with CBC pedagogical approach **(TE-QN-KIL-P-KIA).**

The various strategies for teaching and learning used in the upgrade programme equips teachers with knowledge and skills to use different methods hence they can handle different levels in primary education and junior school. Teachers were able to apply the competencies gained during practicum

> **Teacher Educator:** It ensures that teacher trainees at this level who are upgrading are equipped with skills and have knowledge on the pedagogical strategies that are appropriate in a CBC classroom **(TE-QN-BUR-P-TAR).**
>
> **Teacher Educator:** upgrade enhances methodological aspect which are essential for implementation. It takes them to the third year of teacher education. They can handle grade 1-8 **(TE-QN-CHE-P-WEP).**
>
> **Teacher Educator:** Yes, because the trainees were able to apply the competencies acquired during practicum **(TE-QN-MOS-P-UAG**).

ii. Development of hands-on skills

Further, teacher educators explained that the practical activities used in learning engage teachers to acquire hands-on skills that help them to carry out various practical activities in the implementation of CBC. Teachers acquire skills on how to design a competency based lesson plan, use learner centred pedagogies and various competency based assessment

methods to measure achievement of learning outcomes. This would then make learners develop various core competencies as they go through the curriculum.

> **Teacher Educator**: Embracing practical approach and the transformative approaches prepares them. However, the period is quite short **(TE-QN-SEM-P-KSM).**
>
> **Teacher Educator:** Because the programme is learner-centred. CBC is a hands-on/ practical curriculum where the curriculum is activity based **(TE-QN-KIT-P-KIT).**
>
> **Teacher Educator:** It offers teachers practical training on how to design competency based lesson plans, assessments and how to create a learner centred classroom environment **(TE-QN-REG-PR-MAK).**

Teaching and learning approaches in the upgrade programmes are exploratory where teachers learn by exploring the environments, reality, and make learning real. Teachers use real life situations, real objects and use locally available resources to acquire meaningful experiences.

> **Teacher Educator:** It makes the learning real, they also acquire CBC approaches and strategies that can be applied in filed **(TE-QN-EAS-PR-MAC).**
>
> **Teacher Educator:** ...They can improvise materials for facilitating learning using available materials **(TE-QN-BAR-P-BAR).**

iii. Development of 21st century skills

The findings also reveal that the upgrade programs help teachers develop 21st century skills and competencies. This is because of the various pedagogies used in learning. Teachers are able to pass down the skills and knowledge acquired to effectively help learners develop the core competencies in CBC.

> **Teacher Educator**: The trainers are equipped with enough knowledge and skills to handle the CBC class **(TE-QN-KAI-P-VIH).**
>
> **Teacher Educator:** They were equipped with 21stc skills, appropriate pedagogical approaches and competency based assessment **(TE-QN-UGE-P-SIA).**

iv. New approaches of lesson organisation and presentation

Another notable finding from the teacher educators is that the upgrade programmes help teachers to learn new ways of organising and presenting the lesson in and out of classroom. Teachers are taught on how to develop learning experiences that involve knowledge, skills and attitude.

Teacher Educator: The upgrade teachers are taught new ways of developing learning outcomes that include knowledge skill and attitude. Some new games has been introduced that requires them to be up to date **(TE-QN-NAB-PR-BUN).**

Consequently, a significant percentage of teacher educators indicated that the content delivery in the upgrade program does not adequately prepare teachers to effectively implement CBC. Among the reasons pointed out in relation to content delivery are presented as follows.

i. Inadequate time to effectively cover the content using meaningful strategies for learning

The upgrade programmes do not effectively cover the content due to time limitation. Teacher educators cited that the content is too much to cover within the specified period of time. The learner centred activities are not fully covered due to limited time, therefore teacher educators use teacher centred strategies of teaching and learning to cover the content within the specified time. This leads teachers not to develop the requisite competencies required to effectively implement CBC.

Teacher Educator: One-year period is inadequate… **(TE-QN-SEM-P-KSM).**

Teacher Educator: large content is delivered within a very short time which does not allow trainees to do practical work to boost on CBC skills **(TE-QN-KEW-PR-KER).**

Teacher Educator: The time available to finish content is very limited hence much of practicals and learner centred experiences are forced to be teacher centred **(TE-QN-BUR-P-TAR).**

ii. Congestion of the programme

Teacher educators further opined that the program is congested and does not allow teachers to take on the experiences developed. This therefore leads to the use of pedagogies that would enhance completion of the content than development of competencies in trainees.

Teacher Educator: Very congested programme did not allow the upgrade student to internalize the pedagogies **(TE-QN-KIT-P-KIT).**

4.5.5.2 Suggestions on how to improve content delivery in upgrade programme

Teacher educators were required to give suggestions on how to improve the upgrade programme.

The findings are presented as follows.

i. The focus on practice than theory

The respondents proposed that the upgrade programme should focus on practice rather than theory adding that the pedagogical strategies should be learner centred. This would develop teachers' competence for effective implementation of CBC.

> **Teacher Educator:** The content to be more practical rather than theoretical **(TE-QN-KEW-PR-KER).**

> **Teacher Educator:** More focus should be put on developing CBC skills and pedagogies in trainees **(TE-QN-KWE-PR-KER).**

ii. Online training

Teacher educators suggested that the upgrade programmes should be made online and only visit the colleges to carry out practical activities.

> **Teacher Educator:** Virtual learning with a little visit to the institution for practicals that should take a little more time to avoid the strains they have experienced (**TE-QN-KER-P-KER).**

4.6 Relevance of the resources used for implementation of CBTE

The successful implementation of Competency-Based Teacher Education (CBTE) in Teacher Training Colleges (TTCs) relies heavily on the availability and adequacy of relevant learning resources. This relevance is crucial not only for aligning the curriculum with contemporary educational needs but also for fostering an interactive and engaging learning environment. Such an environment empowers teacher educators and trainees with the practical knowledge, skills and attitudes required for effective practice in the teaching profession. This study sought to establish the available resources in TTCs, their adequacy and relevance in the implementation of CBTE curriculum.

4.6.1 Available resources for the implementation of CBTE curriculum

The respondents were asked to indicate the available resources used in the implementation of CBTE curriculum. They indicated different resources that were used by the teacher educators as well as those used by teacher trainees.

(i) Curriculum designs

The principals, teacher educators and Heads of Departments said that the curriculum designs for the different subjects offered under the regular programme were available. Comparatively, the curriculum designs were more available than the course books for implementing the designs.

> **Principal**: Designs for all subjects are available **(P-INT-UGE-P-SIA).**

Principal: We are using curriculum designs but we don't have textbooks. KICD should publish books to support the curriculum design since information and materials on learning areas are scanty or not available **(P-INT-KEW-PR-KER).**

Teacher Educator: Design is there but the books for use are not there **(TE-QN-BON- P-SIA).**

A principal said that they are able to access the online curriculum designs for pre-primary and primary levels. Teacher educators used these designs for reference while the teacher trainees used them in preparation for micro teaching and practicum. The teachers trainees were also able to access the designs from the schools where they did their practicum.

Principal: … we also seek for curriculum design on the online form for us to get them.. the trainees get designs from the school they are going to, also from the online **(P-INT-ISL-P-MSA).**

On the other hand, there are respondents who said curriculum designs were not available in their college. A Dean of Curriculum said they had to borrow the design for the implementation of the CBTE.

Dean of Curriculum: We also borrow curriculum designs **(DOC-INT-EAS-PR-MAC).**

The Principals, Heads of Departments, Deans of Curriculum as well as teachers in both public and private colleges observed that there were no specific curriculum designs in place for implementation of the upgrade programme. Instead, they were utilising the 3-year DECTE and DPTE curriculum designs for use in implementation of the upgrade programs. They called for a specific curriculum design for UDECTE which is separate from that of DECTE.

Principal: We don't have upgrade designs. What we have is for pre-service. If designs for upgrade are prepared it can be very useful **(P-INT-KEN-P-KIS).**

Principal: We have trained 2 groups of these upgraders without a curriculum design **(P-INT-BON-P-SIA).**

Principal: We have no design for the upgrade. We are using the design for a 3 years course **(P-INT-SHA-P-MSA).**

Principal: Currently we don't have a design for upgrade. We are using DECTE and DPTE, we should have a specific design for upgrade **(P-INT-NAK-PR-NAK).**

Teacher Educator: The upgrade programme has no special curriculum designs. They use the DPTE designs which are meant to be covered in two or three years **(TE-QN-GAL-P-KIL)**

Trainee: Tutors use DPTE curriculum design to facilitate learning... **(TR-FGD-KAN-P-KIS).**

Principal: I would say that the KICD may, if possible, work on a specific curriculum for UDECTE and a specific curriculum for the DECTE **(P-INT-SPV-PR-KSM).**

A respondent also observed that some of the content that is supposed to be in DECTE curriculum design for some subjects is found in DPTE curriculum designs. The teacher educators handling DECTE are made to make reference to the DPTE design.

> **Dean of Curriculum:** initially we had heard DECTE is from PP1 to Grade 3 early years. Then along the way they changed course. You see some few things remained in the design asking us to refer to Grade 1 design, Grade 2, design Grade 3 in DECTE. **(DOC-INT-SHA-P-MSA).**

(ii) Course books and other print reference materials

Principals, Teacher educators, Heads of Departments, Registrars and Deans of Curriculum from public and private colleges reported that they had available coursebooks that are developed for the DTE program. They used these as reference materials since there are no approved TTC course materials in line with the CBTE curriculum in both upgrade and regular programmes.

> **Principal**: We are still using our old knowledge to get learning materials to get notes so that we can be able to implement the curriculum (**P-INT-ETT-P-UAG).**
>
> **Principal**: I think KICD needs to collaborate with us to develop these learning materials. For now sometimes we rely on PTE textbooks which may not have relevant current information **(P-INT-MIG-PR-VIH).**
>
> **Principal**: Some of the books were for the previous system but they are still used **(P-INT-MIG-P-MIG).**
>
> **Principal**: We use some textbooks … the new books are still very few on CBC but once we begin having them then we will actually buy them… **(P-INT-MIG-P-MIG).**
>
> **Dean of Curriculum:** The textbooks we use are the old ones **(DOC-INT-JOS-PR-MAC).**
>
> **Dean of Curriculum:** We tend to rely on the old books for reference and online sources. Because they are not there **(DOC-INT-KWA-P-KWA)**.
>
> **Teacher Educator**: There are no textbooks or resources authorised and fit for us in the CBTE curriculum implementation availed **(TE-QN-MAD-PR-UAG).**
>
> **Dean of Curriculum:** We have primary school textbooks and rely heavily on the internet since there are no reference materials **(DOC-INT-THO-P-KIA)**.

Their sentiments were confirmed by the teacher trainees who also indicated that there were available textbooks in their colleges. However, the books were for the previous curriculum.

> **Trainee:** … we have some textbooks where the learners are in a position now to get more information or clarification if they have not understood a certain content in any learning area I mean. Yeah, that's all **(TR-FGD-GAL-P-KIL).**

Trainee: Tutors ... they also use PTE course books for references **(TR-FGD-KAN-P-KIS).**

Trainee: We have very few textbooks like CRE we use information from old textbooks **(NAR-FGD-NAR-P-NAR).**

In addition to the course books, teacher trainees said they utilised other print materials. These included storybooks, set books and bibles.

Trainee: … the Bible, story books... **(TR-FGD-NAK-PR-NAK).**

Trainee: If it's about CRE. And you're teaching about, let's say God's creation. Let's say, for example, the commandment of Jesus. The 10 commandments. You have to come with that realia like the Bible. You read from the Bible **(TR-FGD-MAC-P-MAC).**

The issue of course books that are aligned to the curriculum was raised by the majority of the respondents. They expressed their discontent with using other materials that were judged to have inadequate content or to be misleading.

(iii) Information and Communication Technology (ICT) Resources

The respondents in some of the colleges reported that ICT resources were available in TTCs. The most available resource was smartphones. Others included computers, laptops, projectors, voice recorders, internet, among others.

Principal: Use laptops, IPad, gadgets and trainees' smartphones. Teacher educators research on the content **(P-INT-NYA-PR-KIS).**

Dean of Curriculum: Yeah. We even give them tasks like, now integrating ICT in their micro teaching **(DOC-INT-CHE-P-WEP).**

Principal:ICT based (computer projectors, phones, laptops and tablets), … Interactive boards (e.g., for French), white boards … **(P-INT-KAG-P-NYE).**

Principal: We don't have textbooks so we use the internet like the school has WIFI… We have computer, laptops. When conducting an exam from KNEC we use DLP since they are provided by schools that we work with **(P-INT-REG-P-MAK).**

Trainee: … Audio resources, we listen to records we apply when making models... **(TR-FGD-KIL-P-KIA).**

Nevertheless, Principals and Deans of curriculum indicated that teacher educators and trainees widely relied on online research for content generation due to a scarcity of course books and other reference materials.

Dean of Curriculum: There are no reference materials for both tutors and trainees. They depend on phones (internet) as a reference tool **(DOC-INT-JOS-PR-VIH).**

Principal: The first resource trainees' use is their phone. It is like now the textbook is dying because there are no textbooks. Now it is a part of the requirement. All of them have smart phones not *mulika mwizi.* They have a phone that can access internet (**P-INT-KEN-P-KIS).**

Principal: Resources are a big challenge; the major resource in the classroom is the smartphone **(P-INT-KAI-P-VIH).**

Through classroom observation by the researchers, the use of different ICT devices during facilitation of learning was evident in some of the colleges. Most of the teacher trainees had mobile phones. The teacher educators occasionally asked the trainees to check some content on the internet using their own mobile phones. In one of the music classes observed, the teacher trainees were requested by the teacher educators to listen to some audios or music using their phones. In other colleges, the teacher educators delivered their lessons using a projector and audio recorded voices. In other observations, the teacher educators facilitated learning without any use of ICT devices yet the learning would have been better if such devices were employed.

The Principals reported that an overreliance on smartphones for online research led to the generation of content that was contrasting in nature, or from sites that could not be authenticated or was not very relevant to the specific learning outcomes. This observation was corroborated by both teacher educators and trainees, who argued that the use of technology for research should not entirely replace all other pertinent learning resources. They reported as follows:

Principal: Yes, that is a nightmare. When we give assignments to our students they come up with different answers from the internet **(P-INT-ASU-P-HOM).**

Principal: Contrasting information from different sites **(P-INT-KAI-P-VIH).**

Principal: …KICD to come with a standard which we'll use when students are searching…every teacher is doing, or going on his own her way his or her way to gather more information. The information I gather is not the information she gathers and in such cases is real sometimes there are things that we get from the social media things that we google some are not authenticated… **(P-INT-RAC-P-HOM).**

Teacher Educator: Create awareness among trainees that technology does not replace the use of other Teaching and Learning resources such as realia, charts, photographs etc **(TE-QN-JOS-PR-VIH).**

Trainee: … define the sites to use for digital research **(TR-FGD-THO-P-KIA).**

(iv) Physical infrastructure

Principals reported classrooms were available for teacher trainees to conduct their learning activities. The number of the available classrooms depended on the size of the college.

> **Principal**: We have classrooms…we have adequate classrooms like I told you… **(P-INT-LUG-P-KAK).**

However, the principals also acknowledged that the classrooms will soon require expansion due to the growing population of teacher trainees and the increasing demand for additional space to accommodate their practical materials.

> **Principal**: We have enough classrooms, but maybe for the future intake, then we need more, because we already have about 570 students. **(P-INT-CHE-P-WEP).**

> **Principal**: …the Registrar informed me that some subjects needed a room… classrooms are going to be taken because now people want to display their wares **(P-INT-KIB-P-BUN).**

Other physical infrastructure available in some of the colleges were the library, Science laboratory, and Home Science rooms. Some principals regarded their available libraries as basic.

> **Principal:** We have labs for science and home science, ICT lab also available **(P-INT-RON-PR-NAK).**

> **Principal**: …. We have a basic library… **(P-INT-LUG-P-KAK).**

> **Dean of Curriculum:** we have a library but no approved books. We tend to rely on the old books for reference and online sources. Because they are not there **(DOC-INT-ISL-PR-MSA).**

> **Principal**: We use some text books… We have the library, though it is not very much into use but we use it partially, now that we go online a lot. The library is not very much equipped because of the books; the new books are still very few on CBC but once we begin having them then we will actually buy them so now we have the library but not well equipped **(P-INT-MIG-P-MIG).**

> **Dean of Curriculum:** We have a good computer lab where they go for practical and assignment, research and they send their work through the email **(DOC-INT-LUK-PR-MAK).**

The physical infrastructure was not available in all the colleges. Some of the principals said they lacked some facilities.

> **Principal**: …the college is quite limited because, first of all in this college we don't have a lab, we don't have home science too **(P-INT-BON-P-SIA).**

(v) Human resources

Principals and Deans of curriculum reported that there were teacher educators in different learning areas. However, some subjects lacked the teacher trainers, an issue that made such subjects not to be taught at all.

> **Trainee:** …there are some subjects which we lack the tutors, the teachers like home science we don't have that one. So, we are not learning it, *yaani* [meaning] we are not being taught **(TR-FGD-GAL-P-KIL).**

> **Trainee: …**no teachers in art and craft **(TR-FGD-EGO-P-MER).**

The respondents indicated that the lack of teacher educators compelled the colleges to hire retired teachers and employ BOM teachers to teach such subjects.

> **Principal**: We do not have permanent residential tutors for Foreign languages (French), Home Science, Music, and ICT **(P-INT-MAH-P-TUR).**

> **Principal**: I would say we employ… BOM…board of management teachers to help in those learning areas, which do not have permanent tutors in the meantime **(P-INT-MAH-P-TUR).**

> **Dean of Curriculum**: No CRE teacher, we had to hire a retired teacher **(DOC-INT-THO-P-KIA).**

As a remedy for lack of teacher educators, some of the colleges relied on resource persons to facilitate learning.

> **Principal**: Pre technical we hire somebody from a Technical institute… **(P-INT-KIB-P-BUN).**

> **Principal**: Sometimes we'll have resource persons coming into the college **(P-INT-ABE-P-NYAN).**

> **Dean of Curriculum:** We still rely on the resource people to come and guide us on the way forward **(DOC-INT-ISL-PR-MSA).**

> **Dean of Curriculum:** We also have resource people that come during the holidays for learners to understand **(DOC-INT-LUK-PR-MAK).**

(v) Improvised and locally available resources

Owing to the scarcity of relevant resources for learning, both teacher educators and trainees are resorting to the improvisation of locally available resources for effective and efficient learning. Heads of Departments, Academic Registrars and Deans of Curriculum observed that teacher educators were creatively developing learning resources in their day-to-day teaching. This involved the creation of charts and the compilation of materials sourced from the local context to enhance the relevance of their instructional methods, thereby benefiting the learning experience.

Head of Department: They learn from locally available resources as well in Mathematics they use abacus **(HOD-INT-REG-PR-MAK).**

Academic Registrar: Like I've seen Geography coming up with charts that have been drawn very well to indicate, uh, various features and so on **(REG-INT-KIB-P-BUN).**

Dean of Curriculum: We involve trainees in improvising and also collecting materials from the environment, from the local environment **(DOC-INT-BAR-PR-BAR).**

Dean of Curriculum: Most of the resources are locally available for most learning areas,they are relevant **(DOC-INT-ISH-PR-EMB).**

Dean of Curriculum: Teacher educators use mainly improvised learning resources which they make **(DOC-INT-POK-P-WEP).**

The Principals confirmed that indeed locally available materials were being used to facilitate learning in their colleges, and that teacher educators were free to come up with their own locally available resources as they saw fit to enhance learning in their classrooms. They also added that even the teacher trainees were also encouraged to improvise as well.

Principal: I want to say that our trainers try to do it their way, to create their way using the locally available resources. **(P-INT-BON-P-SIA).**

Principal: Trainees are encouraged to improvise **(P-INT-UGE-P-SIA).**

Principal: We also have manilla papers, if teachers want to draw something or make a project **(P-INT-TAM-P-ELM).**

Teacher Educator: The resources are limited though we try to improvise, source them from the internet which is quite tedious and a waste of time **(TE-QN-JOS-PR-VIH).**

Trainee…in social studies teachers come with flashcards. **(TR-FGD-NAK-PR-NAK)**

For agriculture, the respondents said they used land available in the college. Where soil and plants were needed, they got it from within the college or in the college environment. Animals were also kept in the farms within the college for projects and practical activities.

Trainee: … plants, soil **(TR-FGD-NAK-PR-NAK)**

Principal: … the college has a small farm for projects, and we have animals where [we conduct] some of the practical lessons **(P-INT-CHE-P-WEP)**.

Principal: We have agricultural land for use by trainees **(P-INT-RON-PR-NAK)**.

Trainee: …learning resources like in agriculture we can just go outside, and we take a sample of soil and also some species to come and illustrate **(TR-FGD-GAL-P-KIL)**.

Trainee: we use local resources we have in the school.

Deans of curriculum also added that there are resources that cannot be improvised in any way, for example a projector.

Dean of Curriculum: Resources are not enough. Example some resources that require to be bought are said to be improvised yet they cannot e.g. projector cannot be improvised **(DOC-INT-UGE-P-SIA).**

4.6.2 Adequacy of resources for the implementation of CBET curriculum in TTCs

The respondents were asked to comment on the adequacy of the available resources. only a few colleges indicated that they had adequate resources.

Principal: We have all the infrastructure… that are required for the implementation of curriculum including classrooms (**P-INT-MWI-PR-KIT).**

Teacher Educator: The designs are adequately provided **(TE-QN-RAC-PR-HOM).**

While there existed diverse learning resources within the Teacher Training Colleges (TTCs), a unanimous sentiment among the respondents was that these resources were insufficient. Stretching of these resources emerged as a significant factor diminishing the effectiveness of many of these resources in facilitating the successful implementation of Competency-Based Education and Training (CBET).

Principal: Resources are a bit challenge; there are very few working computers; projectors lacking; Full time internet is a challenge; Limited textbooks; Trainees are encouraged to improvisation **(P-INT-UGE-P-SIA).**

Dean of Curriculum: We have the resources for teaching and learning but they are not enough **(DOC-INT-KIL-P-KIA).**

Dean of Curriculum: Available resources but require more based on enrolment **(DOC-INT-MUR-P-MUR).**

Dean of Curriculum: the college has WIFI the problem is very huge enrolment that makes it inadequate, but initially it was adequate when we had like 50 but now we have 300 plus meaning they'll have to use their bundles **(DOC-INT-KWA-P-KWA).**

Principal: Inadequate teaching / learning materials **(P-INT-KWE-PR-KER).**

Teacher Educator: resources not on the ground, we only have curriculum designs, KICD to do something on recommended textbooks for colleges **(TE-QN-BON-P-SIA).**

Teacher Educator: The college directly needs resource facilitation in Biology/Wood Technology/ Electrical Technology and Agriculture to fully and effectively implement the design demands **(TE-QN-LUG-P-KAK).**

Teacher Educator: Resources are quite scarce in relation to the activities given in the design **(TE-QN-MOS-P-UAG).**

Teacher educators were not adequate. Most of them were teaching several subjects. They observed that since TSC deployed some of the teacher educators to secondary and primary schools, the colleges suffered inadequacies of teacher trainers.

