PRE-PRIMARY DIPLOMA TEACHER EDUCATION PROGRAM AND ACADEMIC PERFORMANCE OF TEACHER TRAINEES IN KISUMU COUNTY, KENYA

DOLPHINE ATIENO ONDIEK

A THESIS SUBMITTED TO THE BOARD OF POST GRADUATES STUDIES IN FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY IN EARLY CHILDHOOD EDUCATION OF JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCEANDTECHNOLOGY

DECLARATION AND APPROVAL

DECLARATION BY THE CANDIDATE

This thesis is my original work and it has not been submitted to any other university for the award of any degree or diploma. The work reported herein has been carried out by me and sources of information have been acknowledged by means of reference.

Signature…… Date…….

Dolphine Atieno Ondiek
E461/4393/2016

Approval by the Supervisors

This thesis has been submitted for examination with our approval as the University supervisors.

Sign…… Date……..

Prof. Benson Charles Odongo

Department of Special Needs Education and Early Childhood Development
School of Education, Humanities and Social Sciences,
Jaramogi Oginga Odinga University of Sciences and Technology

Sign…… Date……..

Dr. Fred Odindo Osena

Department of Curriculum and Education Management
School of Education, Humanities and Social Sciences
Jaramogi Oginga Odinga University of Sciences and Technology

DEDICATION

This thesis is dedicated to my parents, late Philip Ondiek Randa and Christine Ondiek, my dear husband Barnabas Tindo Aduke, our children Nevil, Becky, Shirley, and Everlyne.

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ABSTRACT

Early childhood education is the foundation of basic education in Kenya. However, the low academic performance of early childhood teacher trainees in Kenya has raised concerns among the education stakeholders. The Kenya National Examination Council's results of pre-school teacher training colleges indicated that most teacher trainees achieved either referral or completely failed to meet course requirement. The purpose of this study was to assess the relationship between components of pre-primary diploma teacher education program and academic performance of trainees in Kisumu County Kenya. The objectives of the study were to; to investigate the relationship between training facilities and academic performance; determine the relationship between trainer's professionalism and academic performance; establish the relationship between utilization of teaching and learning resources and academic performance and to examine the relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County in Kenya. Cognitive constructivism Theory by Jean Piaget was used to guide the study. The concurrent triangulation design within mixed method approach was adopted. The study population was comprising of 1150 teacher trainees from the 23 registered pre-primary teacher training colleges, 7 Sub county pre-primary coordinators and 23 college programs officers in Kisumu County. The study used Slovin's Formula to calculate the sample size of 297 for the trainees and a simple random sampling procedure was used to select them. However, saturated and purposive sampling technique was used to select 7 sub county pre-primary coordinators and 23 college programs officers respectively. Questionnaire was used to collect data from teacher trainees, while interview schedule was used to collect data from program officers and sub county pre-primary coordinators of ECDE. Descriptive and inferential statistics were used to analyze quantitative data while thematic analysis was used to analyze qualitative data. Trainers' professionalism, teaching and learning materials and adherence to quality control standards were found to be statistically significant and positively predicted the academic performance of trainee teachers. The study found that most of the pre-primary school colleges in Kisumu county were moderately prepared in terms of training facilities, this consequently impede good academic performance among the trainees. The study therefore recommend that both the national and county governments should put aside enough financial resources for revamping and adequately furnishing the preschool colleges with the teaching facilities. The study also recommended further research to investigate the impact of implementation preschool education policy guidelines on teaching of the teacher trainees with aim of improving quality of training in teacher training colleges.

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ABBREVIATIONS AND ACRONYM

CDE	Childhood Development and Education
CRNM	Course Requirement Not Met
CTC	Child to Child
DICECE	District Centre for Early Childhood Education
DFID	Department for International Development
DTE	Diploma in Teacher Education
ECDE	Early Childhood development Education
ECE	Early Childhood Education
ECERS	Early Childhood Environmental Rating Scale
EYE	Early Years of Education
GAS	General Academic Strand
HEIs	Higher Education Institutions
ICT	Information and Communication Technology
IPBS	Institutionalized Public Basic Schooling
KNEC	Kenya National Examinations Council
MOEST	Ministry Of Education Science and Technology
NEIMS	National Education Curriculum implementation Management System
PRESET	Pre – Service Training
PP	Pre-Primary
PPE	Pre Primary Education
PPTTC	Pre- Primary Teachers Training College
PTE	Primary Teacher Education
QA	Quality Assurance
QAA	Quality Assurance Agency

SDGs	Sustainable Development Goals
SEAMEO	Southeast Asian Ministers of Education Organization
SNE	Special Needs Education
TLR	Teaching and Learning Resource
TTC	Teachers Training College
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organization
UNESCOROSA	United Nation Educational Scientific and Cultural Organization Regional Office for Southern Africa

CHAPTER ONE

1.0 INTRODUCTION

This chapter presents background to the study, statement of the problem, purpose and objectives of the study, research hypothesis and significance of the study, limitation of the study, assumptions of the study, scope of the study, theoretical and conceptual framework, and operational definition of terms.

1.1 Background to the Study

The debate on teacher education has gained momentum in the contemporary society, thanks to the context of economic and social changes that make high quality schooling more important than ever before (Musset, 2010). Teacher education preparation in Kenya is done to meet the standards of teachers in the country and especially at pre-school level. Pre-primary program was devolved to the county government by the constitution 2010 and implemented in 2014. However, effective teacher trainee learning and achievement is hampered by among others weakness in teacher pedagogical content knowledge and classroom practice.