Principal: …for example in one term you teach a lot… TSC transferred so many from colleges to primary and secondary **(P-INT-MAH-P-TUR).**

Teacher trainees also confirmed the inadequate teacher educators in the colleges, with some teacher educators teaching more than 5 different subjects, and others teaching one subject to the whole population of trainees in the colleges. Additionally, they also reported not having commenced learning certain subjects at all due to lack of teachers.

Trainee: The other problem is insufficient teachers; a teacher teaching more than 5 learning areas **(TR-FGD-KWA-P-KWA).**

Trainee: We don't have enough teachers. You find that one teacher is having 5 units **(TR-FGD-KIZ-PR-MAK).**

Trainee: …for example, we have one ICT teacher serving over 1000 learners. **(TR-FGD-ERE-P-KAK).**

The issue of inadequate teacher educators was experienced in both public and private colleges. The respondents said they occasionally used resource persons.

Lack of adequate digital devices was one of the factors impeding ICT integration in TTCs. The researchers observed that teacher educators and trainees used their own mobile phones to search for information. Internet connectivity was not available in most colleges.

Principal: Resources are a bit challenging; there are very few working computers; projectors lacking; Full time internet is a challenge **(P-INT-UGE-P-SIA)**.

Dean of Curriculum: We had a challenge of the internet connectivity where it was present and not reliable but because of the topography made it not reliable. Now we are trying to administer fiber **(DOC-INT-ISL-PR-MSA)**.

Dean of Curriculum: Not enough reference materials. ..Digital devices are not enough. Unreliable internet connectivity **(DOC-INT-KIG-P-EMB)**.

During the SBA and summative evaluation by KNEC, the teacher trainees are supposed to use digital devices. To implement this, all the colleges have to borrow the DLP devices from the nearby primary schools. In some cases, the gadgets were faulty and occasionally led to misunderstanding between the colleges and the primary schools. The duration for which the colleges stay with the gadgets was raised in consideration that the same gadgets are expected to be used by learners in primary schools.

Dean of Curriculum: And you see we are borrowing from those primary schools and we stay with them for long. Like this one now we have stayed with them for a whole month. We are denying those children the use of gadgets. Some of them have not been functioning. For quite some time they have not been updated, they have not been serviced so the moment we start using them they die on us. … yes so in fact they die on us. We borrow like 200 by the time we are taking them back, more than

half are not working and that is creating a bad relationship with those primary schools **(DOC-INT-SHA-P-MSA).**

.

Dean of Curriculum: We are actually borrowing especially from the surrounding primary schools, we borrow tablets **(DOC-INT-EAS-PR-MAC).**

A principal observed that most of the teacher educators avoided anything that required ICT during planning of the lessons.

Principal: Also have observed that when my tutors are doing lesson plans they avoid areas where there is use of ICT gadgets **(P-INT-KEN-P-KIS)**.

Teacher Educators in private teacher training colleges reported that they lacked sufficient curriculum designs and expressed the view that the government's supply of these resources to public teacher colleges only was discriminatory. They also pointed out that the government should extend the provision of ICT resources to their colleges, similar to what is provided to public teacher colleges.

Teacher Educator: There has been a big problem in acquiring the curriculum designs. This is because it's like the government only considers the public colleges (**TE-QN-ETT-PR-UAG)**

Teacher Educator: The government should help the private college with material and ICT tools **(TE-QN-NYA-PR-KIS).**

Teacher Educator: Government to provide [and] install WI-Fi in both private and public colleges at a low cost **(TE-QN-RUB-PR-THA).**

Regarding the physical infrastructure, teacher educators reported a need to improve resources in workshops and laboratories to create space for practical activities and a storage area to keep items.

Teacher Educator: We need enhanced technology workshops and laboratories to offer space and opportunities for effective training. **(TE-QN-LUG-P-KAK)**

Teacher Educator: There is a need for more resources - a workshop for making learning resources and storage facilities. **(TE-QN-KAG-P-NYE)**

The principals further emphasised the need to appropriately equip the laboratories, especially to enhance learning for the newly introduced subjects.

Principal: We would have wished that we have very well-equipped laboratories for the new areas, the woodwork, wood technology, the electrical technology, the home science, those technical areas we do not (**P-INT-LUG-P-KAK).**

Inadequate resources were also experienced in colleges that have SNE learners. they had to borrow the resources from other institutions or even partner with organisations for support.

Head of Department: We mostly borrow machines from KISE such as PERKINS braille to use for the SNE. We have also partnered with Kilimanjaro trust and they have provided us about 16 orbit readers **(HOD-INT-MAC-P-MAC).**

4.4.3 Relevance of resources for the implementation of CBET in TTCs

The respondents were asked to indicate the relevance of the available resources in the implementation of CBTE curriculum. Some of the resources were perceived as relevant while others were not.

(i) Relevance of the Curriculum designs

The respondents said that the curriculum design gives guidance to the teacher educators on which resources to use in facilitating learning. Through the suggestions given in the designs, the users are able to look for cheap resources for use during facilitation of learning.

Teacher Educator: Since the curriculum design embrace the use of innovation to come up with teaching resources, we can say we now have available and cheap teaching resources **(TE-QN-LUK-PR-MAK)**

The respondents said that the curriculum designs for primary level helped the teacher trainees to plan for their practicum.

Consequently, principals observed that the use of DECTE and DPTE curriculum designs to facilitate learning in the upgrade programs lacked the content knowledge for various learning areas. They reported that teacher educators had to resort to online research to generate content for teaching, prompting additional concerns about the current relevance of the curriculum designs in use.

Principal: The curriculum should be enriched by adding more dynamic pedagogical approaches. More knowledge content should be integrated in the learning areas. **(P-INT-BMH-TUR).**

Principal: The design expects the trainee to have gone through the training. Design doesn't give the depth **(P-INT-PRES-PR-THA).**

This finding was validated by the Deans of Curriculum and Heads of Departments, who remarked that teacher educators had to engage in extensive research to supplement the curriculum design with content knowledge.

Dean of Curriculum: We only depend on the curriculum design and own experiences. The real content is missing. We just do a lot of research **(DOC-INT-KIL-P-KIA).**

Head of Department: Resource more so references materials, from KICD we had designs that were for nine months yet we had to do more research work (**HOD-INT-REG-PR-MAK).**

(ii) Relevance of Information Communication and Technology (ICT) Resources

The principals said that the ICT resources were relevant since they helped in facilitating learning to a large number of teacher trainees. By using projectors and other audio visual resources, the teacher educators were able to reach many teacher trainees.

Principal: … We also have projectors, so if a teacher wants to go and teach even me sometimes I combine classes and go and teach and project so *inasaidia* (*it helps*). We have a very efficient copy printer for anything they want to print a lot of resources, the lab ICT lab we have two we assist them so proud the lecturers are kind of enough maybe next year when we have another group we may others but for now they are adequate **(P-INT-TAM-P-ELM).**

Principal: We use ICT projectors and laptops helps us to implement the aspect of ICT. **(P-INT-MUT-PR-MAK).**

The principals also highlighted the intense research work in the colleges. They observed that teacher trainees were engaged in searching for information thus making ICT devices very relevant. This is coupled by the fact that there are no approved course books for TTCs.

Principal: We do a lot of internet work and a lot of search and the student is given the opportunity to get a lot of information by himself or herself under the guidance of the teacher or immediate supervisor for this matter **(P-INT-VIC-PR-KSM).**

Head of Department: … We have a strong internet that we use when doing research **(HOD-INT-ROS-PR-MAC).**

Dean of Curriculum: Mainly we use ICT … We do research using smart phones and I find it very appropriate **(DOC-INT-INT-PR-MAC).**

The principals noted the introduction of e- assessment by KNEC in School Based Assessment and summative evaluation. They said that use of ICT devices by the trainees made them acquainted with the devices and that prepares them for the e assessment.

Teacher educators further affirmed the relevance of the learning resources in enhancing trainees' understanding of concepts and in aiding them as educators to address the individual needs of learners.

Teacher Educator: Some of the resources are readily available in our institution and we utilise them to our best so as to attend to the individual differences of the learners. **(TE-QN-KEW-P-KER).**

Teacher Educator: Usage of locally available materials enhances trainees understanding of concepts **(TE-QN-INT-PR-KAJ).**

Teacher trainees also noted the importance of resources in their learning. As they engaged in different learning experiences, they found value in utilising digital devices such as interacting with multimedia materials, conducting online research for content knowledge, and employing realia for enhanced learning.

Trainee: … uuh the kind of learning resources that we use here in the college, we have eh digital devices such as the projector as a learning resource where the teacher uses it to display maybe if it is a video. Another one, we have some textbooks where the learners are in a position now to get more information or clarification if they have not understood a certain content in any learning area I mean. Yeah, that's all **(TR-FGD-GAL-P-KIL).**

(iv) Relevance of course books

Much as the teacher educators indicated that they had some course books which they used for reference, these books were for the PTE curriculum and so they were not directly in line with the CBTE curriculum.

Principal: We have a library stocked with old books **(P-INT-SHA-P-MSA).**

Principal: … I would also maybe suggest the government to help us in developing the learning resources for example the textbooks because as per now we are struggling to come up with them trying to look for what was there in the old system we try to incorporate the related kind of topic so sometimes you find out that the teachers have no time for doing that but it is easy for them to go the shop the bookshop and buy whereby these materials are found, the government should be able to engage other stakeholders for the copies of these materials yes that can help **(P-INT-ETT--PR-UAG).**

Dean of Curriculum: We use internet, we develop materials using real things, we make use of the library for reference materials **(DOC-INT-UGE-P-SIA).**

(iv) Relevance of Physical infrastructure

To tackle the shortage of laptops in the college, a principal reported that teacher trainees were utilising computer labs and sharing the available laptops to advance their learning.

Principal: The trainees are the one that share laptops from the computer labs **(P-INT-BUR-PR-TAT).**

To underscore the importance of laboratories in teacher training, a principal reported that colleges were going the extra mile by visiting high schools to gain access to their laboratories. This initiative allowed teacher trainees to engage in practical activities and enhance their learning experience.

Principal: We take them out to some of the high schools that have home science labs, et cetera, and so on. And they do some, some practice over there **(P-INT-BUR-PR-TAT).**

***(v) Relevance of Improvised and locally available resource*s**

When asked to comment on the use of resources for enhancement of CBTE curriculum implementation in their institutions, teacher educators reported that they were improvising and incorporating various resources to enhance learning in and out of the classroom and make learning interesting. This was corroborated by the teacher trainees.

Teacher Educator: Mostly we use locally available resources which are available and affordable to enable the teacher trainee to get concepts… **(TE-QN-BUN-P-VIH).**

Teacher Educator: … most of the time student teachers improvise to make lessons interesting **(TE-QN-KWA-P-KWA).**

Trainee: The learning resources sometimes we are using charts, and we are using the realia we can even go to the field and find out when it is, maybe a project we are given, or research of something, we are going out to find out, about maybe we are learning about a particular item which is outside the classroom **(TR-FGD-GAL-P-KIL).**

Trainee: Since here we don't have a lot of water. So they have, uh, improvised some, some scientific methods **(TR-FGD-INT-PR-KAJ).**

Trainee: … others are improvised, like use of old boxes to make flash cards. **(TR-FGD-INT-PR-KAJ).**

Teacher educators further noted that in certain cases, the utilisation of locally improvised resources did not always align with the achievement of specific learning outcomes. They observed that improvisation occurred out of necessity due to lack of resources and, as a result, the resources were not always relevant.

Teacher Educator: We rely on online resources which may be shallow or non-uniform **(TE-QN-KEW-P-KER).**

Teacher Educator: In as much as the resources should be improvised, and online based, internet isn't stable and robust for the students and some sub strands do not permit the improvisation e.g. the cell and microorganisms **(TE-QN-NAR-P-NAR).**

4.7 Competency based teacher assessment in implementation of CBTE

According to the Teacher Education Curriculum Framework (TECF), the diploma teacher education programmes aim to produce graduates who are competent in conducting both formative and summative assessment of their learners. The course seeks to train the graduates in developing and administering appropriate instruments for diagnosing, developing and assessing the educational competencies of their learners. In order to effectively carry out assessment of teacher trainees and to equip them with skills of

conducting assessment in their CBC lessons, Teacher Educators were taken through a sensitization on Competency Based Teacher Assessment **(**CBTA).

This study sought to find out how CBTA is conducted in the course of implementation of CBTE curriculum. It first sought to establish the reach of the sensitisation and its effectiveness on teacher educators. Information was sought from college Principals, Deans of Curriculum, Teacher Educators and Teacher Trainees. Additional information was obtained from observation of professional documents and conduct of lessons.

4.7.1 Teacher Educators' capacity to undertake CBTA

Teacher Educators were first asked to indicate whether they had been sensitised on CBTA approaches. The findings showed that 92.1% of the sampled teacher educators had gone through CBTA sensitisation while 7.9% had not.

The findings on attendance of CBTA sensitisation were disaggregated by the programmes attended. This was to show the relative comparison of the programmes in which more teacher educators have attended. The findings are presented in Table 10.

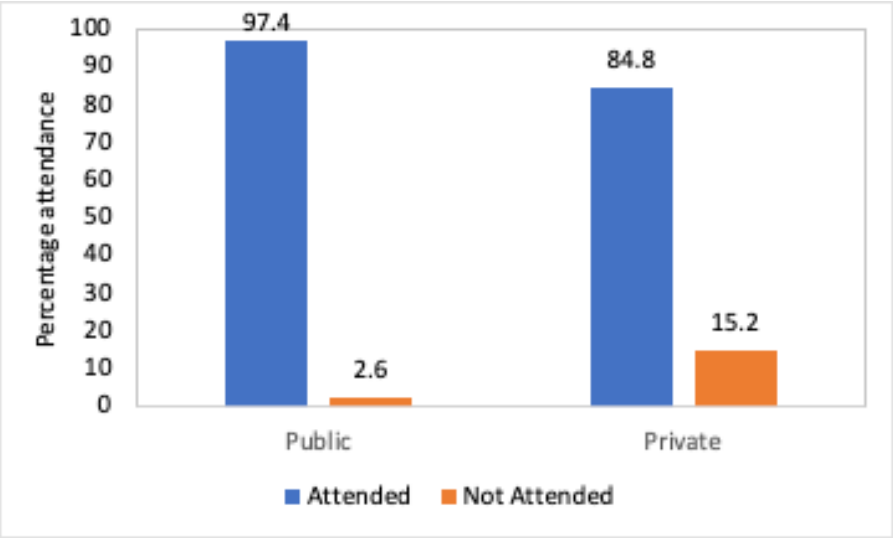
Table 12:Attendance of CBTA sensitisation by programme0:

	Yes		No	
	f	%	F	%
DECTE	59	92.2	5	7.8
DPTE	169	93.4	12	6.6
DSTE	18	81.8	4	18.2

From Table 10, it appears that the highest attendance has been by teacher educators in DPTE colleges (93.4%) followed by DECTE (92.2%) and lastly DSTE (81.8%).

The analysis also sought to compare teacher educators in public and those in private colleges in terms of attendance of CBTA sensitisation. The comparison is presented in Figure 2.

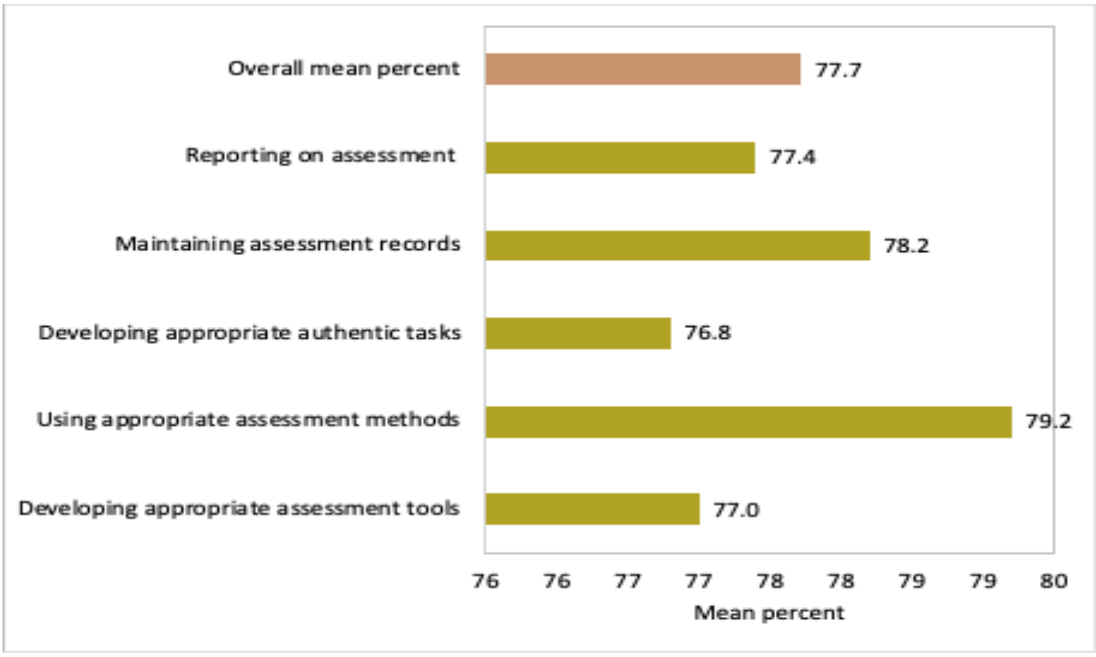
Figure 2:Comparison of attendance of CBTA sensitisation between teacher educators in public and private colleges



The findings from Figure 2 show that there has been better attendance of CBTA sensitisation by teacher educators in public colleges than those from private colleges. In public colleges, the majority of teacher educators (97.4%) have attended. In private colleges, some 15.2% of the teacher educators have not attended CBTA sensitisation.

The trainers were also asked to indicate their effectiveness in undertaking various tasks under competency based teacher assessment. They gave their responses as scores in a continuum of increasing effectiveness from 1 to 5. From their responses, mean scores were computed for each aspect of assessment and converted to percentage for comparison. The findings are summarised in Figure 3.

Figure 3:Teacher educators' effectiveness in aspects of competency based assessment



According to Figure 3, teacher educators indicated that they are quite effective in undertaking all the aspects of competency based teacher assessment. The overall average rating was 77.7%. The highest rated aspect was 'using appropriate assessment methods' (79.2%). The lowest rated, although not low at all, was 'developing appropriate assessment tasks' (76.8%).

In order to tell how effective teacher educators in the different DTE programmes were, the study separated findings on effectiveness of the teachers in undertaking various assessment tasks for the different programmes. The findings are presented in Table 11.

Table 13:Teacher Educators' effectiveness in aspects of competency based assessment

	DECTE	DPTE	DSTE
a) Developing appropriate assessment tools	78.8	77.2	70.0
b) Using appropriate assessment methods	80.0	79.4	73.6
c) Developing appropriate authentic tasks	77.8	76.4	77.2
d) Maintaining assessment records	80.0	77.8	76.4
e) Reporting on assessment	79.4	76.6	78.2
Mean score	**79.2**	**77.5**	**75.1**

From Table 11, it appears that teacher educators at the three levels of the DPTE programme were quite uniform in terms of their effectiveness in different aspects of competency based assessment (all the means were in the middle to upper 70s). There was no aspect of

assessment that stood out as being exceptional in terms of being well or poorly done. Overall, however, it was found that teacher educators for the DECTE programme rated themselves as being more effective than those in DPTE or DSTE.

The opinions of Deans of Curriculum and Heads of Departments were sought on their teacher educators' capacity to develop and administer CBTA. Most of them were satisfied with their staff's professional capacity to undertake CBTA competently. Some of their comments were;

> **Dean of Curriculum:** We are guided by the procedures of assessment. The teachers are competent in doing practicum assessment. Some went for training and so they are able to guide us in doing assessment **(DOC-INT-MAC-P-MAC).**

> **Dean of Curriculum:** Tutors are well-trained. Out of 10, 7 are seasoned trainers and 3 joined the teaching profession recently **(DOC-INT-MAH-P-TUR).**

In some cases, the Deans of Curriculum indicated that their teacher educators had a challenge with carrying out competency based teacher assessment. Some of the Deans suggested that capacity building especially in assessment should be sustained. There was also a mention of marking online assessment as a challenge to some teacher educators and especially the older ones.

> **Dean of Curriculum:** … assessment is a challenge but some use questionnaires, test. Yes. Others use portfolio based on activities or tasks the learner has been doing **(DOC-INT-KIB-P-BUN).**

> **Dean of Curriculum:** Capacity in terms of knowledge, good. Capacity in terms of devices is poor. As it is now, we are struggling as it is quite a challenge. Marking online with the age bracket of the staff is not friendly. If you go to our library, everything is outdated **(DOC-INT-KIL-P-KIA).**

> **Dean of Curriculum:** We are doing the e-assessment. During formative teachings, we do assessment. We have terminal exams. Our teachers have gone through the training except a few old fellows who have some challenges **(DOC-INT-EAS-PR-MAC).**

> **Dean of Curriculum:** We have SBA and summative assessment. KNEC develops SBA and it is e-assessment and KNEC assessment. With the end of term, we have an end of term assessment developed by the departments and we encourage them to come up with authentic tasks. We rely on KNEC because some of the projects run up to 4 weeks and we are the ones who mark. We do not know how to effectively administer the different kinds of assessment…**(DOC-INT-THO-P-KIA).**

Deans of Curriculum were asked to cite priority areas that their teacher educators require in order for them to more effectively deliver the CBTE curriculum. Among the areas mentioned was assessment in general.

Dean of Curriculum: Reinforcement in assessment as a whole. If we can be told on majorly of assessment and how to go about it, we can now, channel to our learners to also understand how they're supposed to approach it when they get to (school). **(DOC-INT-KIB-P-BUN).**

Dean of Curriculum: Capacity building should continue, not very much adequate. Training needed is for assessment **(DOC-INT-KAG-P-NYE).**

Dean of Curriculum: ICT integration in learning and Competency Based Assessment **(DOC-INT-KEN-P-KIS).**

4.7.2 How colleges conduct competency based teacher assessment

The study sought to establish the extent to which TTCs were practising competency based teacher assessment in the course of training. College Principals were asked to give their views on how CBTA was conducted in their colleges. From their responses it was clear that some of the colleges were undertaking practices that are aligned to CBTA. There was evidence that the paradigm shift in assessment has been embraced to some extent; a variety of assessment methods, tools and approaches were in use. It was also clear that there was effort to give prominence to formative assessment, keep appropriate assessment records and provide feedback and follow-up. In all this, the use of technology was constantly mentioned.

Principal: … we are now able to assess them differently from what we used to do in the past. We give students a variety of tasks... Any task that is given to students is actually assessable. The second term, there was one lecturer who was taken to task by the learners because they said they didn't understand how he had awarded… And when the lecture was asked, he said, yeah, you did. You discussed but when I asked for presentations, how many of you presented? If you stood before the class and said something there were additional points. Slowly by slowly we will all start using different assessment tools **(P-INT-KIB-P-BUN).**

Principal: Online assignments … Tutors are encouraged to give projects; Challenge learners to come with tasks to develop creativity /innovation; Challenging trainees to link between sub strands and practice/actual teaching; stressing on peer teaching and practicum **(P-INT-UGE-P-SIA).**

Principal: … this assessment is done through different areas. This observation, you observe and see how is it possible? Is the learner, is the student teacher able or he or she grasp the concept? ... Then there is also giving questions, oral questions… to find out if the content that was disseminated has been grasped by the, uh, student teacher… if you find that the concept is not well, uh, you know, taken in, then you can plan for a remedial class **(P-INT-CHE-PR-WEP).**

A Principal indicated that shortage of teacher educators in colleges had prompted them to use more group work in assessing trainees.

Principal: Tutors give formative assessments to the learners-mostly the tasks are given in groups-this is because of shortage of tutors **(P-INT-SEM-P-KSM).**

Just like with teacher educators, Principals mentioned the role played by KNEC in formative assessment. They indicated that what KNEC is doing is setting the pace for tutors to emulate. There was a feeling, however, that KNEC had taken over all assessments and that colleges were only administering already set assessments. They cited some challenges that are being experienced especially in conducting e-assessment.

> **Principal:** We have continuous assessment tests, we give internally. KNEC is also taking over administering the summative evaluation. We are catching up with the KNEC assessment and if well implemented, it is one of the best **(P-INT-EKI-PR-MAC).**

> **Principal:** The assessment has taken the mode of KNEC. The SBA 2 and summative. The assessment is practical oriented. We encourage tutors to conduct their personal formative assessment but our major assessment is done by KNEC. The assessment is suitable; it's only that it should flow **(P-INT-INT-PR-KAJ).**

> **Principal:** Since assessment is online, we encourage the trainees to get used to it since they will be required to use technology in teaching so it helps them develop digital literacy skills. We have midterm assessments but KNEC also has exams which are done online. We also give our trainees assessments and they are able to get feedback based on their performance **(P-INT-MUT-PR-MAK).**

> **Principal:** We have summative and formative assessments and both are set by KNEC. We don't set. They are set by KNEC and brought us. We only administer **(P-INT-MIG-P-MIG).**

One of the Principals observed that while online assessment is a good idea, it may leave behind some of the students with special learning needs.

> **Principal:** It has helped us to develop a good rapport with the community. We are moving away from a point of "my work and nobody will see". However, it leaves out students with SNE. The form of online administration, I don't think we are ready **(P-INT-MAC-P-MAC).**

Despite the wide application of CBTA approaches, it was clear that paper tests were still very present and in use. This was supported by some respondents who indicated that written tests are still the most commonly used tool.

> **Principal:** Topical assessment (paper tests) at the end of a topic **(P-INT-JOS-PR-VIH).**

> **Dean of Curriculum:** Teacher educators in terms of using our variety of assessment methods and tools. I have not seen them using more than one. Mostly use written tests and few use projects. Developing and using assessment tools is a big challenge. Most of us wait for SBAs prepared by KNEC or use written tests which are easier to determine progress **(DOC-INT-BAR-P-BAR).**

In terms of assessing trainees during practicum, it was observed that mentorship was evident in the colleges. It was reported that the newer teacher educators were attached to experienced ones so that they could learn how to assess the practicum.

> **Principal:** New teachers are attached to experienced ones to learn how to assess practicum **(P-INT-BUN-P-VIH).**

Some of the Principals appreciated the value of competency based assessment. They indicated that it eliminates unnecessary competition and helps build confidence in the students. They also alluded to the benefits of community service learning.

> **Principal:** Competency-based assessment, is a good way of assessing because every learner has the opportunity to display their own competency. Unlike where we were competing with each other, a learner, a trainee now competes with themselves you know, and, and so they're improving on their own competency without pressure from you know, I'm competing with whoever and whoever…And you know, when we do that, the trainee is able to see, this is my weakness. I can grow. And then there are options in the CBC, there are very many, many options where you can display your abilities **(P-INT-ABE-PR-NYAN).**

> **Principal:** …And we also integrating with the community. Like sometimes they will go to the dispensary. Sometimes we'll have resource persons coming into the college, But mainly what we're using is creating time. I have said seven to eight we do a lesson, which is outside the programmed hours. Evening we do some lessons, not programmed, but teachers volunteer. And then we also do Online lessons **(P-INT-ABE-PR-NYAN).**

During FGDs with teacher trainees, they were asked to explain how their teacher educators assessed their progress during training. This was to triangulate what the Principals and teacher educators reported on how the colleges conducted assessment. Their responses showed evidence of competency based assessment in terms of a variety of assessment tools and methods such as written tests, checklists, portfolios, projects, questionnaires, group tasks, practical activities, observation and oral assessment. It was also apparent that their trainers provided appropriate feedback from assessment.

> **Trainee:** We do written tests end of every term. We also use portfolios, we file them to show progress. We do projects in groups and tutors assess the findings that is if we are making the handwashing containers, the tutors will come and see if it's working. We are also given a chance to perform in the field.

> **Trainee:** Using assessment portfolios questionnaires, interviews and oral questions such as KIQs. **(TR-FGD-MAH-P-TUR).**

> **Trainee:** Assignment; end of term exam; random assessment tests; individual tasks; group tasks; presentations on researched work **(TR-FGD-EAS-PR-MAC).**

Trainee: When given group work, teacher educators use observation while we carry out some activities, as we make presentations, they also correct us and give feedback regarding our findings, use formative and summative assessment **(TR-FGD-CHE-P-WEP).**

Trainee: We are also given projects as part of assessment, when we learn we are also given projects so that as we present the projects the teachers observe us, and they record so it's another way we are assessed around here **(TR-FGD-GAL-P-KIL).**

Trainees with special learning needs (SNE) expressed concern over some of the difficulties they encounter in assessment. One of these was to do with taking assessments online and not having the required technologies and software. Some of their comments were:

Trainee: To add on what my sister … has said on technology, on our last SBA, we did our assessment and for us Visually Impaired we use something called NVDA. And NVDA cannot read everything, like French, it cannot read music because as we have said our music and the regular one *ziko na tofauti (they are different).* So I have to ask someone to read for me. And, you know, it takes a lot of time because she has to read, I internalise, she reads again, so that I may understand it because I'm not reading it on my own. So it is very difficult for us to do it online **(TR-FGD-MAC-SP-P-MAC).**

Trainee: Maybe I'll say this on behalf of our fellow brothers and sisters here. Listen now for the Visually Impaired sometimes you find that maybe the lecturer will take a picture of a strand. Yes. Send it to the group you wrote this. And we're not able to see. So without the help of me or her, it is very difficult. So let's say in a scenario that we are not present now, how will they get to know what the lecturer has sent in the group for them to do or to go ahead or maybe use their phones to do or to search and get there the required word findings. So it's somehow a challenge **(TR-FGD-MAC-SP-P-MAC).**

In a few instances, trainees reported that their trainers mainly used written tests. Some also indicated that they do not get feedback from the external assessments they do.

Trainee: Written tests are the only method that has been used **(TR-FGD-BUR-P-TAT).**

Trainee: Formative assessment is used in languages where a checklist is used to check on pronunciation and trainer comment on trainee responses. Observation is used in Science to observe ways we demonstrate care of the environment, KIQ and oral questions, diagnostic assessment before the beginning of a strand to revisit what was learned previously **(TR-FGD-BAR-P-BAR).**

Responses from trainees also suggested that in some colleges, ICT was employed for assessment. This was especially so for carrying out research on assigned topics and doing e-assessment. It was said that different digital devices such as smartphones, TVs and

computers were used for the purpose of searching for information. It was also reported that trainees are given the opportunity to share their work through PowerPoint presentations.

> **Trainee:** Digital resources such as smart phones and TVs which are effective in searching for current information, computers in the computer lab which allow us to interact with computer programs, models which enable us to develop creativity, text books which are good sources of information, audiovisual resources which allow us to record our presentation then critique our performance and realia for effective in teaching and learning **(TR-FGD-BAR-P-BAR).**

> **Trainee:** Presentation for critique and feedback. Question and answer (Random assessment) using ICT. Oral questioning. Projects, take to the teachers for award. PowerPoint presentations and submit. Group activities and critique each other **(TR-FGD-KIG-P-EMB).**

The study further sought to confirm that teacher educators were practising competency based assessment approaches in the course of training. Their professional records were observed to see if there was evidence of use of at least three different modes of assessment for tracking trainees' progress. Observers looked out for assessment modes such as portfolio, checklists, written tests, projects, observation schedules, journals, anecdotal notes and so on.

From the observations conducted, evidence of use of a variety of assessment modes was scored at 60%. This can be described as slightly above average. The observations revealed that in many colleges, the most widely used assessment mode was written tests. In some colleges, however, different assessment modes were evident. These included projects, written tests and oral questioning. In a few instances there was evidence of portfolios and rubrics.

4.7.3 Preparation of trainees for competency based assessment in the classroom

The study sought views from teacher educators on how they prepared teacher trainees to undertake competency based assessment at the classroom level. From their responses a number of categories of interrelated views emerged. The most frequent ones were: use of group and individual assignments; use of ICT to support assessment; use of project work; practice work on development of authentic tasks and tools development; peer feedback systems on assessment tasks; traditional paper and pen assessment; exposure to how to maintain assessment records and emphasis on CBA as assessment for learning and as learning.

Teacher educators indicated that they frequently engage trainees in group and individual tasks where they develop authentic tasks and assessment tools. The trainees present their work in class and feedback is then provided by fellow trainees and the trainers. It was clear that micro teaching and peer feedback mechanisms were widely applied across the colleges. Some of the comments in this area were:

> **Teacher Educator:** Through provision of tasks that aims to equip the trainees with the appropriate knowledge, skills and attitudes. The trainees are given room for peer evaluation and self-assessment **(TE-QN-MWI-P-KIT).**

> **Teacher Educator:** By assigning them tasks to do in class; assessing the tasks done and awarding marks as per the performance; The tasks are done either individually or in groups **(TE-QN-JOS-PR-VIH).**

> **Teacher Educator:** By encouraging them to carry out peer evaluation, involving them in creating assessments and allowing them critique their work in class **(TE-QN-KER-P-KER).**

> **Teacher Educator:** They are grouped according to the indigenous languages groups and assigned tasks for presentations, individual tasks, projects and written work **(TE-QN-BUN-P-VIH).**

> **Teacher Educator:** Use of CAT, class assignments and project work, use of group discussions and individual learners' presentations **(TE-QN-VIC-PR-KSM).**

It also emerged that trainers made efforts to integrate use of ICT in conducting assessment. Some comments in this area were:

> **Teacher Educator:** I give the assessment on Google Classroom using different tools, they also present their work on the same **(TE-QN-ABE-PR-NYAN).**

> **Teacher Educator:** Use of micro teaching, group discussions and presentation in class, use of digital resources for e- learning **(TE-QN-MWI-P-KIT).**

Some of the trainers indicated that they followed the laid down curriculum designs which addressed all aspects of competency based assessment.

> **Teacher Educator:** Using appropriate methods while assessing trainees; conducting assessment as learning and for learning; Teacher trainees preparing assessment tools for assessing learners at primary level using primary school curriculum design **(TE-QN-UGE-P-SIA).**

> **Teacher Educator: …** taking them through competency based assessment strategies and how to come up with various assessment tools **(TE-QN-RON-PR-NAK).**

> **Teacher Educator:** By training them on how to prepare the various assessment tools-portfolios, rubrics etc.The designs also require them to develop the same as specific learning outcomes **(TE-QN-KIB-P-BUN).**

Some of the teacher educators' comments demonstrated a good awareness about what is expected of competency based teacher assessment. They made reference to aspects like

assessment for learning and assessment as learning and also the Bloom's Taxonomy. Some comments were captured as:

> **Teacher Educator:** The trainees are normally taken through all the 12 assessment tools that can be used with emphasis on appropriate methods of assessment for each content area. Emphasis is also given on the aspect of assessment as learning and for learning for teacher trainees and how it facilitates learning in the classroom **(TE-QN-BUR-P-TAT).**

> **Teacher Educator:** Starting from KIQs- these give direction on scope. Assessment methods that are context specific depending on the task to be accomplished. Rubrics-these are more in-depth assessment methods that can test higher order performance. Assessment tools- I have used this pyramid successfully to help learners understand the interrelatedness of knowledge in a learning area and also across disciplines **(TE-QN-KIBL-P-KIA).**

> **Teacher Educator:** Ensure the assessment follows the refined materials (Bloom's taxonomy), knowledge, comprehension, application, synthesis, evaluation **(TE-QN-EAS-PR-MAC).**

> **Teacher Educator:** Come up with assessment tasks. Device assessment tools for collecting assessment information. Making them aware of the assessment tasks and what is required of them as trainees. Assemble the assessment materials required **(TE-QN-ELG-PR-UAG).**

In one incident, a teacher educator admitted not being familiar with competency based assessment. In another case, a trainer admitted that he used the usual written tests for assessment. They indicated the need for retooling in the area of competency based assessment.

> **Teacher Educator:** Not very much conversant in that regard and needs training/ retooling in that regard to improve on my knowhow **(TE-QN-GAL-P-KIL).**

> **Teacher Educator:** We still use more written tests as opposed to other methods hence the preparation is geared towards that…(**TE-QN-MOS-P-NAN).**

Teacher educators indicated that they expose trainees on how to maintain assessment records, provide appropriate feedback and take corrective action where necessary.

> **Teacher Educator:** Discuss giving examples of all the assessment tools, tasks and show them how to maintain assessment records. Encourage teacher trainees to give timely feedback (reporting on assessment). In case there's any gap identified during the assessment; we guide them on how to look for possible solutions (**TE-QN-KIT-P-KIT).**

It was quite clear that teacher educators did address competency based assessment but mostly as part of delivering the content stipulated by the curriculum designs. When assessing trainees, they did not use much of the approaches that they teach them.

> **Teacher Educator:** … We do carry out that formative assessment and we train them on the ways on the checklist, the use of the observation schedule, use of anecdotal records,

all those things, we do them in the curriculum as we implement the curriculum in any learning area and we train them on how to use them…(**TE-QN-SHA-P-MSA).**

4.7.4 Assessment-Related Issues of Concern and Suggestions for Improvement

Respondents cited several issues that need to be addressed when it comes to assessment. Some of these were to do with harmony between formative assessment by trainers and School Based Assessment (SBA) conducted by KNEC. The issue of SBA conducted by KNEC was mentioned as an area of challenge in that some felt it was an interference to the efforts by trainers to conduct effective formative assessment. They indicated that since assessment by KNEC had an impact on the summative assessment, trainees were more serious with it at the expense of formative assessment by the trainers.

Teacher Educator: KNEC SBAs every time interferes with and renders my assessment in vain because it is KNEC CBA that counts in the final scheme of things. Maybe stop preparing any CBA **(TE-QN-MUR-P-MUR).**

Teacher Educator: It is a very good curriculum and tests the learners' gift and talents. However, KNEC has started making it too theoretical. We should have a balance of written assessment and project. When the two are done, it overworks (**TE-QN-KER-P-KER).**

Teacher Educator: In terms of assessment and more so summative, SBA, the issue of system from KNEC failing is common and also errors in exams (**TE-QN-MIT-PR-MAC).**

Teacher Educator: CBTA - During assessment, a lot of time is used in assessment at the expense of teaching and learning. KNEC should consider time during examinations, especially Mathematics (**TE-QN-LUG-P-BUN).**

Another issue was to do with technology related to e-assessment. This was because it was difficult for colleges to source for tablets from neighbouring primary schools for purposes of facilitating the assessments. For private colleges, it was an expensive undertaking because they had to pay to get the gadgets.

Teacher Educator: Online assessment has been a challenge to few upgrade learners (trainees) for diploma. Now with these large numbers we are wondering how KNEC will ensure all colleges have enough tablets for assessment. Borrowing from primary schools is a challenge as the tablets are defective **(TE-QN-MOS-P-NAN).**

Teacher Educator: (a) The format for assessment both formative and summative should be improved on especially on frequency and feedback. (b) Professional learning areas are quite many and there is a need to prepare training programmes for each specific area. (c.) There is a need to prepare specific websites that learners can search for and a method be put in place on how these websites can be accessed and updated. (d) The internet connectivity in colleges should be enhanced **(TE-QN-ERE-P-KAK).**

The sentiments of the teacher educators were corroborated by a principal who acknowledged that during KNEC assessment they sourced the tablets from their neighbouring primary schools.

However, they had to pay for the gadgets.

> **Principal:** When conducting an exam from KNEC we use DLP since they are provided by schools that we work with. We are charged 1000 each whenever there is an exam **(P-INT-REG-PR-MAK).**

During FGDs, trainees expressed concern over various issues. Some of the frequently mentioned issues were to do with: structure and implementation of the practicum; difficulties associated with e-assessment; unique difficulties for trainees with special learning needs; uncertainties about school based assessment; the quality of e-assessments; and the number of subjects that trainees have to study. Some of the comments captured were as follows.

> **Trainee:** Two terms practicum in a school will be challenging to have enough capital to sustain their stay in school yet they have had micro teaching; hopes to be absorbed by TSC; in second term of practicum, TSC should absorb trainees as interns or for in-service **(TR-FGD-INT-P-KAJ).**

> **Trainee:** For HI, wishes to change and move to DPTE; Practicum has two terms, one term for mentorship and the second for practicum - this should be reduced to one term and the first month to be for mentorship whereas the remaining two months will be for practicum; for VI- the facilitators sends photos to a group on assignment but this does not take care of the VI trainees; VI - online KNEC assessment challenging as the digital program is different and does not take care of them **(TR-FGD-MAC-P-MAC).**

> **Trainee:** The programme is well thought out well. Summative evaluation to be done in bits, the programme should be commensurate with the pay, e-assessment has a problem as they don't have prior knowledge on how to use the ICT gadgets, the revision papers will miss if they continue using e-assessment, there are no results for SBA's. **(TR-FGD-KWA-P-KWA).**

> **Trainee:** Programme is good but the workload is huge. We are supposed to proceed formentorship and practicum, the issue is the ones who will be mentoring us possess a P1 certificate and they have not undergone CBC training. We are not happy because the cluster point for entry was reduced. KSL is allocated 3 hours per week but not assessed as 1 unit. We are not sure if the SBA will contribute to their final grading. MoE is not conversant with the practicum guidelines… **(TR-FGD-SHA-P-MSA).**

> **Trainee:** Requirement to use computers in writing exams. (Need training on how to use the gadgets) CBA. Incorporate everyone. Assessment was totally unfair; it did not meet the qualities of a standardised assessment. Training of the exam modalities were hurriedly done. KNEC never piloted if the system of assessment will be a success. SBA the learners should be trained adequately. KNEC be flexible during the assessment (paper 1) Educational assessment many students did not log in.

Designs adjust time, period, to cover the required learning areas **(TR-FGD-KAG-P-NYE).**

Trainee: Summative assessment online is difficult where there is no internet; we need assurance from the government that we will not be locked out of the system due to the grading system; there should be no addition of fees **(TR-FGD-KEN-P-KIS).**

Trainees lamented that they were not getting feedback from external assessments. They also expressed concern about the role of school based assessment; that they were not sure about what SBA results were used for.

Trainee: We use oral tests and we are given back our papers. External examination, we have never gotten feedback on how we performed **(TR-FGD-KIL-P-KIA).**

Trainee: Through projects. Through CATS. Through observation-use of lists. They are adequate. SBA done. No feedback on SBA, we should get feedback, do not know if SBA counts **(TR-FGD-KER-P-KER).**

Trainee: This has been a great challenge. They use assessment rubrics, oral tests, portfolios, questionnaires but the problem is that they have never been given feedback **(TR-FGD-SHA-P-MSA).**

Other issues touched on the mode and infrastructure for administration, capacity and content of the assessments and policy issues such as number of subjects taken.

Principal:I would suggest we go full online since it enhances integrity and cost effective. Everything should be paperless however, no tablets for online assessment. We use borrowed tablets from primary school for assessment. Tutors should be able to set and administer assessment online **(P-INT-KIL-P-KIA).**

Principal: Previous online assessments were chaotic. It was a competition of how well you submit. However, need a lot of improvements. A majority of assessments are given by KNEC. The online assessments contain too many objective questions. The use of multiple choices are not direct questions. I wish they could bring more of application questions. Let the trainee express their thinking **(P-INT-HOL-PR-MAC).**

Principal: … And even now, the assessment, now that we are going e-assessment we have multiple choices. And I don't know whether we are really assessing the competency or we are assessing the theory… I can't really tell **(P-INT-CHE-P-KAK).**

A Principal observed that there is need for TSC to recognize qualification with a Diploma over and above having the previous PTE certificate.

Principal: First of all, let the TSC recognize that as diploma. So that they're not at the same level with the certificate, during the employment. Because they're not equal. This person has already gone through, they have done maybe P1 certificate and then

done a diploma. So that one itself will really can, encourage and motivate the students (trainees) because they'll see we have got a difference **(P-INT-NAR-P-NAR).**

Trainees also expressed dissatisfaction with the policy requiring them to be assessed in all subjects that are offered. They called for a change of policy so that they are allowed to take only subjects that they are good at.

Trainee: Training is important and makes us to be all round, some areas need to be looked at, reduce learning areas so as to be specialised in subjects we are good at, duration of the program is long-it should be 2 years, stop use of gadgets in SBA **(TR-FGD-NAB-P-BUN).**

Trainee: It is not fair to study all 23 learning areas makes us 'Jack of all trades and master of none'… It is helping you to acquire digital literacy. It's preparing to handle different types of learning. Equipping with variety skills. Values to accommodate each other. It's good but needs improvement: The learning areas need to be addressed. Let us be granted to learning areas we are good at **(TR-FGD-MUR-P-MUR).**

4.8 Challenges Faced in the Implementation of CBTE

Establishing the challenges impeding the implementation of the CBTE lays a foundation for bridging existing gaps through viable interventions. The information on the challenges affecting implementation was drawn from Principals, Heads of Department, Registrars, Teacher Educators and trainees. The findings highlight thematic areas related to resources, the content to be covered as well as policies governing implementation.

4.8.1 Curriculum Support Materials

Among the factors that raised concerns during implementation, the findings showed that resources were critical to curriculum implementation, yet they were not available. The principals decried the absence of curriculum support materials like course books and teacher educator guides. They stated that they were compelled to fall back to old references used in earlier curriculum and the internet.

Principal: I would also maybe suggest the government to help us in developing the learning resources for example the textbooks because as per now we are struggling to come up with them trying to look for what was there in the old system we try to incorporate the related kind of topic so sometimes you find out that the teachers have no time for doing that but it is easy for them to go to the shop the bookshop and buy whereby these materials are found , the government should be able to engage other stakeholders for the copies of these materials yes that can help **(P-INT-ETT-PR-UAG)**.

Principal: For now, sometimes we rely on PTE textbooks which may not have relevant current information **(P-INT-MIG-P-MIG).** Additionally, the Heads of Department pointed out that KICD had not provided guidelines regarding the reference materials

for the teacher training programme. They observed that this was a new area that required some guidance alongside the provision of curriculum designs.

Teacher Educator: No guidelines as per training to the reference materials being a new area, it was paramount for KICD to bring the design with a few reference materials **(TE-QN-KAI- P-VIH)**

Inadequacy of the learning resources and subsequent reliance on dated information to deliver the curriculum was also reiterated by Heads of Department. They indicated that libraries in teacher training colleges did not have books that are approved. They agreed with the views of principals that the resources they required were in short supply in the teacher training colleges.

Head of Department: We have a library but no books that are approved books. We tend to rely on the old books for reference and online sources. Because they are not there (**HOD-INT-ISL-PR-MSA)**.

Similar observations were made by the teacher trainees on the experiences during their training. Inadequate resources were mostly mentioned as the main challenge that they faced. They indicated that they lacked books, internet.

Trainee: inadequate resources, books, no course books for the level of learners, no CBC course books **(TR-FDG-ABE-P-NYAN)**

As a result of having to get information from different sources other than approved curriculum support materials, the implementers observed that there was no standardization as they accessed and delivered contradicting content. They said that their effectiveness as implementers was curtailed by lack of relevant reference materials. The principals further opined that internet also misguided trainees who could not distinguish correct information from that which was not correct. According to them, over-reliance on the internet discouraged the development of critical thinking. This was due to the fact that in order to get information, most trainees just needed to press a button for answers they required to pop out. They attributed this to the emergence of Artificial Intelligence.

Principal: Contrasting information from different sites, can KICD provide standard information **(PR-INT-KAI-P-VIH).**

Principal: Challenge is that internet is a source of misinformation because internet is full of information so it because when you search you can get a lot of information so it comes challenging for the learners to devise which one is the correct one we also have a challenge AI artificial intelligence…which is making these students not to think because every time you give them a question or research you giving them they just press and get the answers directly (**P-INT-TAM-P-ELM)**.

The trainees further affirmed that using the internet often led to generation of inaccurate information. They said that on some occasions, both trainees and their trainers were not able to authenticate what they had researched, leaving them unsure of the correctness of the information they had. They observed that the lack of clarity on the correctness of the information was left and they could only prove its worth during assessment.

> **Trainee:** Sometimes you may be given a task by the facilitator, when you find out the answers, the teacher comes and says these are not the correct answers **(TR-FGD-GAL-P- KIL).**

> **Trainee:** We use the phone and you do not know the website we are going to use. So we come up, for example, we are seated in groups, we research on the same outcome and then we get different information. And then given them themselves they don't know this one is right and this one is wrong. So, we just have all the information…this one is proven when the exam comes because you read this one and it is wrong. And it is what you researched **(TR-FGD-ERE-P-KAK).**

Like the principals and trainees, teacher educators affirmed the controversy underlying the use of the internet to get information on the content areas in the curriculum. They were in agreement that the information obtained was not always accurate.

> **Teacher Educator:** Searching information from online sources gives varied and sometimes conflicting information **(TE-QN-BUN-P-VIH).**

> **Teacher Educator:** That is a nightmare. When we give assignments to our students they come up with different answers from the internet **(TE-QN-ASU-P-HOM)**.

The trainees on the other hand expressed their fears of transferring inaccurate information to their assessments as this would ultimately have negative implications on their performance in the course.

> **Trainee**: We are worrying because, in case you google, and you obtain the wrong answers and then you take those answers to the exam you use those notes to answer the exam ..**(TR-FGD-GAL-P-KIL).**

On their part, the teacher educators further admitted that owing to lack of reference materials, they had to make their own notes. This posed some difficulty to them.

> **Teacher Educator**: Tutors have a challenge coming up with notes due to lack of reference materials **(TE-QN- KER- PR-KER)**

Findings on possible solutions to the gaps in curriculum materials show that the implementation should have been preceded by ample preparation. Teacher educators placed

the responsibility of availing the necessary resources on the government and its agencies. According to them, the learning resources should have been ready before the programme was implemented.

They reiterated the role of KICD in preparing the curriculum support materials as a way of providing standards and ensuring uniformity of the materials in use. The development of manuals was particularly considered important in defining the scope of the content to be covered in all learning areas.

> **Teacher Educators**: Develop manuals for facilitators in every area of learning they will guide to what extent the facilitators should go deep with content to avoid scenes where they do it deeply or shallow (**(TE-QN-KAM-P-NYE)**
>
> **Teacher Educator**: The government ought to have provided the necessary resources before the implementation of the program.
>
> **Teacher Educator:** There is a need for KICD to prepare reference materials for uniformity purposes **(TE-QN-MAH-P-TUR).**

Apart from depending entirely on the government and its agencies, other findings showed that the principals were of the view that the government should pursue possibilities of developing materials collaboratively with the colleges. As a way of addressing the shortfalls in the access to reference materials needed for curriculum implementation, the implementers called for an inclusive initiative that would bring them on board in developing the materials.

> **Teacher Educator**: Include the teacher trainers in implementation and in making the design and the reference materials**(TE-QN-KAI-P-VIH)**
>
> **Principal:** I think KICD needs to collaborate with us to develop these learning materials. (**P-INT-MIG-P-MIG).** Another option would require colleges to be empowered to provide materials.
>
> **Teacher Educator**: Handbooks to be developed; tutors to be empowered and engaged to develop support materials **(TE-QN-UGE-P-SIA)**
>
> **Teacher Educator**: Colleges to be sensitised on the need to provide materials **(TE-QN-MUR-P-MUR)**

In order to curb the use of unreliable content during assessment, the trainees suggested the provision of an Application that would give correct information. Their trainers also asked that particular sites be identified and specified for users to search for the information they need.

Trainee: So, I am requesting the government or the ministry of education to give us an app which when you google you can get the correct answers. **(TR-FGD-GAL-P-KIL).**

Teacher Educator: Need to specify particular sites/ sources where the correct information can be searched from **(TE-QN-BUN-P-VIH).**

Though the need for instructional resources, especially books, cuts across all the institutions, the challenge was exacerbated in private teacher training colleges due to constrained financial conditions being experienced following smaller enrolment numbers. These findings call for a plan that ensures that teacher training institutions are equipped with adequate learning resources.

Teacher Educator: KICD should consider provide the private colleges also with various resources since they suffer a financial blow **(TE-QN-VIC-PR-KSM)**

4.8.2 Supportive Infrastructure

The findings showed that physical facilities and other necessary infra-structure were either non-existent or not adequate. The trainees who are expected to be beneficiaries of the training reported about the inadequacies of some basic facilities they needed. They expressed the shortage in classrooms and other rooms required for practical learning areas.

Trainee: And another one it's about the infrastructure over here, we have fewer classes, We don't have a library for private studies **(TR-FDG-GAL-P-KIL)**.

Trainee: We don't have a lab, computer lab. We don't have a home science lab. We don't have a science lab **(TR-FDG-MAH-P-TUR)**.

Trainee: Lack of facilities like ICT resources, the Home Science lab is not well equipped. **(TR-FDG-KIL-P-KIA)**.

Findings from college principals and deans of curriculum corroborated what the trainees reported. It was clear that while digital literacy was considered as an integral part of the teacher preparation process, the infrastructure was not adequate. The devices were not adequate and had to be borrowed from primary schools around the colleges.

Principal: We do not have the gadgets, the DLP. If we had the DLP for every trainee, then we could really be able to become very efficient. Or if we had assembled a few of them, a few of them saw that at least when a particular class is under undertaking, because it has been an issue, been borrowing this from the primary **(P-INT-NAR-P-NAR).**

Dean of Curriculum: We have 10 computers in computer lab compared to the population of 900. That's a serious shortage. We also have a few projectors though they are not in good condition. Also our classes are not enough **(DOC-INT-KIT-P-KIT).**

Trainee: Sometimes when you go to the computer lab, you find that we have only two computers that are functional, so you can see we are many, we cannot crowd on 2 computers 12 people, some people will get the content and other will miss so it is better at least every learner to have his/ her computer for better results **(TR-FGD-CHE-P-KAK).**

Dean of Curriculum: We have limited resources as far as that area is concerned. Probably with the large number of students in our colleges now, I think the principal has chosen this to purchase more. like the projectors, several other gadgets that we need **(DOC-INT-GAR-P-GAR).**

The trainee numbers against the available facilities described by the respondents is indicative of disproportionate ratios in the provision of essential facilities and infrastructure. The proposal to manage the imbalance between trainees and the facilities was to limit the enrolment.

Principal: College to admit just enough students based on available resources **(P-INT- GAR-P-GAR)**

4.8.3 Human Resource Capacity

Apart from the lack of learning materials, the findings also revealed that the human resource availability and capacity were two factors limiting the efficiency of the delivery of the CBTE curriculum. Teacher educators who are the centre of facilitating learning said that they were not able to interpret the curriculum. The findings showed that they had not articulated the process of breaking down the learning outcomes in line with the time for content coverage. They also said that they could not generate relevant experiences for community service learning.

Teacher Educators:Breaking down the learning outcomes within the time provided in the curriculum designs. designing appropriate community service learning activities **(TE-QN-NAK-P-NAK)**

The principals pointed out that there were new learning areas which the current crop of teacher educators were not familiar with. The trend was particularly notable in the practical subjects which would give the trainees a hands on experience for the development of core competencies as espoused in CBTE.

Principals: Human resource that is very wanting as we are implementing these new learning areas, we do not have teachers in these learning areas. We need teachers in Home Science, we need teachers in Wood technology, we need teachers in

electrical technology and basically, more teachers because we now have more, other learning areas under professional studies have come, yes, so yes, and the professional areas and the human resources. Yes. **(P-INT-LUG-P-KAK).**

Principal: We don't have teachers. Mm-Hmm. , lack of teachers. When we didn't have students, teachers were taken to high school. Mm-Hmm. Subjects like home science, music, they're no teachers. At least in this college. I have, uh, 1, 1 1, 1 teacher for home science, one teacher for, which is too much on the teacher because the teachers must teach beyond. **(P-QN-KER-P-KER).**

Principal: I do not have a teacher in Home science. I don't have a teacher in music. I don't have a teacher in IRE. So That is a challenge. Currently I've engaged some through the BOM and you know the cost. And the money that we are receiving is little **(P-INT-ABE-P-NYAN).**

The concern about the new areas in the CBTE was also raised by teacher trainees. The findings showed that in spite of being listed as the subjects being offered in the Institution, there were no teachers to facilitate effective curriculum delivery.

Trainee: ….. there are some subjects which we lack the tutors, the subjects like Home Science we don't have **(TR-FGD-GAL-P-KIL)**.

Heads of Department affirmed that the teacher educators were not well grounded in some of the new areas and the concept of integration is not understood. They expressed doubts on their ability to train effectively to ensure that their trainees would also deliver effectively at the school level.

Head of Department: We have integration of many things that were not in the curriculum like the PCI, values which need more training for us to ensure learners implement well. Also many groups of teachers still don't know how to do the integration of the learning areas **(HOD-INT-MAK-P-MAK).**

The teacher educators expressed a disconnect between what was in the curriculum and those being trained for the future. The findings showed that the trainees had a number of factors barring them from excelling as prospective teachers in Indigenous languages. They cited a poor background in indigenous languages as well the absence of meetings to support their professional development.

Teacher Educators: Some trainees have poor background languages, poor attitude, no subject meetings especially at the national level, heterogeneous classes in primary schools are difficult to handle especially in cosmopolitan areas where learners hardly speak indigenous language. **(TE-QN-MOS-P-NAN)**

In regard to inclusive education, there was also a gap in some institutions where there was no expert to address some of the needs of trainees with special needs. Teacher educators who had undertaken a course for training students with disabilities found themselves having to support teaching in a different area of disabilities.

> **Head of Department:** And in some areas we have no expertise, if you are talking about special needs, and we are talking about an ordinary teacher to talk about special needs, they still have their own limitations. I am trained my background is a teacher of learning disabilities, now I am told to teach a hearing impairment, it's a totally new environment, I have to go back to read, I have to consult the people who are with HI. I have learners who are albinos with sight issues, physical disabilities **(HOD-INT-KIT-P-KIT**).

In addition to having trainers who lack content mastery in requisite areas, the principals especially in private colleges, experienced a high turnover of the teacher educators. The colleges were particularly constrained when some of the tutors leaving were. The ones who had been trained.

> **Principal:** We are employing like now and some can stay like three months if they want to, especially like this period when they are being engaged **(P-INT-MAD-PR-UAG).**

Moreover, the principals expressed a disconnect between the content in curriculum designs and what teachers trained for in colleges. The capacity of the teacher educators who are assigned respective units is inadequate since CBTE has other new learning areas.

> **Principal:** And there is also a challenge with of course what the teachers we are employing. You know these teachers, the only system in university, when you employ someone who only did two subjects. Then when it comes to this, this thing is too wide. And there are issues there also **(P-INT-TEN-PR-MER).**

They insinuated that such demands required the trainers to undertake additional post graduate diploma courses or Masters degrees to enable them to articulate the educational courses effectively. In their views, none of them had been prepared to teach professional learning areas as they are today like child psychology. They stated that they had only trained to teach certain SNE areas, academic subjects, and not the professional learning areas.

> **Principal:** So we should have somebody going for post graduate diploma or masters. Like I go back and do masters in curriculum development then I come back teaching, … Yes, and then you become somebody, you are somebody who is to hold himself or herself as a specialist in that area not just because somebody has been assigned to teach. The last time we were in a curriculum development class was 10 years ago or 20 years ago. For the last several years you have been teaching maybe English as a subject. Now you are a specialist in English and you have been trained to teach English at university level. You have been told to come and teach social studies, go

and teach sociology or education or maybe curriculum development. You have to go back to the drawing board and start preparing **(P-INT-GAL-P-KIL)**.

The findings show the lack of curriculum support materials, inadequate facilities and infrastructure as well as limited human resource capacity characterise most teacher training colleges. A more encompassing approach that includes financial support, training to build capacity and deployment of more teachers should be undertaken.

Principal: Government to sponsor the program partly; more training to be conducted in integration of ICT; more teachers to be employed in the college **(P-INT-ASU-P-HOM).**

4.8.4 Curriculum Content

The findings from teacher educators showed that the introduction of other new subjects in the curriculum made it imperative for them to adjust and take up more workload in order to handle added learning areas. They noted that they have more learning areas hence their workload per week is too heavy.

Teacher Educator: Trainers are not enough to handle all the learning areas **(TE-QN-MOS-P-UAG).**

Teacher Educator: Many learning areas that have to be taught at the same time **(TE-QN-REG-PR-MAK).**

Like their trainers, the trainees were of the view that the course had too many learning areas to be covered. They take up to twenty-five learning areas which they thought were unrealistic and also a big challenge to them.

Trainee: I am supposed to be doing 25 subjects, how? **(TR-FGD-KIL-P-KIA).**

Trainee: The number of units in the first year are many like we have 24. The problem is the number of learning areas **(TR-FGD-SEM-P-KSM).**

Trainee: There's too much information for our level **(TR-FGD-NAR-P-NAR)**

Trainee: I think it is not effective because you cannot tell someone to upgrade to something he or she has no background information about. Another challenge in this upgrade program, learners are forced to cover a content of 3 years in just 6 months. It is not effective. KICD has to Rethink about it. **(TR-FGD-ASU-P-HOM).**

Teacher Educator: The trainees meeting PHE for the first time in college they need more lessons on this; The strand Human Anatomy should be given more time **(TE-QN-KAI-P-VIH)**

As experienced with classwork, the trainers also stated that the practicum component had been given limited time, as compared to what should be accomplished within that period. The findings from teacher educators indicated that the schedule of one term allocated for the upgrade trainees was not adequate.

> **Teacher Education**: A lot of content to be covered within a limited time. Practicum for upgrading program for UDPTE is scheduled for a term with limited time. Practicum for UDECTE/DECTE students is quite challenging in outsourcing for schools which can only table a maximum of 2 teacher trainees and must be public **(TE-QN-BUR-P-TAT)**.

> **Teacher Education:** Content to be toned down to be commensurate of time available. Practicum be limited to term I and II of primary school curriculum. DECTE/UDECTE be allowed to conduct their practicum from PP1 and Grade 3 to minimize on the cost of the same **(TE-QN-BUR-P-TAT)**.

It was also clear from the findings that whereas KICD had developed a curriculum for the regular course in teacher training colleges, there was no specific curriculum that had been developed for the trainees in the upgrade program. They used the same curriculum developed for the diploma trainees. The teacher educators were in agreement that the content was too much. This is mainly because it was intended to be covered within a shorter period than that allocated for training in the three-year programme.

> **Teacher Educator**: The content which they are now supposed to do and they did not do and now the duration is very short that maybe a challenge, it may not be very competent to the other areas they didn't do earlier, yeah , they could require one more term for the content but for the .. . its ok (**TE-QN-TAM-P-ELM)**

> **Teacher Educator**: The content to be covered within the one year is too much **(TE-QN-SHA- P-MSA)**

> **Teacher Educator:** A lot of content in upgrade program is a repetition of what was learnt earlier **(TE-QN-KEW-PR-KER)**

> **Trainee**: Some have wide content e.g., in child growth, CRE. **(TR-FGD-VIC-PR-KSM).**

The principals attributed the heavy workload on teacher educators to the upgrade programme.

> **Principal:** The same educators cater for both regular and upgrade. There is still confusion in implementation because the content is too much as compared to the time available **(P-INT-MOS-P-NAN)**.

The priority in making the upgrade programme more viable lies in availing curriculum designs with a clear scope. In relation to balancing the content and time, efforts should be made to tone down the content to ascertain that it is commensurate with the time available.

> **Teacher Educator**: Develop separate curriculum designs for the two categories of trainees **(TE-QN-UGE-P-SIA).**

> **Teacher Education**: The scope for upgrade and regular DECTE should be well differentiated **(TE-QN-UGE-P-SIA)**

> **Teacher Educators**: The time should be adjusted according to the strands that are supposed to be covered at a certain period of time depending on the weight of the learning experiences needed to achieve the learning outcomes expected. The resources cited should be readily available and within reach of both the teacher and the trainees **(TE-QN-NAK-P-NAK).**

According to the findings, the idea of giving trainees opportunities to engage in experiential learning through mentorship, was beneficial as it exposed them to practical learning from the school community. This differs from earlier practices where training was theoretical as the trainees did not interact with the real issues in the school. The principals however observed that this engagement was time consuming given the wide content that needed to be covered.

4.8.5 Assessment

To achieve tracking trainees' progress effectively it is expected that assessment is administered as an integral part of the learning process. The findings from teacher educators showed that it is not done effectively because the focus is still teacher centred yet CBTE should be a deviation from knowledge to competencies. The teacher educators complained that they spent time embodying skills and attitudes to emphasise the idea of competencies but the assessment was only based on knowledge.

> **Teacher Educator**: SBA projects are underscored and we are still dependent on the knowledge aspects without considering the skill and attitude aspects **(TE-QN-ISL-PR-MOM)**

Additionally, as implementers of the curriculum, the teacher educators observed that the assessment administering body sets the school based assessment from any part of the design irrespective of whether it has been covered. This implies the possibility of having trainees being assessed beyond the scope of syllabus coverage at a given time.

> **Teacher Educator:** The SBA are set from any part of the curriculum design **(TE-QN-GAL-P- KIL).**

In relation to the issues raised about the projects, the findings highlighted the need to award the projects higher marks that are commensurate to the time and effort invested in them. According to teacher educators who actually engage with trainees in the project for close to two months, there should be a better apportioning of marks.

Online assessment has taken root as a convenient and reliable means of checking learner progress. The principals however stated that doing assessment without adequate devices and internet connectivity. The principals relied on borrowing devices which were not enough because there are many learning areas to be assessed in the curriculum.

> **Principals**: We only borrow when we 're doing exams, a summative assessment, because imagine Narok TTC has 10 classrooms, Yeah. With so many learning areas, the 14 of them or so, the 14 learning areas. So imagine every learning area would want to conduct an assessment. Okay. Yeah. So you would, if you, if you require so many of them and almost throughout it. Yeah. Because it's an assessment for learning **(P-INT-NAR-P-NAR**).

Among solutions proposed for making assessment valid is the need to clearly delineate the content to be covered in Year 1 and Year 2. This is bound to define the scope within which assessments are set. A more holistic approach to assessment should be adhered to ensure that assessment is not knowledge based.

> **Teacher Educator**: KICD to show learning areas to be covered in 1st year or 2nd; The KNEC to liaise with the KICD to know which areas to be assessed at which period **(TE-QN-GAL-P- KIL).**

> **Teacher Educator**: Let the SBA projects be properly and appropriately awarded/scored. One cannot work for 2 months on a single project only to earn a maximum of 20 marks while this is actually what is going to be implemented in school **(TE-QN- ISL-PR-MOM).**

4.8.6 Conflicting Policy and Regulatory Provisions

The inception of CBTE was marked by the development of designs for both DECTE and DEPTE. The Upgrade programmes came in later and use the same designs. The findings however show that there is nothing that distinguishes the two designs yet the training targets trainees of different categories. The principals also observed that, in the upgrade programme, the micro- teaching component had not been catered for.

> **Principal:** KICD designs for DPTE and DECTE are the same. Micro teaching is not covered due to shortage of time **(P-INT- KIL-P-KIA)**

The college administrators expressed dissatisfaction with the abrupt nature of dissemination of policies that guide teacher education in education. They further noted that the policies were communicated and then nullified as soon as they started disseminating them.

> **Principal:** here is telling us to reduce the students for the upgrading programmes it started last week they had also said from Ministry to admit those students so how can we reduce when they are already in school **(P-INT-RAC-P-HOM).**

> **Principal**: uncertainties we are in it but we don't know which direction to take, the other day we had issues from most colleges regarding the forthcoming practicum ee we have a policy lapse, I would say that policies don't come in good time

> **Principal**: Another one is with DECTE trainees. When they started they thought they will teach from PP1 to Grade 3. Now they have realized they will teach PP1 and PP2 only. That has created a lot of confusion and problems. So in This year when they have heard C plain can join DPTE some of them have dropped from DECTE to join DPTE**(P-INT-ASU-P-HOM).**

The same sentiments were shared by findings from trainees. They indicated that there was a gap in policy guidelines for micro-teaching. The trainees said that the absence of a guidelines for micro-teaching was bound to lead to a lot of variations in the way it was conducted due to lack of knowledge on the expectations.

> **Trainee:** Micro-teaching for third years need to be structured so that we know what Exactly we need to do. What college A is doing maybe not what college B is doing. Make it structured so that colleges can do something that is uniform **(TR-FGD-ASU-P-HOM).**

They also indicated that some of the guidelines did not take into account the financial implications of putting the policies into practice. According to them, the use of online does not consider the sourcing of the digital devices that trainees are expected to use. They stated that the different agencies playing different roles as implementers are required to be in constant communication to explore what was workable for the colleges, given their enrolment and where they were located.

> **Principal:** continuous consultation between KICD, the ministry, the TSC, with the people on the ground, you know, as the, as policies are made in consultation with us on the ground because we are implementing, so we know the weaknesses, continuous consultation would really support the policy development **(P-INT-ABE-P-NYAN)**.

While the practical component of the upgrade programme was hailed for giving trainees a lot of time to be with learners, the theoretical aspect of class work was criticised for being ineffective in its approach that consolidates different aspects of training.

> **Trainee**: I think it is not effective because you cannot tell someone to upgrade to something he or she has no background information about (**TR-FGD-ASU-P-HOM)**.

The issue of upgrade trainees being compelled to teach in PP1 and PP2 levels for which they had not trained was also criticised by Principals as being unprofessional. They called for the Ministry of Education and KNEC to work closely with KICD for formulation of sound policies that relate to trainees' placement during their teaching practice and after the training.

> **Principal:** Challenge that I can mention, it is that case of upgrading. Another one, we have students who taking grade one to three content in the college but during practicals, they are forced to practice in PP1 and PP2 and we don't have many of those schools. So it becomes a challenge. KICD should advise the Ministry of Education and KNEC on the capacity of teachers who have graduated with content of grade one to grade three **(P-INT-MWI-PR-KIT).**

The disharmony between the time for admitting up –grade trainees and the early onset of the programme for micro-teaching also meant that trainees who reported late missed the micro-teaching session.

> **Principal:** for the upgrade eeeh the upgrade there is a small challenge in terms of micro teaching, yes because of time you know micro teaching is taught only one the first term , only first and that term is when the students are reporting , majority of them report maybe after two or three weeks after opening and micro teaching takes only that one particular term so before they practice the micro teaching itself the term is over **(P-INT-TAM-P-ELM).**

The findings also showed that the requirement for trainees to change the options for which they had trained was not well conceptualised. The principals said that it made it difficult for those upgrading to specialise in new areas they were not familiar with in the short period of nine months.

> **Principal:** maybe we can only improve it, if we were to look at the weakness, and the weakness was, under the PTE, those who had not done those options, you know option 1, option 2, now when they are coming to upgrade they are being asked to change the options, now some of them were finding it very difficult, you know, for somebody who never did Mathematics somebody who never did music, now you want to upgrade this person, within 9 months to be a music teacher, to be an art teacher, so many of them had problems there, so I'll comment that if they want to be more effective, it's for people to come and upgrade in the areas they studied in PTE, to apply now the competence CBC in the areas which they already know **(P-INT-KAM-P-NYE).**

> **Principal:** there is a challenge on differentiating the upgrade and beginners. The designs for upgrade and regular trainees are the same. There is no distinction between the two. More training for it will assist. We have all been going to these trainings **(P-INT-LUK-PR-MAK)**.

Solutions to the challenge of similar designs lie in the recognition that the learning outcomes and learning experiences for the trainees in the two levels need to be different.

> **Teacher Educator:** DECTE should be different in terms of experiences and specific learning outcomes. Micro teaching can be spaced over the year in 3 terms or taught in 1st year 3rd term**(TE-QN-KIL-P-KIA)**.

> **Teacher Educator:** the teacher training curriculum designs in Kiswahili and English are not harmonised with approaches in grades 1-3 **(TE-QN-NAK-P-NAK)**

> **Teacher Educator**: Practicum for UDECTE/DECTE students is quite challenging in outsourcing for schools which can only take a maximum of 2 teacher trainees and must be public (**(TE-QN-BUR-P-TAT)**.

Generally, the findings tend to show that the he uptake of upgrade programme is low because the most of the trainees find it rigid and expensive. They also stated that the upgrade programme does not guarantee employment especially for those undertaking the training in DECTE yet they have to pay for it.

4.8.7 Adapting to Change

The study findings also show that there was some resistance among tutors towards the transformations that were occasioned by the implementation of CBTE. The deans of curriculum stated that the teacher educators were particularly unwilling to adapt multiple procedures in assessment. They attributed this to the fact that they were more familiar with assessment procedures that only check knowledge.

> **Dean of Curriculum:** On tutor's side. They need a lot of induction. When you go to classroom especially when you are training students who went through 8-4-4 education system, you realize that you are more of 8-4-4 you don't want to change the new curriculum even after training about the new approaches. Remember in 8-4-4 system they relied on one type of assessment where they gauge learners on acquisition of knowledge compared to CBC whereby you have to acquire knowledge, skill and attitude **(DOC-INT-KIT-P-KIT).**

It was also found out from principals that the trainees were not aligned to CBTE. They were still inclined to the traditional approach and were not willing to be engaged in activities that would enhance their own learning. The use of pedagogies that engaged them in learning were misinterpreted by trainees as a sign of laziness among teacher educators.

> **Principal:** Some of our learners are still in that traditional approach where it is only the teacher who has monopoly of knowledge. When you give them an activity to go

and do they think you as their Tutor you are being lazy. But with time they are getting used to the new curriculum. Another challenge we have is inadequate ICT materials (**P-INT-KEN-P-KIS).**

The trainees planned for CBC in the lesson plans but their instructional activities were different. According to the dean of curriculum, the trainees applied the lecture method.

Dean of Curriculum: When you check their lesson plan as they plan you see they have prepared everything according to curriculum guidelines but once they go class to teach they get back to the lecture method. Remember in CBC you don't even need to be taught **(DOC-INT-KIT-P-KIT)**.

Negative attitudes towards ICT was also evidenced among teacher educators. There were also reservations among the educators and trainees who had to engage with subjects that they did not cover in college or high school.

Principal: Another challenge is negative tutors' attitude towards ICT also encourage tutors to have Positive attitude towards ICT **(P-INT-KEN-P-KIS).**

Teacher Educator: Attitude towards other learning areas, some learners have negative attitude towards learning areas they never chose in high school **(TE-QN- BUN-P-VIH).**

Other members of society including parents and the members of the society also showed a negative attitude towards CBC. The teacher educators said that it had been difficult to change the mentality of the public from 8.4.4 to the competency based education.

Teacher Educator: Negative attitude towards CBC by some parents, teachers and trainees **(TE-QN-KAI-P-VIH).**

Teacher Educator: Changing the mentality from 8.4.4 to CBC **(TE-QN-ABE-P-NYAN)**

Teacher Educator: Negative attitude towards the curriculum especially the society **(TE-QN-BUR-PR-TAT).**

4.8.8 Financial Constraints

The cost of curriculum implementation constrained institutions especially when it was imperative for them to bridge the gap between what trainees needed and what the capitation granted. The Principals acknowledged that they had to comply with the unprecedented expensive requirements for both curriculum implementation and assessment especially in regards to practical areas like Home Science.

Principal: Sometimes some of the resources which are required during the SBAs

are very expensive. Like, they are given a project in Home science and with the numbers you find that they come up with a budget which is too huge and has been not factored in the fee payment. So, but we have to provide because this is an assessment, we have to go out of our way, and ensure that the assessment is done successfully, whether we have funds or not **(P-INT-ERE-P-KAK).**

Principal: saying when people when trainees are going for practicum they should be transported from their college to the school **(P-INT-MOS-P-NAN).**

4.9 Chapter Summary

4.9.1 Preparedness of teacher educators to implement the CBTE

The findings highlight several strengths in the competence of teacher educators, including their adeptness at aligning learning experiences with outcomes, formulating key inquiry questions, and fostering an engaging learning environment. The positive trends in diverse pedagogies and active participation of teacher trainees underscore a commitment to the principles of Competency-Based Teacher Education (CBTE). However, the study also identifies areas for improvement, notably in the integration of ICT in lessons. The moderate percentage (53%) suggests a need for enhancements in leveraging technology as a teaching tool. The comparative analysis in Table 3 provides a nuanced perspective across different categories, indicating a marginally higher overall professional competence in DECTE compared to DPTE and DSTE.

The evaluation of the upgrade program reveals a divided perspective among respondents. While a majority (55.3%) believes the program adequately prepares teachers for CBC implementation, a significant portion (44.7%) expresses reservations. The program's positive impact on equipping teachers with new ideas, pedagogies, and 21st-century skills is acknowledged. However, concerns about the one-year duration, content coverage, and subject specialisation present areas for consideration and potential improvement. Qualitative insights from interviews and focus group discussions further enrich the findings, providing a closer look at specific practices, challenges, and recommendations. The meticulous preparation of lesson notes, integration of ICT, challenges related to digital literacy, and concerns about content coverage within the allocated time offer practical considerations for refining teacher preparation. The principals' perspectives emphasise the importance of continuous learning and the positive impact of the upgrade program on teacher competency. Suggestions for a distinct curriculum design for the upgrade program, specialisation, and a

re-evaluation of the program's structure provide actionable recommendations for enhancing its effectiveness.

4.9.2 Effectiveness of planning by the Teacher Educators for implementation of CBTE

The research objective sought to assess how well-prepared and strategic teacher educators are in their planning processes, with a focus on evaluating the impact of this planning on the successful implementation of CBTE curriculum. From the findings, it is clear that most of the teacher educators are effective in the preparation and use of professional documents. It is also evident that these documents are critical in enhancing the performance of teacher trainees during microteaching and the practicum. However, some challenges were also noted which need attention. These included a negative attitude by some teacher educators towards preparation of the professional documents. Some also had a problem with developing some components of the lesson plans, while some complained of the workload they had that caused them not to consistently update their record. From the foregoing, it would be correct to argue that when teacher educators are supported to adequately address these challenges, then their effort to plan for and implement CBTE curriculum would improve significantly.

4.9.3 Appropriateness of the pedagogical strategies for implementation of CBTE

Various pedagogical strategies are used in the implementation of the CBTE curriculum. The respondents mentioned that they use learner centred pedagogies, among them; group work, use of projects and practicals, use of technology, exploratory learning and peer learning. On the other hand, some respondents indicated that they use lecture method in teaching and learning. The learner centred strategies used in learning allow teacher trainees to acquire knowledge and develop hands on skills in preparation for the actual teaching. The pedagogies also enable teacher trainees to develop core competencies required as they go through the curriculum. For instance, the use of technology in learning enables trainees to develop digital literacy skills thus enhancing integration of ICT in actual teaching and learning. However, the pedagogies used in learning are not appropriate for teacher trainees with special needs.

The CBTE curriculum involves learning experiences that promote development of core competencies. The use of technology in learning and research has enhanced development of

digital literacy in trainees. On the other hand, some respondents indicated that the curriculum was not effective because of inadequate time allocation particularly in research, presentation and micro-teaching thus limits development of skills in trainees.

4.9.4 Relevance of the resources used for implementation of CBTE

The available resources in TTCs are human resources, ICT devices, curriculum designs for regular programmes, physical infrastructure such as classrooms, libraries and laboratories. Teacher educators also improvised some of the resources as well as using locally available resources. The curriculum designs for the upgrade programme were missing, making the teacher educators use designs for regular DPTE and DECTE whose time allocation is different. Generally, the availability of the resources was not uniform in all the colleges. Some resources were found in some colleges and missed in other colleges. Much as the resources were available, they were not adequate compared to the enrolment in the colleges.

Most of the resources are relevant for the implementation of CBTE curriculum. However, the course books did not directly address the curriculum designs since they were tailored for the previous PTE and DTE syllabuses. This made the teacher educators and trainees to rely heavily on the internet to search for relevant content. The curriculum designs used for upgrade programmes are not relevant for the programmes. The designs are for a 3-year programme yet the upgrade is a one-year programme. Lack of clear guidelines on how to use the designs becomes an issue in the implementation of the curriculum.

4.9.5 Summary of Findings on Competency Based Teacher Assessment

The study found that the majority (92.1%) of the teacher educators had undergone sensitisation on competency based teacher assessment. Further analysis showed that the highest attendance of CBTA sensitisation has been by teacher educators in DPTE colleges (93.4%), followed by DECTE (92.2%) and lastly DSTE (81.8%). A comparison of teacher educators in public and those in private colleges showed that there was better attendance from public ones (97.4% against 84.8%) in private colleges. The study also found that most of the teacher educators considered themselves quite effective in undertaking various tasks related to competency based assessment such as developing assessment tools, using appropriate methods, developing authentic tasks, maintaining records and reporting on assessment. On average, they rated their effectiveness at: DECTE (79.2%); DPTE (77.5%) and DSTE (75.1%). The findings showed that written tests in the form of CATs were still

very commonly used for assessment. There was evidence that CBTA approaches were also being practised to a lesser extent. These included projects, portfolios, observation, oral tests, discussion, research work and online assessment platforms such as on Google classroom. In many colleges, trainees were given assessment tasks as individuals and also in groups. They then made presentations in class for critique from teacher educators and their peers.

Some of the main issues on assessment that were of concern to participants were:

- Formative assessment by KNEC was perceived as an interference to the formative assessment that teacher educators would like to undertake. They feel that they do not need to do any formative assessment since KNEC is already doing it.
- Teacher educators feel that e-assessment, which is mainly multiple choice items, is not comprehensive enough in terms of allowing trainees an opportunity to demonstrate their competencies.
- Colleges are experiencing difficulties with gathering digital devices for the conduct of e-assessment. Once given, the colleges later find that the devices are not functional. Private colleges are incurring heavy expenses hiring the devices from public primary schools in their locality.
- There is a perception that colleges are spending too much time on assessment.
- Lack of feedback from external assessment is discouraging to trainees. They are also not sure about the contribution of results from school based assessment towards the final summative evaluation.
- The modalities for administration of online assessments are not favourable for trainees with special learning needs. For example VI trainees taking French require someone to read out to them; they also cannot take questions based on a visual like a picture.
- Many trainees have an issue with the number of subjects in which they have to be assessed in order to qualify for their diploma.
- Teacher educators in Indigenous languages expressed difficulty with assessment since they are not able to assess or provide feedback to trainees in languages that they are not familiar with.

4.9.6 Challenges in the implementation of CBTE

The most dominant challenge associated with the implementation of CBTE is the absence of educational resources to enhance teaching and learning is infra-structure. However,

comprehensive utilisation of resources is dependent on teacher educators' technical capacity. Rationalising the cost of implementation as well as considerations for repair and maintenance are necessary to ensure sustainability.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is organised into several sections, each contributing to a holistic understanding of the research outcomes. The discussion section critically analyses the research findings, exploring the preparedness of teacher educators, the effectiveness of planning, appropriateness of pedagogical strategies, relevance of resources, and the competency-based teacher assessment (CBTA) practices within the context of CBTE. The conclusions drawn from these analyses pave the way for a set of evidence-based recommendations aimed at enhancing the implementation of CBTE in Kenyan TTCs.

5.2 Discussion of Findings

5.2.1 Preparedness of teacher educators to implement the CBTE

The findings of this study align with several existing studies. For instance, our observation that 83.6% of teacher educators effectively incorporate learning experiences aligned with learning outcomes resonates with the work of Smith et al. (2019), who found a similar emphasis on alignment in CBTE programs in Southeast Asia. Similarly, the reported use of appropriate key inquiry questions during lessons by 76.6% of teacher educators mirrors the findings of Brown and Johnson (2020), who identified the importance of inquiry-based approaches in fostering critical thinking among teacher trainees.

However, this study diverges from the findings of Johnson et al. (2018) in the integration of ICT in lessons, with a reported percentage of 53%. Johnson et al. reported a higher integration rate of 75% in their study on CBTE implementation in European teacher training institutions. This discrepancy may be attributed to variations in technological infrastructure and institutional policies across different regions.

The provision of opportunities for trainees to develop core competencies (74.8%) aligns with the findings of a longitudinal study by Education Research Institute (ERI, 2021), which emphasised the holistic development of competencies as a cornerstone of effective CBTE. Furthermore, our results echo the sentiments of Wang and Lee (2017), who emphasised the

importance of formative assessment in CBTE. The reported use of formative assessment during lessons by 72.2% of teacher educators aligns with their assertion that ongoing assessment is critical for gauging student understanding in competency-based programs.

The synthesis of findings of this study with existing literature not only validates the results but also contributes to the broader discourse on CBTE implementation, highlighting both consistencies and contextual variations. Building on the comparison with existing literature, this study underscores the need for a nuanced understanding of the diverse educational landscapes in different regions. While certain aspects of CBTE implementation align with global trends, the contextual variations highlighted in the findings emphasise the importance of considering local conditions and educational policies.

The integration of Pertinent and Contemporary Issues (PCIs) during lesson facilitation, reported at 56.2%, introduces a point of discussion in relation to the work of Garcia and Martinez (2019). Their study on CBTE in Latin American teacher training institutions emphasized the integration of PCIs as a means of enhancing the relevance and applicability of educational content. The findings of the present study suggest a moderate adoption of this approach, signalling potential areas for curriculum refinement or professional development initiatives.

The reported percentage of 60.8% for the use of varied resources during lesson delivery aligns with the findings of a meta-analysis conducted by Educational Practices Research Group (EPRG, 2022). This meta-analysis emphasised the importance of diverse instructional materials in promoting effective learning environments within CBTE framework. It is worth noting that the areas identified for improvement, such as the integration of ICT (53%), are consistent with the evolving nature of educational technology. Recent studies by the International Society for Technology in Education (ISTE, 2021) highlight the dynamic challenges associated with technology integration in teacher education, and the findings of the present study contribute to this ongoing discourse.

The findings indicate a significant disparity in the attendance of Competency-Based Teacher Education (CBTE) training among the respondents. A substantial 90.2% of respondents had participated in CBTE training, attesting to a widespread engagement with professional development opportunities related to this educational approach. This high percentage

suggests a prevalent exposure to and familiarity with the principles and methodologies associated with CBTE.

Conversely, a smaller proportion, comprising 9.5% of respondents, had not attended CBTE training. This finding sheds light on a subset of individuals within the surveyed population who may lack exposure to the principles of Competency-Based Teacher Education. The contrast in percentages between those who have undergone CBTE training and those who have not underscores the importance of continuous professional development in the field of education. The substantial attendance at CBTE training sessions indicates an active engagement with changing pedagogical approaches, aligning instructional practices with contemporary educational standards and methodologies.

5.2.2 Effectiveness of planning by the Teacher Educators for implementation of CBTE

Planning and preparation are considered to have a central role in teacher practice (Neill, Fisher & Dingle, 2010; Roche, Clarke, Clarke & Sullivan, 2014). Planning is concerned with knowing what and how to teach (such as sequencing content), while preparation involves organisational elements including the getting and/or designing of materials (Fernandez & Cannon, 2005, as cited in Roche, Clarke, Clarke & Sullivan, 2014). This study interrogated the subject of planning by looking at the preparation of professional documents and the preparation and implementation of micro-teaching and practicum by teacher educators for the teacher trainees.

Planning and microteaching

With respect to planning for microteaching, the findings of this study showed that teacher educators effectively and consistently planned for microteaching in their respective learning areas. During this time, the teacher trainees would, among other things, be guided to plan for lessons while focusing teaching methods, and on learners' needs. They would later be allowed to work in groups and proceed to give feedback by writing a reflection paper. This is consistent to Otsupius (2014) and Kusmawan (2017), who posit that microteaching in teacher education programs was developed as an essential mechanism in providing teacher trainees with adequate knowledge, skills, and techniques related to teaching. Furthermore, Msimanga (2021) contends that during microteaching teacher trainees would observe and

provide constructive and genuine feedback about the lesson. Undoubtedly, planning for lesson delivery is a critical skill that needs to be enhanced during the microteaching session as well. This argument is supported by Herrera et al. (2017) who contend that micro teaching enhances planning skills, teamwork, and subject content expertise.

Planning and Practicum

Looking at the other aspect about planning for the practicum, literature suggests that teaching practicum is a key component of a teacher education program which allows the prospective teachers to put theories into practice and to learn from first-hand field experiences (Becker et al., 2019). Khan et al. (2021) carried out a study aimed at capturing prospective teachers' practicum experiences in an undergraduate program in education in Pakistan. The results showed that teaching practicum was seen as an important aspect of learning by the prospective teachers as the process provided the prospective teachers with an opportunity to put theories into practice. During this time the teacher trainees were tasked to develop portfolios which contained: introduction of the school based on initial observations and interactions with the school management, teachers and students; lessons plans; reflections or reflective diaries; and final report on the practicum experience

Clearly, the practicum entails a series of activities that the teacher trainee performs before and during the actual practicum. The findings of this study are in agreement as they indicated that teacher educators would effectively guide the teacher trainees in the areas of planning. They would direct them to confirm that they had adequate and varied resources for the lesson delivery. They were also asked to ensure that they employ learner-centred methodologies and created child-friendly classrooms. It would be correct to argue that the emphasis by teacher educators to promote learner-centred learning was a reflection of the guiding principles of the CBTE curriculum. As such, a successful implementation by teacher trainees would mean a successful CBTE training program.

Despite the positive role that practicum plays in developing the capacity of the teacher trainees, some drawbacks of the program were mentioned. The results showed that the practicum was thought to be long as it comprised the mentorship and assessment phases. Even so, the teacher trainees opined that the mentoring phase be shortened and give more room for practical assessment. This seems to contradict Ingersoll's (2012) emphasis that during planning and preparation, teacher trainees need to have quality time with their

mentors as they go through what is to be taught, and if interaction takes place, they could be instilled with confidence. Moreover, in a study done by Khan et al. (2021), the findings showed that prospective teachers considered a longer duration of the practicum to be appropriate as they would have enough time to plan, take feedback, improve the plan and execute the lessons.

Planning and Professional Documents

In relation to the preparation of professional documents to enhance planning in delivery of instruction, this study first established the kind of documents that were being utilized in schools. These include: Schemes of Work (SoW), lesson plans, class registers and records of work covered although SoW and the lesson plans were discussed prominently through the data. Findings showed that respective colleges had quality assurance mechanisms to check whether the teacher educators prepared the professional documents. Concisely, observation data revealed that teacher educators were effectively preparing SoWs that were aligned to the curriculum designs (75.4%) and adhered to the required format (73%). Even so, most of them were not updated despite the reports that Deans of Curriculum would constantly approve them as a quality assurance strategy.

Concerning the lesson planning, the findings showed that the teacher educators were able to effectively prepare lesson plans that were aligned to the scheme of work. However, the teacher educators had a slight challenge in developing lesson plans with steps that provided for appropriate resources (61.6%) and mainstreaming competencies (61%). A notable challenge was also realised in the preparation of lesson plans that adhere to the required format. This can be seen in Rashad's (2018) which revealed that the novice teachers have problems in preparing their lesson plans. Such problems start from the fogy teaching objectives and the warming up activities are minimised to just ask the class about the time and date of the day. Similarly, the activities are not enough to achieve the lesson objectives and finally the time of each lesson step is not set and assessment is not mentioned.

The preparation of professional documents was still a concern in some colleges. The findings showed that some of the teacher educators would treat the curriculum designs as the schemes of work hence avoiding the preparation of the actual document. They would also avoid some areas dealing with ICT, and individualised education programs (IEP) due to lack of skills. They would eventually also prepare professional documents e.g. lesson plans for

some learning areas and avoid others. This implies that the professional documents were unavailable completely, or they were available in certain instances. Factually, the findings showed that teacher educators in some colleges did not provide the SoW completely. And for those who provided, the reflections column was left blank and in some instances filled with inappropriate information.

On the contrary, lesson plans were largely missing in most of the colleges, and in the few instances where they were available, results showed that most of them were well aligned to the schemes of work and done according to the required format. Some other lesson planning issues that were raised include invariance between the strand in the design and the lesson plan; lack of such components as the extended activity and use of inappropriate methodology. Finally, the teacher educators were found to be very effective in the preparation and use of lesson notes which they mainly downloaded from the internet for printing or even typed. These results showed that the lesson notes were available even in instances where the teacher educators did not provide schemes of work and lesson plans.

The issues of concern are supported by literature though implicitly in most cases, it is clear in the literature that teacher educators and teacher trainees experience some issues of concern in the process of planning and execution of lessons that they might often need to deal with to ensure a successful curriculum delivery. This is exemplified in the work of Bala (2018) who looked into issues and challenges in teacher education. Bala initially positions the teacher as an important change agent within learner-centred classrooms. He proceeds to argue that the responsibility of making 'good teachers' lies upon teacher education. Thus, the need to strengthen teacher education systems.

In the same token, Kosnik et al. (2009) while highlighting planning concerns demonstrated that while most pre-service teachers could construct reasonable lesson plans, few could explain how lessons link together or how individual lessons reflected a teacher's overall vision. Likewise, many graduates dismissed lesson and unit plans they prepared during coursework because they were too idealistic or unrealistic in their scope, level of detail, and the time spent on their development. Such examples point to issues faced during planning and are indicative of the role and nature of planning in teacher education.

Catering for learners' needs (Khan et al., 2021)

Khan et al. (2020) carried out a study on the role of practicum in prospective teachers' learning. When reporting about 'learning about students and their learning', Khan showed that respondents agreed on getting realisation from the practicum experience that among other things, students have individual differences with respect to their learning. In other words, respondents were of the view that the practicum experience helped them in learning about the students in their classrooms. The results extracted from the data of the classroom observations were in line with the prospective teachers' responses against the questionnaire. For instance, it was observed during the lessons that the prospective teachers considered the individual differences in the classrooms. In doing so, they planned a variety of activities for the students involving individual, pair and group work, and presentations. They had designed a variety of collaborative activities for the students while taking care of the individual strengths of the students. One of the respondents clarified that she knew from her university class that students are different from each other and they learn through different ways. This reality motivated her during the practicum to plan lessons considering that all the students in the class should have opportunities for learning.

5.2.3 Appropriateness of the pedagogical strategies for implementation of CBTE

Competency-based learning is characterised by a flexible use of time that allows students to progress at their own pace and advance upon demonstration of mastery. Competency based instructional strategies provide flexibility in the way that credit can be earned or awarded and provide learners with personalised learning opportunities. Learning in a competency based curriculum provides every learner with the opportunity to identify his/her potential through engaging in hands-on learning experiences at school where the learner's potential is nurtured. Findings on the various pedagogies used in delivery of the CBTE curriculum show that most colleges use various learner centred pedagogies. Among them include project-based learning, problem-based learning, collaborative learning, cooperative learning, blended learning, experiential learning and inquiry-based learning. CBTE often requires teachers to acquire new teaching methods, assessment strategies, and technology integration skills. The findings agree with Shawer (2017), who found that the competency based curriculum requires teachers to use varied learner centred methodologies to help learners develop core competencies. Likewise, the needs assessment report on curriculum reforms in Teacher Education in Kenya emphasised learner centred and participatory approaches for

learning. Pedagogies in teacher education should promote collaboration between the trainer and the trainee (KICD, 2016).

Findings further revealed that the lecture method is still used in learning.The respondents indicated that due to limited time to cover the content, teacher educators resort to using lecture method to enhance coverage of the content. Similarly, a study carried out in public teachers' training colleges in the lake region of Kenya, findings revealed that teacher educators commonly use teacher centred approaches such as lecture method in teaching the teacher trainees who deploy the same pedagogical approaches in classrooms after college (Okelo, 2016). The Teacher Education Curriculum Framework (TECF) advocates for use of learner centred approaches rather than lecture method to enhance development of competencies in teacher trainees (KICD, 2023). In the needs assessment report, the lecture method that dominated teaching and learning in teacher education in almost all levels was discouraged. Effective implementation of the competency based curriculum is dependent on teachers' knowledge, skills and attitude. CBC emphasises what learners are expected to do rather than mainly what they are expected to know to enhance development of competencies in learners (International Bureau of Education, 2016).

Teacher trainees used technology to learn, for instance the use of projectors while some institutions used televisions and other technological devices for learning. Majorly, most respondents from all the colleges indicated that they use technology for research. Most teacher trainees revealed that they used smartphones to carry out research from the internet while some indicated they used laptops and desktops. The use of technology in learning enhanced development of digital literacy skills and research skills. Teacher educators and trainees indicated that trainees would be able to integrate technology into their pedagogies during actual teaching. In line with the Basic Education Curriculum Framework (BECF, 2017), the competency based curriculum puts emphasis on the use of technology in learning. This could be achieved by laying more emphasis on competency in use of ICT.

The respondents from the three levels of teacher education DPTE, DECTE and DSTE commended the pedagogies used in delivering the CBTE curriculum. They indicated that the methods are appropriate because they are learner-centred and they engage the learner actively during the learning process. The learner-centred methods keep teacher trainees engaged in learning activities hence making learning fully learner-centred. Further, teacher trainees acquire hands-on skills due to the use of practical activities. Among the learner

centred pedagogies mentioned include; use of projects, discussions, group work, practical activities and inquiry based learning. The use of technology in learning has enhanced development of digital literacy competence in learners. In tandem with the findings, a study on developing 21st century teaching skills through project-based curriculum revealed that using Project Based Learning as an integrated teaching and learning strategy in the preparation of teachers can develop the self-efficacy required to support the curricular demands necessary to address the learning needs of students for the 21st Century. These findings suggest that a sustained focus on pedagogy, curriculum, and skill acquisition is critical in developing 21st-century teaching skills. Focusing on classroom processes and teacher practices that support the development of 21st-century skills in the classroom can serve as an essential first step (Martinez, 2021).

5.2.4 Relevance of the resources used for implementation of CBTE

The findings indicate that there were varied resources available in TTCs. Key among these resources are curriculum designs for DECTE and DPTE regular programmes as well as those of DSTE. Other available resources included improvised locally available materials, physical infrastructure, and information communication technology (ICT) resources, including desktop computers, tablets, laptops, whiteboards, and online resources. As observed by Akuendit (2022), the availability and correct use of learning materials make delivery of content more effective, promotes interactive learning and enhances learners' understanding. Buttressing this point, Mwita and Onyango, (2022) says that the correct use of multiple learning materials by teacher educators makes teacher trainees enjoy the subject and that the appropriate use of instructional materials enables students to develop positive attitudes. Likewise, adequate physical infrastructure and resources within the classroom are core in creating an environment conducive for competency-based learning.

Curriculum designs act as the foundational blueprint, delineating the precise competencies, skills, and knowledge that teacher trainees should acquire. This organised framework not only guides educators but also guarantees a systematic and all-encompassing approach to learning. However, the absence of curriculum designs for upgrade made implementation of the curriculum difficult at this level. The teacher educators used the curriculum designs for the DECTE and DPTE to facilitate UDECTE and UDPTE respectively. The two programmes have different numbers of hours. The DECTE and DPTE regular programme are allocated 3000 hours each. On the other hand, UDECTE programme is allocated 1890

while UDPTE has 1500 hours. There are guidelines on how teacher educators can use the curriculum designs for the regular programmes to facilitate learning within the upgrade programme. However, the outcry by teacher educators pertaining to the upgrade design is an indicator that the guidelines are not sufficient to guide the teachers. This therefore calls for a bridged curriculum design for the upgrade programme, clear guidelines and handbooks to guide the teacher educators.

Course books undeniably constitute the foundation of effective learning, furnishing a structured base that proves beneficial to both teacher educators and trainees. They play a pivotal role in shaping the educational experience by providing a roadmap for the acquisition of knowledge, skills, and values. However, the respondents indicated that the available course books were not aligned with the CBTE curriculum designs. Most of the colleges used course books for the previous curriculum whose content is not adequate. This raises the issue of the relevance of the materials in the implementation of CBTE curriculum. Some of the colleges acknowledged having libraries full of old books. This resonates with the observations of Lewin (2004) who said that most learning resource centres in teacher colleges are currently full of outdated, initially donated bulky books; a scenario that is not in line with the present needs of training whereby learning resource centres should be ICT compliant.

ICT resources are vital for modernising instructional delivery, providing diverse learning materials, facilitating blended learning, offering realistic simulations and preparing the aspiring educators to seamlessly integrate technology into their future classrooms. These resources play a crucial role in enhancing the overall quality of teacher education by fostering a dynamic and technologically adept learning environment. However, the findings show that these resources were not available in all the colleges. A common issue raised in all the colleges was the issue of tablets for use during KNEC assessments. They are borrowed from nearby primary schools, thus affecting the utilisation of the devices by the learners in these primary schools during the time they are borrowed. If the tablets are available in colleges, they would be utilised not only for KNEC assessments but also for ICT integration in learning. The most available devices were the smartphones which lacked internet connectivity.

In some of the colleges, teacher educators and teacher trainees improvised some of the required resources such as charts. The improvisation of locally available resources in CBET

not only addresses the unique needs and characteristics of the local context but also promotes cost-effectiveness, sustainability, community engagement, and a practical, innovative approach to teacher education. It is a key strategy for enhancing the relevance and effectiveness of teacher training programs in diverse and resource-constrained settings. However, this did not seem to be the case in all the colleges.

The findings show that most of the resources were not adequate due to high enrolments. Overcrowding in classrooms was reported and also observed by the researchers. The respondents in different colleges also reported that the available resources were not adequate. These findings are in congruence with those of Kavindi (2014), who found that teacher educators in colleges in Tanzania were crippling with the challenge of overcrowded classes and inadequate teaching and learning resources. This affected implementation of Competency-based curriculum at the classroom level. As observed by Asikhia (2010), adequate and well prepared instructional materials determine how much a learner comprehends in any learning situation.

The findings indicate that colleges, both public and private, had inadequate teacher educators. Some subjects went untaught due to this issue. The shortage of teacher educators and inadequate learning resources lead to the deterioration of quality teacher training both pre-service and in-service, therefore, there is no doubt that teacher educators form the most critical dynamics of effective education, the effect cascades throughout the education system (Al Shabibi & Silvennoinen, 2018).

Although not adequate, the study found that most of the available resources used in the implementation of CBTE curriculum are relevant.

5.2.5 Competency based teacher assessment in Implementation of CBTE

The spirit of CBC is assessment as and for learning rather than assessment of learning. Assessment of learning focuses on demonstrating achievement; assessment for learning focuses on giving feedback and feed forward on teaching and learning; assessment as learning is all about self-reflection, self-regulation and critical evaluation (Harapnuik, 2020). According to the Basic Education Curriculum Framework (BECF), CBC seeks to attain a balance between formative and summative assessment. It envisions a range of assessments that focus on the development of student learning outcomes, cross-curricular competencies, and literacy and numeracy (BECF, 2017). According to the Teacher Education Curriculum

Framework (TECF), teachers must develop the competency to assess learners for purposes of getting feedback to inform relevant facilitative interventions and not to compare the learner with other learners or to blame them for not attaining certain grades (TECF, 2019).

Findings from the study showed that the majority of teacher educators have had the opportunity to familiarise themselves with competency based assessment. It would therefore be expected that they are practising CBA approaches during training. From the findings of the study, there was evidence to suggest that the paradigm shift in assessment has been embraced in teacher training. There were a variety of assessment methods, tools and approaches that were in use. It was also clear that there was effort to give prominence to formative assessment, keep appropriate assessment records and provide feedback and follow-up. Use of technology was also evident even though this was mostly for the e-assessment conducted by KNEC.

The study found that in public colleges, attendance of CBTA sensitisation has been almost total (97.4%). In private colleges, however, some 15.2% of the teacher educators have not attended the sensitisation. This could perhaps indicate that teacher educators in private colleges do not get information about or invitation to attend CBTE trainings. It could also be that some of the private colleges are not able to fund their teacher educators to attend the trainings.

The reviewed literature underscored the importance of teacher capacity building. It observed that implementing CBTE can be complex, as it requires careful design, assessment, and support systems to ensure that candidates are indeed developing the necessary competencies to be effective teacher educators. Teacher training is important for both experienced and those teachers who are novice to the teaching profession, therefore the nature of the training must be tailored to innovative pedagogy, interactive assessment techniques and use of differentiation instructions in the classroom (Tunjera, 2019).

It was found that assessment methods like researching, compiling papers and making presentations to the class were quite popular across the colleges. These served not only to achieve the desired learning outcomes but also helped trainees to develop core competencies like digital literacy, communication and collaboration and self-efficacy. Another important core competency as per the TECF is reflective teaching. This is developed when feedback from teacher educators and fellow trainees serves to help individual trainees to reflect on

their performance. According to Brookfield (2017), when teaching reflectively, instructors think critically about their teaching and look for evidence of effective teaching. This critical analysis can draw on a variety of sources. Four crucial sources are: students' eyes, colleagues' perceptions, personal experience, and theory and research (Brookfield 2017).

The finding that teacher trainees are actively being engaged in conducting research, preparing reports and presenting in class corroborates findings by Tirol and others in 2022. In their study conducted in the Philippines, trainee teachers were to conceptualise an action research problem and design a methodology specific to their situation. It was found to be an effective way of conducting a competency based assessment (Tirol et al., 2022). This finding agrees with the recommendation from the Teacher Education Needs Assessment Report (2016). According to the report, the public proposed a shift in assessment modalities from purely academic to other domains of education.

The findings suggested that written tests were still very widely used in the colleges. This finding agrees with a study by Orina (2022) who found that the majority of the teachers implementing CBC relied on the lecture and question and answer methods. They had insufficient knowledge regarding Competency-Based Curriculum Assessments. This was attributed to the fact that most of the teacher trainers are products of the 8-4-4 system education and therefore implementing CBC without re-orientation becomes a challenge.

The results from this study go towards filling a gap identified by Ng'eno in 2023. According to Ng'eno, questions have arisen on whether the teaching and learning pedagogies being employed in the teacher training institutions are aligned to competency based curriculum (Ng'eno, 2023). It was established from this study that teacher educators are indeed engaging in CBTA practices even though more needs to be done to get them to embrace them more. At the same time, teachers have been found to prefer formative assessment to summative assessment due to tension created by examination oriented assessment (Amunga et al., 2020).

The findings from this study indicate that teacher educators rated themselves highly in terms of their effectiveness in undertaking various assessment tasks. The concern here is their ability and willingness to engage in competency based assessment practices in their teaching. This finding corroborates that of Kafyulilo in 2013 on the implementation of competency based teaching approaches in Tanzania (Kafyulilo et al., 2013). Their study

revealed that pre-service teachers perceived their understanding and ability to implement competency based teaching approaches as high, but during interviews it was found that they had difficulties in explaining some competency based concepts. Although pre-service teachers were aware of the teaching and assessment methods stipulated to be used for the implementation of competency based curriculum they were not adopting the envisaged assessment methods in their classroom practices (Paulo, 2014).

These findings also resonate with those of Akinrinola et al. (2020). Their study was on teachers' knowledge and integration of competency-based practices in schools in Nigeria, Rwanda & South Africa. Their findings revealed that teachers across the three countries had a positive perception of the usage of competency-based approaches but lacked professional training and support, which in turn affected the quality of their teaching and assessment practices in classrooms.

Findings from this study suggested that teacher educators' assessment practices were not commensurate with their levels of awareness about what was expected of them. They were aware about CBTA approaches but discussions with other respondents suggested that their involvement in those practices was limited. This corroborates Tarma (2014) who found that although pre-service teachers were aware of the teaching and assessment methods stipulated to be used for the implementation of competency-based curriculum, the teacher educators were not adopting the envisaged methods in their classroom practices. Pre-service teachers continued to use traditional teacher centred teaching methods along with paper and pencil forms of assessments despite the fact that the newly adopted curriculum demands change.

5.2.6 Challenges in the implementation of CBTE

The sixth objective of the study was to establish challenges faced in the implementation of CBTE in teacher training colleges. The issues of concern were curriculum support materials, infra-structure, human resource, content, assessment, policies, attitudes and finances.

According to the findings of the study, the existing resources, connectivity to the internet and power, as well as devices that are required in teacher training institutions do not adequately support implementation of CBTE. This is because computer laboratories and internet coverage are limited to some schools. Similarly, the lack of the basic devices like

tablets and computers among the trainees further compounds the gaps in infrastructural support for the realisation of gains in teacher education.

The current situation does not align with the aspirations of the National Information, Communications and Technology (ICT) Policy which provides for the development and deployment of a nationwide education system that supports schools, and higher education/training facilities across the country. The fluctuations in relation to the internet and power outages do not guarantee the envisaged inter-connection of learning institutions with each other and relevant knowledge centres and providing curriculum integration (ICTA, ICT Policy, 2019).

Moreover, the findings further point out a departure from the ultimate aims of learning as the process of making connections within and between these networks.as articulated in the Learning Theory of Connectivism, Siemens (2005). The basic ideals embedded in the theory include the ability to effectively navigate and participate in these networks in order to access and utilize information These are dependent on the capacity within both the facilitator of learning and the trainee to transcend the traditional methods of reading and memorization. They should instead connect and interact with various sources of information such as websites, databases, and other online resources. However, due to the afore-mentioned shortages in infra-structure in schools, the main tenets of the Learning Theory of Connectivism cannot be actualized to realize the optimum participation and utilization of information, among learners.

Principals observed that teacher educators did not have the requisite technical capacity to employ ICT skills and positive attitudes to facilitate and support trainees . The findings also show that some of the trainers are technophobic and prefer to maintain the status –Q by only complying with the conventional methods of teaching.

In the context of the analysing the construction of educational practices, Panke and Seufert (2013) posit that open learning is a mediated activity that involves a bundle of techniques and tools. It requires those involved like learners and their facilitators to re-purpose the material. They pursue very specific, individual goals, for example presenting oneself in a prestigious platform, belonging to a community, retrieving a piece of information or copy and paste a particular paragraph to further work on it and create a new context. The paucity

of skills then means that teachers cannot apply the technical skills to support their instruction and their learners to actively re-purpose available materials for their use.

In regard to quality of content, findings from trainees and teacher educators pointed out that that some information provided was out of context and was not targeted to content they sought. They also said that some of the resources did not adequately fulfil the expectations of what they needed for learning. This was mainly because it was not clearly guided was inaccurate. This finding aligns with the views of Kopp and Hill (2008). In their argument about what is expected of trainees in the digital age, they state that learners need the ability to seek out current information, and the ability to filter secondary and extraneous information. This therefore implies that trainees need to develop the capacity to process the information they come across.

According to the findings, the absence of curriculum support materials like course books and teacher educator guides was prominently cited by the respondents across the institutions visited. This situation in Kenya's teacher training colleges is comparable to the findings of Kavindi (2014) on the implementation of competency based curriculum in certificate teachers' colleges in Tanzania. The study also established that the effectiveness teacher education was hindered by inadequate teaching and learning resources. The current scenario deviates from the recommendations of the taskforce report on the re-alignment of the education sector to the Constitution of Kenya 2010. The report points at the need for resources be availed to support curriculum implementation in the teacher training colleges.

It is arguable that in the context of delivering a new curriculum, in this case CBTE, designing and delivering a competency-based curriculum cannot be adequately achieved in the absence of essential resources like textbooks, appropriate online content and multimedia materials Kavindi (2014).

Other gaps from the findings include lack of infra-structural facilities like classrooms, ICT resources, laboratories, libraries and well equipped rooms for Home Science and other practical learning areas. In a similar study focusing on teachers' colleges, Nombo (2022) observes that teacher educators and trainees have to grapple with a paucity of supplies and inadequate infrastructure as they implement Competency Based Curriculum (CBC).

The findings show that in an attempt to make up for the information that was required for curriculum implementation, respondents made reference to online information. However, this led to drawing inaccurate content which could mislead both teacher educators and trainees. This means that there was no standardization as they accessed and delivered contradicting content. The issue of content that has not been validated being used by educators and trainees shows that they are not specialized in their areas of content to make decisions about what is correct before they deliver it during learning. This finding contradicts the expectations espoused by Blank & Alas, (2010) who says that teacher educators take the primary measures toward being specialists, achieve higher confidence in their education, and expand the scope of their knowledge reservoir. The solutions focus on collaboration between educators and government agencies to develop the learning materials. This calls for active empowerment and engagement of educators to develop support materials.

In relation to capacity human development, additional support for working with teacher educators to make them better is in agreement with the assertion that nations spend billions of dollars on enhancing the standard of their educators' skills and eligibility by building their chances for professional development (DeMonte, 2013).

5.3 Conclusions

5.3.1 Preparedness of teacher educators to implement the CBTE

The teacher educators demonstrated notable proficiency in aligning learning experiences with outcomes, formulating key inquiry questions, and fostering an interactive learning environment. This indicates a positive commitment to the principles of CBTE, emphasising the holistic development of teacher trainees. However, there are specific areas identified for improvement, particularly in the integration of Information and Communication Technology (ICT) in lessons. The meticulous preparation of lesson notes, the integration of ICT, and concerns about content coverage offer practical considerations for refining teacher preparation. The principals' emphasis on continuous learning and positive impacts of the upgrade program further contribute to the overall understanding of professional competence of teachers.

5.3.2 Effectiveness of planning by the Teacher Educators for implementation of CBTE

Teachers plan and implement daily classroom routines and patterns of interaction and prospective teachers are expected to plan their lessons appropriately since good planning allows teachers to focus and be flexible in their instruction. From the highlighted findings, it can be seen that the teacher education programs are providing pedagogical, subject-specific, and practical learning opportunities to support teacher trainees to plan and prepare for instructional delivery. This study provides sufficient evidence that during microteaching and practicum, teacher trainees in the Kenyan TTCs are fairly assisted by the teacher educators in the area of planning and preparation. This means that the guidance from mentor teachers is capable of equipping the teacher trainees to work independently in an environment where they are not constantly supervised. Even though feedback from all respondents appears to be positive, suggesting that teacher educators are effective in the area of planning and preparation, the fewer negative responses of those who pointed out the concerns cannot be ignored altogether. This is because such responses probably signify that there are still some issues that teacher trainees encounter during micro teaching and practicum in general, and in preparing and planning for lessons in particular that need the attention of teacher education implementers.

5.3.3 Appropriateness of the pedagogical strategies for implementation of CBTE

Teachers training colleges use various learner centred pedagogies in teaching and learning. Among the pedagogical strategies used include: Group discussion, projects, experiments, blended learning and research. However, some colleges use lecture method during teaching and learning.

The pedagogical strategies used in teachers training colleges were said to be appropriate because; they are learner-centred and they engage the learner actively during the learning process. The strategies used in teaching and learning are relevant and appropriate and cater for the development of an all-round teacher who can use different learning styles thus enhancing development of competencies in learners.

Majority of the teacher educators revealed that the CBTE curriculum is effective in preparing teacher trainees for professional practice. This is because the learning experiences are learner centred thus helping trainees develop core competencies and use varied methods

in actual teaching and learning. However, some indicated that the CBTE curriculum is not effective in preparing teacher trainees for practice citing time constraints when it comes to research, presentations and micro-teaching, thus, trainees do not develop the right competencies for professional practice.

The findings also conclude that the pedagogies used are not inclusive, especially trainees with HI and VI.

The use of various learner centred pedagogies, blended learning help in development of core competencies in teachers. The practical activities help teachers to acquire hands-on skills, teachers acquire knowledge on how to interpret the curriculum designs and mainstreaming of values and PCIs in the curriculum.

5.3.4 Relevance of the resources used for implementation of CBTE

The study concludes that TTCs do not have all the required resources for implementation of CBTE. The availability of the resources varies from one college to the other. Some resources are found in one college and missing in a different one. In addition, the available resources are not adequate. Key resources like course books approved by KICD are missing. Curriculum designs for the upgrade programme are also missing leaving teacher educators to decide how to implement these programmes using the regular designs. Most of the resources used for implementation of CBTE in the TTCs are relevant. However, some of the resources such as ICT devices, where they exist, are not fully utilised due to lack of internet connectivity. Lack of adequate resources made only few teacher educators and trainees benefit from them. The available course books did not directly address the curriculum designs thus making the teacher educators and trainees rely heavily on the internet.

5.3.5 Conclusion on CBTA in Implementation of CBTE

The study found that most teacher educators have been sensitised about CBTA and consider themselves effective in carrying out all aspects of competency based assessment. A number of issues of concern in assessment were noted. These included: involvement of KNEC in formative assessment; difficulties with administration of e-assessments; modalities of administering online assessment for trainees with special needs; the number of subjects in which trainees are assessed and the lack of feedback from external assessment.

The study concludes that teacher educators' practices do not match their levels of awareness about competency based teacher assessment. They still rely mainly on written tests, especially continuous assessment tests (CATs) and engage only to some extent in CBTA approaches. These are mostly group or individual projects and research work which is then followed by class presentations for appraisal by trainers and peers.

For teacher trainees to be effective in carrying out assessment once they begin practising, it is important that they be exposed to all aspects of competency based assessment during their training. This exposure should begin with the trainers themselves practising CBTA practices.

5.3.6 Challenges in the implementation of CBTE

From the data and literature reviewed, it can be concluded that there are many factors impeding the implementation of CBTE. However, on the issue of requirements, there is a gap in both material and human resources needed for effective implementation. Regulations affecting the entry requirements, enrolment and the programme are not harmonised. Despite these challenges, there is evidence that the adoption of CBTE can have positive impacts on student learning outcomes, including increased engagement and improved grades.

5.4 Recommendations

5.4.1 Preparedness of teacher educators to implement the CBTE

1. KICD in collaboration with other relevant agencies should provide opportunities for continuous professional development to keep teacher educators abreast with best practices in teacher education. This should bring on board participants from public and private colleges without discrimination.
2. To address the issue of untrained teacher educators in TTCs, KICD should provide chances for ongoing professional development to teacher educators working in public and private institutions. This will ensure that educators are prepared to meet the needs of the twenty-first century and can compete on a worldwide scale.
3. KICD should provide opportunities for continuous professional development to teacher educators to address the issue of untrained teacher educators over the years,

in both public and private TTCs. This will ensure that teacher educators are prepared to meet the needs of the 21st century and can compete on a worldwide scale.

4. MOE through TTCs administrators should facilitate a culture of peer collaboration and formation of communities of practice among teacher educators to share effective teaching strategies, exchange ideas, and collectively enhance professional competence.

5.4.2 Effectiveness of planning by the Teacher Educators for implementation of CBTE

1. KICD in collaboration with relevant agencies should train teacher educators on interpretation of CBTE curriculum designs including time management, and ICT integration.
2. MOE and TSC should ensure college administrators enforce the preparation of professional documents by teacher educators.
3. MOE and relevant agencies should design structured microteaching guidelines to ensure teacher trainees plan effectively for lesson delivery.

5.4.3 Appropriateness of the pedagogical strategies for implementation of CBTE

1. TSC and KICD should provide continuous teacher training on the use of learner centred pedagogies to help develop the right competencies in teacher trainees.
2. MOE and relevant agencies should equip teacher educators with appropriate pedagogical strategies for trainees with special needs.

5.4.4 Relevance of the resources used for implementation of CBTE

1. MOE and KICD should ensure that TTCs have relevant and adequate resources for implementation of CBTE curriculum. Key among the resources are course books, trainees handbooks, teacher educator guides, ICT infrastructure for regular and SNE TTCs.
2. KICD should develop specific standalone curriculum designs for the upgrade programme.

3. KICD should review the DECTE and DPTE curriculum designs so as to make them program-specific.

5.4.5 Competency based teacher assessment in implementation of CBTE

1. The MoE and KNEC need to review the modalities for the conduct and content of e-assessment in tandem with CBTE. The exclusive use of multiple choice questions should be reconsidered. The awarding of marks should be reviewed to give more weight to the project.
2. The MoE and KNEC should review the modalities for administration of online assessments for trainees with special learning needs.
3. The MoE and relevant agencies should review the number of subjects in which teacher trainees are assessed before they qualify for award of diploma qualifications. Trainees in the upgrade programme should be allowed to study only the professional areas and the subjects they took in their earlier teacher training course or which they opt to study.
4. KNEC should provide timely feedback on all assessments that it conducts in teacher training colleges. The modalities on how the results contribute towards trainees' summative evaluation results should also be made clear to the trainees.

5.4.6 Challenges in the implementation of CBTE

1. KICD should develop a collaborative and inclusive approach to development of curriculum support materials, handbooks and training manuals to empower for effective implementation of CBTE.
2. KICD and other government agencies should provide accredited platforms from which standardised content can be accessed to avoid use of inaccurate information by both teacher educators and trainees.
3. MoE and relevant agencies should harmonise policies affecting teacher education in terms of entry qualifications, micro-teaching and assessment programmes.
4. MoE should ensure that both public and private TTCs have adequate resources to implement CBTE.

REFERENCES

Adie, J. W., Nwankwo, C. E., & Yidana, I. (2015). Teacher educators' preparedness to cater for learners with special educational needs in Ghana. Journal of Education and Practice, 6(8), 60-66.

Akinrinola, Ogegbo, Emmanuel and Adewusi (2020). Competency-Based Education in Africa: Exploring Teachers' Perceptions, Understanding, and Practices. *Teacher Education Through Flexible Learning in Africa. Volume 2, 2020.*

Al Shabibi, A. S., & Silvennoinen, H. (2018). Challenges in the Education System Affecting Teacher Professional Development in Oman. Athens Journal of Education.

Al-Fahad, F. N., & Alotaibi, M. Y. (2020). The role of teacher educators in implementing competency-based teacher education. International Journal of Instruction.

Alfiani, S., & Nurcholis, I. A. (2023). Strategies for Designing Effective Lesson Plan in Micro Teaching Practices Perceived by Indonesian EFL Student Teachers. English Learning Innovation (englie), 4(1), 58-67.

Amunga, J., Were, D., & Ashioya, I. (2020). The Teacher -Parent Nexus in the competency Based Curriculum Success Equation in Kenya. International Journal of Educational Administration and Policy Studies.

Amy Hsu & Fran Malkin (2011) Shifting the focus from teaching to Learning: Rethinking the role of the Teacher Educator.Contemporary Issues In Education Research.

Aziz, N. A., Aziz, M. N. A., & Adnan, M. (2019). The role of teacher educators in preparing professional documents for in-service teachers. International Journal of Academic Research in Education and Review, 7(12), 327-334.

Baartman, N. (2016). Perspectives of Post Graduate Certificate in Education (PGCE) students on the effectiveness of school based mentoring.

Bala, I. (2018). Issues and Challenges in Teacher Education. International Journal of Creative Research Thoughts, 6(1), 32-36.

Becker, E. S., Waldis, M., & Staub, F. C. (2019). Advancing student teachers' learning in the teaching practicum through Content-Focused Coaching: A field experiment. Teaching and Teacher Education, 83, 12-26.

Bradshaw, L., & Mundia, L. (2006). Attitudes and concerns about inclusive education: Bruneian in-service and preservice teachers. International Journal of Special Education, 21, 35–41. Rerieved from

Brookfield, S. (2017). Becoming a Critically Reflective Teacher, 2nd ed. San Francisco: Jossey Bass. Teacher Professional Development around the World: The Gap between Evidence and Practice

Butcher, K. R., Bouck, E. C., & Smith, J. L. (2020). Preparing teacher educators to support preservice teachers' inclusive pedagogy: A professional development program. Journal of Teacher Education, 71(5), 502-513.

By Anna Popova David Evans Mary E. Breeding and Violeta Arancibia (SEPTEMBER 27, 2019) Teacher Professional Development around the World: The Gap between Evidence and Practice | Center For Global Development | Ideas to Action (cgdev.org)

C. Denman & R. Mahrooqi (2018): General Principles of Assessment.

Çelik, Q. T., & Anderson, S. (2021). Effect of Capacity Building of Teachers on Performance of the Students in Higher Institutions of Learning in Turkey. Journal of Education. https://stratfordjournals.org/journals/index.php/journal-of-education/article

Çelik, Z., & Gür, B. S. (2019). Turkey's education policy during the AK Party era (2002-2019). Insight Turkey.

Chand, S., (2022). Teacher Perception, Practices, And Attitudes Towards Approaches To Learning. 6. 10004-10015.

Chen, X., Jiang, Y., & Wang, Y. (2019). A study on the training mode of teacher educators under competency-based teacher education. Journal of Educational Innovation, Research and Practice.

Chinengundu T. &Hondonga J.(2022): Teaching Practicum Assessment Procedures Adopted by Primary Teachers' Colleges during COVID-19 pandemic era in Zimbabwe.http://dx.doi.org/10.35293/tetfle.v3i1.3709

Clare Brooks (2021) The quality conundrum in initial teacher education: Teachers and Teaching.

Cochran-Smith, M. (2003). Learning and unlearning: The education of teacher educators. Teaching and Teacher Education.

Czaja, S. J., & Sharit, J. (2020). Designing training and instructional programs for older adults. CRC Press.

Deprez, D., Busch, A. J., Ramirez, P. A., Araque, E. E. P., & Bidonde, J. (2021). Capacity-Building and Continuing Professional Development in Healthcare and Rehabilitation in Low-and Middle-Income Countries-A Scoping Review Protocol Good, Carter V. Dictionary of Education. New York: McGraw-Hill Book Company.

Development. English for Specific Purposes Instruction and Research Jouko Sarvi &Jukka Tulivuori (2022) Challenges and Opportunities in Teacher Education

Dinama, B., Kahaka, M., & Nhete, T. (2017). PLANNING AND PREPARATION IN TEACHER TRAINING–VIEWS OF TEACHER TRAINEES. European Journal of Education Studies.

Doğan, N., Kıbrıslıoğlu Uysal, N., Kelecioğlu, H., & Hambleton, R. K. (2020). An overview of e-assessment. Hacettepe University Journal of Education, 35(Special Issue), 1-5. doi: 10.16986/HUJE.2020063669

Dorothea Anagnostopoulos, Juanita Beatriz Bautista Guerra, Carleen Carey, Sakeena Everett Teacher Training and Development

Eom, M., Ashby, P., & Liang, X. (2019). Online assessment in higher education: A comparative study of performance, perceptions, and attitudes between online and traditional students. Journal of Educational Computing Research, 56(4), 599-620.

Fang, Y., Huang, H., & Chen, Y. (2021). Challenges and strategies of implementing competency-based education in higher education: A systematic review. Frontiers in Psychology, 12, 638814.

feedback and progress over time. Retrieved from Queen Mary University of London:https://academicdevelopment.qmul.ac.uk/events/ipsative-assessment-motivating-students-through-recording-feedback-and-progress-over-time.

Golder, G., Norwich, B., & Bayliss, P. (2005). Preparing teachers to teach pupils with special educational needs in more inclusive schools: evaluating a PGCE development. British Journal of Special Education, 32, 92–99.

Gould, J., & Roffey-Barentsen, J. (2014). Achieving your diploma in education and training (1st ed.). London: Sage Publications Ltd.

Hailua, M and Michael, K. (2021). Effectiveness of Summer Upgrading Teachers' Education Program of Primary Schools in Tigray Regional State International Journal of Sciences: Basic and Applied Research (IJSBAR) (2018) Volume 42, No 1, pp 124-150 145

Harapnuik D., December 24, 2020. Assessment OF/FOR/AS Learning. Retrieved from https://www.harapnuik.org/?p=8475 on 16th November, 2023.

Herrera, R. F., Vielma, J. C., & Muñoz, F. C. (2017). Microteaching: a new way to perform oral presentations by engineering students. Global Journal of Engineering Education, 19(3), 285-290.

Huang J, Sang G and He W (2023) Motivation to teach and preparedness for teaching among preservice teachers in China: The effect of conscientiousness and constructivist teaching beliefs. Educ Inf Technol (Dordr).

Hughes, D. G. (2017, March 16). Ipsative assessment: motivating students through recording

Ingersoll, R. M. (2012). Beginning teacher induction what the data tell us. Phi delta kappan, 93(8), 47-51.

International Bureau of Education (2016) 'What Makes a Quality Curriculum? In-Progress Reflection No. 2 on "Current and Critical Issues in Curriculum and Learning"', *UNESCO*.

John Kwasi Annan, (2020) "Preparing Globally Competent Teachers: A Paradigm Shift for Teacher Education in Ghana", *Education Research International*, vol. 2020, Article ID 8841653, 9 pages, 2020.

Jouko Sarvi &Jukka Tulivuori (2022) Challenges and Opportunities in Teacher Education Reforms.ADB- Publication Stock No. BRF220447

Kafyulilo, AC & Rugambuka, IB & Moses, Ikupa. (2013). Implementation of Competency Based Teaching in Morogoro Teachers' Training College, Tanzania. Makerere Journal of Higher Education. 4. 10.4314/majohe. v4i2.13.

Kariuki, P. N., & Muhoro, P. K. (2018). Enhancing Teacher Competencies through Teacher Upgrade Programmes in Kenya. International Journal of Education and Research.

Kaur, G., & Singh, G. (2015). Online assessment in higher education: A review of literature. Contemporary Educational Technology, 6(2), 130-141.

Kaur, H., & Singh, G. (2018). Microteaching: A Tool for Effective Teaching. International Journal of Scientific Research and Management.

Kenya Institute of Curriculum Development (2016) *Needs assessment for curriculum reforms in Teacher Education in Kenya*.

Kenya Institute of Curriculum Development (2023) *Teacher Education Curriculum Framework*.

Khan, H. K., Butt, M. N., Bibi, W., Malik, S. A., & Khattak, U. R. (2021). Role of practicum in prospective teachers' learning: Field experiences in teacher education. Elementary Education Online, 20(5), 6462-6471.

Khan, H.K, Butt, M.N, Bibi, W, Malik S. A & Khattak U. R (2021). Role of practicum in prospective teacher's learning. Field experiences in teacher education. University of Baltisan, Skardu, Pakistan. Elementary Education Online, 2021. Vol. 20 (Issue 5): pp. 6462-647. doi: 10.17051/ilkonline.2021.05.731

Kibet, L. K., Komen, C. K., & Kandie, J. K. (2022). Challenges and opportunities of implementing competency-based teacher education in Kenya: The role of teacher educators. Journal of Education and Practice.

Kim, H., & Park, S. (2018). Effects of online assessment on self-regulated learning and academic achievement in higher education. Asia Pacific Education Review, 19(4), 563-573.

Kimani, W., Njenga, A., & Mugo, J. (2020). The Effectiveness of Teacher Upgrade Programme on Teacher Motivation and Job Satisfaction in Public Primary Schools in Kenya. Journal of Education and Practice.

Kinyanjui, I., Gichora, K., & Ndirangu, M. (2020). The Effectiveness of Microteaching on the Teaching Competencies of Pre-Service Teachers in Science Education. International Journal of Research and Innovation in Social Science, 4(3), 80-87.

König, J., Bremerich-Vos, A., Buchholtz, C., Fladung, I., & Glutsch, N. (2020). Pre–service teachers' generic and subject-specific lesson-planning skills: On learning adaptive teaching during initial teacher education. European Journal of Teacher Education, 43(2), 131-150.

Kusmawan, U. (2017). Online microteaching: A multifaceted approach to teacher professional development. Journal of Interactive Online Learning, 15(1).

Lee, J., & Kim, H. (2021). The Effect of Microteaching and Practicum on Pre-Service Teachers' Self-Efficacy and Teaching Competence. Education Sciences.

Lee, J., Kim, Y., & Kim, M. (2021). Exploring the feasibility of online assessment for evaluating teacher competencies. Education Sciences, 11(4), 207.

Machin, L., Hindmarch, D., Murray, S., & Richardson, T. (2016). A Complete Guide to the Level 5 Diploma in Education & Training (Second Edition ed.). St Albans: Critical Publishing.

Macsuga-Gage, A. S., Simonsen, B., & Briere, D. E. (2012). Effective teaching practices that promote a positive classroom environment. Beyond Behavior.

Martinez, C. (2021) 'Developing 21st century teaching skills: A case study of teaching and learning through project-based curriculum', *Taylor & Francis*. doi: https://doi.org/10.1080/2331186X.2021.2024936Page 1 of 16Received 23 September 2021

Melissa Tanya Gomes(2022)Great Teachers or Great Teaching: A reflection

Molefe, D., Molefe, T. A., & Nketsia, W. (2019). The challenges of implementing a competency-based education curriculum in South Africa. Journal of Education and Practice, 10(9), 93-100.

Mutheu, J. M., & Wambugu, P. W. (2021). Microteaching and its Impact on Teaching Competencies of Pre-Service Teachers in Special Needs Education in Kenya. Journal of Education and Practice, 12(16), 88-96.

Muthoni, L. N., & Waweru, M. N. (2018). Microteaching, a Tool for Enhancing Teaching Skills: A Case of Secondary School Teachers in Kenya. Journal of Education and Practice, 9(13), 7-14.

N. Mandukwin (2016) Challenges Towards Curriculum Implementation IN High Schools INMountFletcherDistrict,EasternCape..https://core.ac.uk/search?q=author:(Mandukwini,%20Nompumelelo)

Nash, C. S., & Sproule, J. (2020). Career development of expert coaches. International Journal of Sports Science & Coaching, 4(1), 121-138.

Nassira Boudersa(2016), Professional Development in the Algerian Educational Context: Toward Informed and Effective Teaching Practices.Research Gate.

Ndegwa, J. M., & Kimani, C. N. (2020). Innovative teaching strategies used by teacher educators in preparing professional documents for pre-service teachers in Kenya. International Journal of Education and Research, 8(6), 225-238.

Ng'ang'a, S. N., Njoroge, R. J., & Wachira, P. N. (2019). The Effectiveness of Micro-Teaching on Pre-Service Teachers' Classroom Management Skills in Public Universities in Kenya. International Journal of Education and Research, 7(5), 195-204.

Ngaruiya, BN. 2012. An analysis of the learning resource centre concept and its implication for diploma teacher training colleges in Kenya.

Ocholla, D. N. (2017). The Effect of Micro Teaching on Teacher Trainees' Teaching Skills in Kenya. International Journal of Education and Research, 5(3), 125-136.

Odundo, P. A., Lilian, G. K., & Ngaruiya, B. (2018). Preparation And Management Of Teaching Practice Process At University Of Nairobi, Kenya: Appropriateness Of Methods And Resource.

OECD (2022), *Mending the Education Divide: Getting Strong Teachers to the Schools That Need Them Most*, TALIS, https://doi.org/10.1787/92b75874-en.

Ollin, R., & Tucker, J. (2008). The NVQ Assessor, Verifier and Candidate Handbook. (4. Editor, Ed.) London: Kogan Page.

Oluoch, F. O., & Odundo, P. A. (2017). The Effectiveness of Teacher Upgrade Programmes on Teacher Performance in Public Primary Schools in Kenya. African Educational Research Journal, 5(1), 1-10.

Osgood, R. L., & Fagan, K. D. (2016). Preparing teacher educators to meet the needs of diverse learners: Challenges and opportunities. Journal of Teacher Education, 67(4), 284-293.

Otsupius, I. A. (2014). Micro-teaching: A technique for effective teaching. African Research Review, 8(4), 183-197.

Ouma, R. O., Njoroge, J., & Oluoch, G. O. (2021). The Effectiveness of Teacher Upgrade Programme on Improving Teacher Quality in Uganda. International Journal of Education and Research.

Ramli, N. A., Bakar, Z. A., & Yusoff, M. H. (2021). The preparedness of teacher educators in implementing competency-based teacher education. Journal of Technical Education and Training.

Ramya Vivekanandan,(2019) Intergrating 21st century Skills into education Systems: From rhetoric to reality.

Rashad Ali Bin-Hady, W. (2018). A study of novice teachers' challenges at their practical teaching phase. IJLRES-International Journal on Language, Research and Education Studies, 2(3).

Reforms. ADB- Publication Stock No. BRF220447 DOI: http://dx.doi.org/10.22617/BRF220447

Richard, M. M. (2021). The Impact of Micro Teaching Lessons on Teacher Professional Skills: Some Reflections from South African Student Teachers. International Journal of Higher Education, 10(2), 164-171.

Robinson, D. (2017). Effective inclusive teacher education for special educational needs and disabilities: Some more thoughts on the way forward. Teaching and Teacher Education, 61, 164–178.

Rust, C. (2001). Purposes and Principles of Assessment. Oxford: Oxford Brookes University. Sidali Selama (2020). The Algerian Newly Recruited Teachers' Attitudes Toward Professional

Sempowicz, T., & Hudson, P. (2011). Analysing mentoring dialogues for developing a preservice teacher's classroom management practices. Australian Journal of Teacher Education, 36(8), 1-16.

Sharma, U., & Nuttal, A. (2016). The impact of training on pre-service teacher attitudes, concerns, and efficacy towards inclusion. Asia-Pacific Journal of Teacher Education, 44(2), 142–155.

Sibanda, P. (2018). Challenges faced by teachers in implementing competency-based education in Zimbabwe. Journal of Social Sciences, 54(2), 103-114.

Sithole, N. V. (2023). The efficacy of microteaching in a teacher education programme during the lockdown at a university in South Africa. International Journal of Learning, Teaching and Educational Research, 22(2), 76-91.

Tandon, J. K., & Sharma, S. (2019). Application of Micro Teaching in Teacher Education Programs: A Meta Analysis. IPEM JOURNAL FOR INNOVATIONS IN TEACHER EDUCATION, 4, 2.

Wanyama, R. N., & Simiyu, C. (2018). The role of teacher educators in preparing professional documents for pre-service teachers: A case study of selected teacher training colleges in Kenya. International Journal of Humanities and Education Research, 7(2), 57-69.

Witty, E., & Gaston, B. (2008). Competency Based Learning and Assessment.

Woodcock, S., & Hemmings, B. (2012). Does study of an inclusive education subject influence pre-service teachers' concerns and self- efficacy about inclusion ? Australian Journal of Teacher Education, 37(6), 1–11.

Yozgatli, Melike, (2022): Inclusive Practices In Teacher Education Programs. Theses and Dissertations--Early Childhood, Special Education, and Counselor Education. 127. Burke, K., & Sutherland, C. (2004). Attitudes toward inclusion: Knowledge vs. experience. Education, 125(2), 163–172.

Yükseltürk, E., & Bulut, S. (2017). Developing a critical thinking skills test in mathematics for teacher candidates: A validity-reliability study. Journal of Education and Practice, 8(22), 83-92.

Zhang, J., Wang, Y., & Zhang, Y. (2019). The Effect of Practicum on Pre-service Teachers' Professional Knowledge and Skills. Journal of Education and Practice.

Zhang, L., Yu, S., and Liu, H. (2019). Understanding teachers' motivation for and commitment to teaching: profiles of Chinese early career, early childhood teachers. Teach. and Teach.

APPENDICES

APPENDIX 1: LIST OF DPTE COLLEGES VISITED

Name of Colleges	Programmes	Type	County
1. Bondo TTC	DECTE, DPTE	Public	Siaya
2. Kaimosi TTC	DECTE, DPTE	Public	Vihiga
3. Ugenya TTC	DECTE, DPTE	Public	Siaya
4. Bunyore TTC	DPTE	Public	Vihiga
5. Bishop Mahon TTC	DECTE, DPTE	Public	Turkana
6. Seme TTC	DECTE, DPTE	Public	Kisumu
7. Migori TTC	DECTE, DPTE	Public	Migori
8. Borabu TTC	DECTE, DPTE	Public	Kisii
9. Eregi TTC	DECTE, DPTE	Public	Kakamega
10. Tambach TTC	DECTE, DPTE	Public	Marakwet
11. Mosoriot TTC	DECTE, DPTE	Public	Nandi
12. Kericho TTC	DECTE, DPTE	Public	Kericho
13. Narok TTC	DECTE, DPTE	Public	Narok
14. Murang'a TTC	DECTE, DPTE	Public	Muranga
15. KamweNja TTC	DECTE, DPTE	Public	Nyeri
16. St. Mark Kigari TTC	DECTE, DPTE	Public	Embu
17. St. Lawrence Egoji	DECTE, DPTE	Public	Meru
18. Moi Baringo TTC	DECTE, DPTE	Public	Baringo
19. Shanzu TTC	DECTE, DPTE	Public	Mombasa
20. Kwale TTC	DECTE, DPTE	Public	Kwale
21. Machakos TTC	DECTE, DPTE	Public	Machakos
22. St. Johns Kilimambogo	DECTE, DPTE	Public	Kiambu
23. ETTI	DECTE	Public	Uasin Gishu
24. Chebwai TTC	DECTE	Public	Kakamega
25. Elgon View TTC	DECTE, DPTE	Public	Uasin Gishu
26. Mandera TTC	DPTE	Public	Mandera
27. Aberdare TTC	DPTE	Public	Nyandarua
28. Kenyenya TTC	DPTE	Public	Kisii
29. Galana TTC	DPTE	Public	Malindi
30. Garissa TTC	DPTE	Public	Garissa
31. Kitui TTC	DPTE	Public	Kitui
32. Chesta TTC	DPTE	Public	West Pokot
33. Thogoto TTC	DPTE	Public	Kiambu

APPENDIX 2: LIST OF DECTE COLLEGES VISITED

Name of the college	Programmes	Type	County
1. St. Joseph's TTC	DECTE	Private	Vihiga
2. International TTC	DECTE, DPTE	Private	Kajiado
3. Kamagambo TTC	DECTE, DPTE	Private	Migori
4. Nyanchwa TTC	DPTE	Private	Kisii
5. Rachuonyo TTC	DPTE	Private	Homa Bay
6. Nakuru TTC	DECTE, DPTE	Private	Nakuru
7. Rongai TTC	DECTE, DPTE	Private	Nakuru
8. Kericho West TTC	DECTE, DPTE	Private	Kericho
9. St. Mary's TTC	DECTE, DPTE	Private	Taita Taveta
10. Presbyterian TTC	DECTE, DPTE	Private	Tharaka Nithi
11. Tendo Valley TTC	DPTE	Private	Meru
12. St. Paul's TTC	DPTE	Private	Kisii
13. West Pokot TTC	DECTE, DPTE	Private	West Pokot
14. Islamic TTC	DECTE, DPTE	Private	Mombasa
15. Nabongo TTC	DECTE, DPTE	Private	Bungoma
16. Kibwezi TTC	DECTE	Private	Makueni
17. Regional TTC	DECTE, DPTE	Private	Makueni
18. Holy Rosary TTC	DPTE	Private	Machako
19. Eastern Kenya Intergrated	DECTE, DPTE	Private	Machakos
20. Makueni TTC	DECTE	Private	Makueni
21. Lukenya TTC	DECTE, DPTE	Private	Makueni
22. Eldoret TTC	DPTE	Private	Uasin Gichu
23. Chebwai TTC	DPTE	Private	Kakamega
24. St. Paul's victorious	DECTE	Private	Kisumu
25. Mutitu Adventist	DECTE	Private	Makueni
26. Madonna TTC	DECTE	Private	Uasin Gichu
27. Mwingi TTC	DECTE	Private	Kitui

APPENDIX 3: LIST OF DSTE COLLEGES VISITED

#	**Name of the college visited**	**Programmes**	**Type**	**County**
1.	St. Paul's Kibabii TTC	DSTE	Public	Bungoma
2.	Kagumo TTC	DSTE	Public	Nyeri
3.	Lugari TTC	DSTE	Public	Kakamega
4.	St. Augustine TTC	DSTE	Private	Embu
5.	Eastern Kenya Integrated College	DSTE	Private	Machakos
6.	Nakuru TTC	DSTE	Private	Nakuru

APPENDIX 4: DATA COLLECTION TOOLS

T

KICD/RPQAC/T/2023/2

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

Nurturing Every Learner's Potential

MONITORING THE IMPLEMENTATION OF CBTE CURRICULUM IN KENYA TEACHER TRAINING COLLEGES

TEACHER EDUCATORS' QUESTIONNAIRE

OCTOBER, 2023

Introduction

KICD is monitoring the implementation of Competency Based Teacher Education (CBTE) curriculum in Kenyan Teacher Training Colleges. This questionnaire has been designed to gather information on your experiences as a Teacher Educator in relation to the implementation of the curriculum. The information you provide will be used to improve teacher training in Kenya. Kindly respond to all the questions. Your responses will be treated with confidentiality and used only for the purpose of this study.

PART A

☐ Gender of respondent: Male Female

2. Name of College: ……

3. County: …….

☐ Type of College: Public Private

5. Programme you are responding on: ***(Tick only one)***

☐ CTE
☐ TE
☐ TE

6. Your teaching subject(s): ……..

PART B

7. Have you attended training on Competency Based Teacher Education?

☐ s No

8. If 'Yes' comment on the adequacy of the training you attended.

……
…

9. If 'No' to 7, please explain.

……
…

Rate the extent to which you are effective in undertaking the following aspects of the CBTE curriculum designs. ***[Put a score between 1 and 5 according to the key: 1 = Not effective at all; 2 = A little effective; 3 = Average; 4 = Effective; 5 = Very effective]***

Aspects of curriculum design	**Score (1- 5)**
a) Breaking down the learning outcomes within the time provided in the curriculum designs.	
b) Developing appropriate learning outcomes that include knowledge, skills and attitudes for a specific lesson.	
c) Designing appropriate learning experiences in line with learning outcomes.	
d) Providing opportunities for developing core competencies within the learning experiences.	
e) Sourcing for relevant learning resources to enhance the achievement of learning outcomes.	
f) Providing opportunities for nurturing and practicing values among teacher trainees.	
g) Formulating key inquiry questions.	
h) Mainstreaming Pertinent and Contemporary Issues (PCIs) in the learning process.	
i) Linking ideas or concepts in one subject to another.	
j) Using non-formal activities to reinforce learning.	
k) Designing appropriate Community Service Learning (CSL) activities.	
l) Planning for varied pedagogies suitable for developing trainees' competencies.	
m) Using varied pedagogical approaches that lead to active participation and involvement of teacher trainees.	
n) Keeping a record of own achievements and applying self-reflection to improve practice.	
o) Integrating content and pedagogy during curriculum delivery.	
p) Conducting remote/online classes.	

10. Make a general comment on interpretation of CBTE curriculum designs based on the aspects listed in number 10.

……
…

11. In which areas of curriculum implementation do you require further training in order to effectively facilitate learning in your teaching subject?

……

Indicate the extent to which you agree with the following statements pertaining to CBTE curriculum designs. ***(Use the key: 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly Agree)***

Statements	**Response (1 – 5)**
a) Teacher Education Curriculum designs are easy to interpret.	
b) Components of the curriculum design are logically sequenced.	
c) The learning experiences support inquiry-based learning approaches.	
d) The learning experiences support different learning styles.	
e) The learning experiences are appropriate to teacher trainees' needs.	
f) The learning experiences promote acquisition of core competencies.	
g) The learning experiences support achievement of specific learning outcomes	
h) The curriculum designs promote collaborative and active learning processes.	
i) The designs embrace the use of the trainees' immediate physical surroundings in and out of the classroom.	
j) The suggested key inquiry questions enhance learning	
k) The curriculum designs adequately address nurturing of values	

12. Make a general comment on the effectiveness of CBTE curriculum in preparing teachers for their professional practice.

……

13. Give a comment on the appropriateness of the pedagogical strategies used in the implementation of CBTE curriculum.

……
…

Comment on availability and use of resources for enhancement of CBTE curriculum implementation in your institution.

……

Have you been sensitised on Competency Based Teacher Assessment (CBTA) approaches? Yes No

14. Rate the extent to which you are effective in applying the following aspects of Competency Based Teacher Assessment in your subject. ***[Put a score between 1 and 5 according to the key: 1 = Not effective at all; 2 = A little effective; 3 = Average; 4 = Effective; 5 = Very effective]***

Aspects of assessment	**Score (1- 5)**
a) Developing appropriate assessment tools	
b) Using appropriate assessment methods	
c) Developing appropriate authentic tasks	
d) Maintaining assessment records	
e) Reporting on assessment	

15. How do you prepare teacher trainees to undertake competency based assessment at the classroom level?

……

… (**NB: This question is only for DECTE and DPTE programmes)**

a) Do you think the **upgrade program** adequately prepares teachers to implement CBC?

☐s No

b) Give reasons for your response in 20(a).

……

c) Give suggestions on how to improve the upgrade programme.

……

Mention the challenge(s) you are experiencing as you implement teacher education curriculum Propose solutions to the challenges.

Challenge(s)	**Suggested solution**

16. Any other comment(s) on implementation of CBTE curriculum.

……

THANK YOU

PR

KICD/RPQAC/PR/2023/1

KENYA INSTITUTE OF CURRICULUM DEVELOMENT

Nurturing Every Learner's Potential

MONITORING THE IMPLEMENTATION OF COMPETENCY BASED TEACHER EDUCATION (CBTE) CURRICULUM IN KENYAN TEACHER TRAINING COLLEGES

INTERVIEW GUIDE FOR PRINCIPALS

OCTOBER, 2023

Introduction

The Kenya Institute of Curriculum Development (KICD) is carrying out a study on the implementation of Competency Based Teacher Education (CBTE) curriculum in Kenyan Teacher Training Colleges (TTCs). Your college has been selected to take part in the study. This interview has been designed to gather information on your experience as a Principal in relation to the implementation of the curriculum. The information you provide will be used to improve teacher training in Kenya. Kindly respond to all the questions. Your responses will be treated with confidentiality and used only for the purpose of this study.

PART A

☐ Gender of Respondent: Male Female

2. Name of College:

…….

3. County:

…….

☐ Level of College: DECTE & DPTE DSTE

☐ Type of College: Public Private

PART B

6. In your view, how well were you prepared to implement CBTE in your institution? ***(Probe for training, capacity building, interpretation of the curriculum design requirements for implementation of CBTE etc.)***

……

……

……

7. Comment on the preparedness of the teacher educators in the implementation of the CBTE. ***(Probe for the training by MOE/KICD/TSC, and their competence in preparing the trainees for practicum and professional work as teachers)***

……

……

……

8. a) Comment on the effectiveness of the upgrade programmes in enhancing teacher trainees' competence in teaching CBC. ***(Probe for their opinion on how it is enhancing trainees' professional skills)***

……

……

……

b) How can the upgrade programme be improved?

……

……

……

9. In your view, how effective are the teacher educators in planning for CBTE curriculum? ***(Probe for effectiveness of teacher educators in the preparation of professional documents, planning for practicum and micro teaching for teacher trainees)***

……

……

……

10. a) What pedagogies do your teacher educators use to prepare trainees?

……

……

……

b) Comment on the appropriateness of the pedagogies in the implementation of CBTE curriculum

……

……

……

11. What resources do your teachers use to prepare teacher trainees? ***(Probe for availability, utilization and relevance)***

……
……
……

12. What would you say about the way Competency Based Teacher Assessment (CBTA) is conducted in your institution? (***Probe for suitability of assessments and teacher educators' ability to apply CBTA in learning)***

……
……
……

13. What challenges have you encountered in the implementation of CBTE curriculum in your institution?

……
……
……

14. How can the stated challenges be addressed?

……
……
……

THANK YOU

DRH **KICD/RPQAC/DOC/2023/3**

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

Nurturing Every Learner's Potential

MONITORING THE IMPLEMENTATION OF COMPETENCY BASED TEACHER EDUCATION (CBTE) CURRICULUM IN KENYA TEACHER TRAINING COLLEGES

INTERVIEW FOR DEANS OF CURRICULUM/ REGISTRARS/HEADS OF DEPARTMENT

OCTOBER, 2023

Introduction

The Kenya Institute of Curriculum Development (KICD) is carrying out a study on the implementation of Competency Based Teacher Education (CBTE) Curriculum in Kenya Teacher Training Colleges. This interview guide has been designed to gather information on your experience as a Dean of Curriculum/Registrar/Head of Department in relation to the implementation of the curriculum. The information you provide will be used to improve the implementation of the curriculum in Teacher Training Colleges in Kenya. Kindly respond to all the questions. Your responses will be treated in confidence and used only for this study.

PART A

☐ Gender of Respondent: Male Female

☐ Designation: Dean of Curriculum

☐ Academic Registrar

☐ Head of Department

3. Name of College: ……

4. County: ……

☐ Type of College: Public Private

6. Number of years in service as teacher educator:

☐ Below 5 6 -10 11-15 16 -20 Above 20

7. Teaching subject(s), if applicable ……

PART B

8. Have you attended training on Competency Based Teacher Education?

☐ No

9. If Yes in No. 8, how many times have you attended the training? *(Tick as appropriate)*

☐ Once Twice More than twice

10. Comment on the adequacy of the training in relation to the expected levels of professional competence in the implementation of the Competency Based Teacher Education (CBTE)

……

……

11. If No in number 8, please explain

……

……

……

12. What are the priority areas that teacher educators in your institution require to effectively implement the CBTE curriculum?

……

……

……

13. What is your view on the teacher educators' effectiveness in planning? ***(Probe for the effectiveness of trainers in the preparation of professional documents, planning for practicum and micro teaching for both teacher trainers and trainees)***

……

……

……..

14. What are your observations on the appropriateness of the pedagogical strategies that teacher educators use for the implementation of CBTE?

……

……

……

15. Comment on the availability and relevance of the resources used for implementation of CBTE in your institution ***(Probe for regular use of resources in instructional activities to support teaching and learning, how they address the needs of CBTE)***

……

……

……

16. Comment on the capacity of teacher educators in your institution to develop and administer Competency Based Teacher Assessment tools (CBTA)

……

……

17. What are the challenges affecting the implementation of Competency Based Teacher Education curriculum?

……

……

……

18. Give suggestions on how to address the challenges and improve the implementation of Competency Based Teacher Education.

……

……

……

THANK YOU

OB

KICD/RPQAC/OB/2023/5

KENYA INSTITUTE OF CURRICULUM DEVELOMENT

Nurturing Every Learner's Potential

MONITORING THE IMPLEMENTATION OF COMPETENCY BASED TEACHER EDUCATION (CBTE) CURRICULUM IN KENYAN TEACHER TRAINING COLLEGES

OBSERVATION SCHEDULE

OCTOBER, 2023

Introduction

The Kenya Institute of Curriculum Development (KICD) is carrying out a study on the implementation of Competency Based Teacher Education (CBTE) curriculum in Kenyan Teacher Training Colleges (TTCs). This observation schedule has been designed to gather information on the implementation of the curriculum.

Name of Observer: ……... Date: ……

PART A

1. Name of College: ……

2. County: ……

☐ Type of College: Public Private

4. Lesson Observed: ……

5. a) Strand: …….

b) Sub-Strand: …….....

6. Classroom Roll: Male …… Female: …… Total: ……

PART B

7. To what extent do you agree with the following statements on development and use of professional documents? ***(Use a scale of 1-5 where 1- Strongly Disagree; 2= Disagree; 3= Neither disagree nor agree; 4= Agree; 5= Strongly Agree)***

a. **Schemes of Work**

	Components of Schemes of Work	**Score**	**Comment(s)**
i.	Scheme of Work is well developed adhering to the format		

i.	Scheme of Work is aligned to the Curriculum Design		
i.	Scheme of Work is updated		
v.	Scheme of work indicates reflections for progressive improvement		
Any additional information/comment in relation to the observed components			

b. **Lesson Plan**

	Components of Schemes of Work	**Score**	**Comment(s)**
i.	Extent to which the lesson plan is aligned to the Scheme of work		
i.	Extent to which lesson plan is well developed adhering to the format: Look out for: - *Administrative details- name of institution, year, learning area, date time, roll.* - *Strand, sub-strand, SLOs, KIQs, learning resources.* - *Organization of learning* *Introduction*		

	- *Lesson development (steps of lesson: Check for evidence of formative assessment), extended activity, conclusion, reflection.*		
i.	Extent to which lesson plan is well developed adhering to the format:		
v.	Look out for:		
v.	Administrative details- name of institution, year, learning area, date time, roll.		
i.	Strand, sub-strand, SLOs, KIQs, learning resources.		
i.	Organization of learning		
Make a comment on the availability and status of lesson notes.			
Any additional information/comment in relation to the observed components.			

c. **Record of Work Covered**

	Components of Record of Work Covered	**Score**	**Comment(s)**
i.	Record of work covered is up to date		
i.	Record of work is well developed adhering to the format: *- Administrative details- name of school, grade, subject, year, term, name of teacher* *- Time frame (date)* *- Strand* *- Sub-strand* *- Lesson skill(s)* *- Work done* *- Reflection* *- Signature*		
i.	There is evidence of use of at least 3 assessment modes in tracking trainees progress (portfolio, checklists, written tests, projects, observation schedules, journals, anecdotal note etc.)		
Any additional information/comment in relation to the observed components			

d. **Lesson Observation Schedule**

Indicate the extent to which the following are evident during the course of the lesson. **(Use the key 1= Not Evident, 2= A little evident, 3= Average, 4= Evident, 5= Very evident)**

	Aspect of Lesson Delivery	**Score**	**Comment (s)**
i.	Use of learning experiences that are in line with learning outcomes.		
i.	Use of appropriate key inquiry questions during the lesson.		
i.	Use of varied pedagogies suitable for developing trainees' competencies based on intended learning outcomes.		
v.	Use of pedagogical approaches that lead to active participation and involvement of teacher trainees.		
v.	Integration of content and pedagogy during lesson delivery.		
i.	Integration the use of ICT in the lesson.		
i.	Use of varied resources during lesson delivery.		
i.	Provision of opportunities for trainees to develop core competencies.		
x.	Provision of opportunities for teacher trainees to nurture and practice values during the lesson.		
x.	Mainstreaming of Pertinent and Contemporary Issues (PCIs) when facilitating learning.		
i.	Use of formative assessment during the lesson to check on the teacher trainees' understanding.		

Any additional information/comment in relation to the observed components

TT

KICD/RPQAC/TT/2023/4

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

Nurturing Every Learner's Potential

MONITORING THE IMPLEMENTATION OF COMPETENCY BASED TEACHER EDUCATION (CBTE) CURRICULUM IN KENYAN TEACHER TRAINING COLLEGES

FOCUS GROUP DISCUSSION GUIDE FOR TEACHER TRAINEES

OCTOBER, 2023

Introduction

The Kenya Institute of Curriculum Development (KICD) is carrying out a study on the implementation of Competency Based Teacher Education (CBTE) Curriculum in Kenyan Teacher Training Colleges. Your college has been selected to take part in the study. This Focus Group Discussion guide has been designed to gather information on your experience as Teacher Trainees in relation to the implementation of the curriculum. The information you provide will be used to improve Teacher Training in Kenya. Kindly participate by responding freely in this discussion. Your responses will be treated in confidence and used only for the purpose of this study.

PART A

1. Name of College: ……

2. County: ……..

☐ Type of College: Public Private

4. Category of Diploma Programme (*Tick one*):

☐ CTE Regular

☐ CTE Upgrade

☐ ITE Regular

☐ ITE Upgrade

☐ ITE

5. Number of trainees in the group: Male …….. Female ……

PART B

6. Comment on how your teacher educators have been preparing you in the following aspects:

a) Micro teaching

……

……

……

……

b) Practicum

……
……
……
……

c) Developing professional documents

……
……
……
……

7. Comment on the pedagogical approaches used by teacher educators in your college. (***Probe for pedagogical approaches used by the teacher educators such as inquiry-based learning, experiential learning, blended learning, project-based learning etc, and their appropriateness in facilitating learning for the trainees***).

……
……
……
……
……

8. What kind of resources do you use for learning in your college? ***(Probe for the resources used by tutors to facilitate learning, other resources used by trainees get additional information, effectiveness of the resources in facilitating learning, etc.)***

……
……
……
……
……..

9. How do your teacher educators assess your progress during training? ***(Probe for the different assessment tools and methods used, suitability of the assessments, use of feedback from assessments).***

……
……
……
……
……..

10. What are the challenges affecting your training? ***(Probe challenges related to the programme itself, content, resources, subjects offered, duration, etc).***

……
……
……
……
……

11. How well is the training that you are undergoing preparing you to be a teacher? ***(Probe for how well it prepares the trainees to teach at ECDE, primary or secondary level - depending on the programme)***

……..
……..
…….
……..
……..
…….

12. Make any general comment(s) on the training you are undergoing.

……
……
……
……
……

THANK YOU