UNESCO-Southeast Asian Ministers of Education Organization (UNESCO-SEAMEO, 2015) contends that the quality of teacher education is a crucial factor for the success of education systems, since it is a necessary precondition for the quality of the education provided to learners. Evidence illustrates that improvements in program quality and child outcomes are often correlated with better educated and trained teachers, though it is difficult to identify the optimal duration and combination of initial education and professional development. Several studies have also found training to have positive effects on teacher behavior and interactions (Behrman, 2013; Raikes, 2015). Teachers are not only a means to implementing education goals; they are the key to sustainability and national capacity in achieving learning and creating societies based on knowledge, values and ethics (UNESCO, 2017). The pre-eminent role in the provision of quality education is recognized by the Dakar Framework for Action that states that the heart education for all lies at country levell. It also affirms that no countries seriously committed to education for all will be thwarted in their achievement of goal by lack of resources.

Furthermore, the Incheon Declaration at the World Education Forum (2015) expressed the commitment to ensure that teachers and educators are empowered, adequately recruited, well trained, professionally qualified, motivated and supported within well-resourced, efficient and effectively governed systems‘. The United Nations Agenda 2030: Transforming our world contains the Sustainable Development Goals (SDGs) (United Nations, 2015), with SDG 4 being referred to as Education 2030. Target 4.7 of SDG 4 in part states that all learners should acquire the knowledge and skills needed to promote sustainable development‖ (UNESCO, 2015a).

For this to happen, there is need for improvement in pedagogical approaches to ensure that learners significantly change in the manner in which they understand, think, and act. Quality education viewed this way is necessarily inextricably linked to the quality of teachers that an education system has and coherence between teacher education and the school system (UNESCO, 2017). The importance of teachers in quality education was also acknowledged within African region in the Kigali Statement issued by the Sub-Saharan Africa Regional Ministerial Conference on Education Post-2015 from 9-11 February 2015 (UNESCO, 2015b). The Kigali Statement committed to the Education 2030 Agenda that targets and promotes quality education for sustainable development and its provision by quality teachers. The Southern Africa Regional Conference on Teachers held in Maputo from 26-28 August 2015 followed this up deliberating on the theme. Ensuring quality through quality teachers' is hence significantly critical (UNESCO ROSA, 2017). One of the key recommendations was that teachers needed support to upgrade their skills and incorporate new approaches to remain relevant, especially in new aspects of quality education such as gender mainstreaming, education for sustainable development, inclusive education, and comprehensive sexuality education. Noteworthy in the conference report observed that the rapidly changing context and curriculum requires reflective teachers who are able to adapt to new challenges and adopt new approaches and pedagogics‖ (UNESCO ROSA, 2017).

The future of Kenya is laid upon the program of education and the society expects the program and its products who are the school teachers to develop and provide skill, knowledge and attitude (Kafu, 2011). Therefore, the quality of education depends on

the ability, hard work and dedication of the teacher. If a teacher fails to keep himself in touch with the rapid scientific and educational developments then he would become inefficient and ineffective (Rahman, 2011; UN, 2015). Training is an important part of teacher preparation programs, especially for those aspects of teaching that are more skill-like in their conception, but there are many other important aspects of teaching that can only be nurtured through reflective strategies and experiences. Training teachers is more likely to lead to diversity in practice at all levels of instruction. According to Asu (2004) there are several outcome areas that are potentially affected by teacher training program. These include teacher knowledge, teacher attitudes and beliefs, teaching practice, school-level practice, and student achievement.

Purpose of training is to generate the conditions that enable the practice to be selected and used appropriately. There are many critical elements in teacher training that should be given due attention. Hoffman and Pearson (2004) summarized from Cruickshank and Metcalf (1990) findings from literature on training in terms of the following critical elements of teacher training: Trained teachers should establish clear performance goals and communicate them to learners. They should determine learners' present skill level, and ensure that learners are aware of the requisite skill level of mastery. Teachers should also introduce only a few basic rules during early learning stages; they should build upon learners' present skill level during early learning stages. Ensure a basic understanding of the skill to be learned, and when and why it is used.

Hoffman and Pearson (2004) additionally contend that teachers should be able to provide sufficient, spaced skill practice after understanding has been developed and that practice of the skill is followed by the results; provide frequent results in the learning process and after incorrect performance; and also provide for transfer of training and provide full support and reinforcement for the use of skills in natural settings. Training of teachers provides them the knowledge, skill, and ability that are relevant to the professional life of a teacher (World Education Forum, 2015). Teacher training moulds the personality of a teacher such that their attitudes are reshaped, their habits are reformed and their personality is reconstituted through teachers training. Training is of two types: pre-service and in-service training (Ben & Ushie, 2014).

Pre-service training is the training provided before employment of teachers and is generally a pre requisite for it (Ben &Ushie, 2014). It is aimed at professional growth of the teacher and is planned and provided in such a way that it leads to the development in him/her a positive attitude towards education and towards improving his/her own performance in terms of better student learning. Many institutions and universities are involved in providing these training to teachers. Pre-service training is an essential prerequisite for teaching in primary, secondary schools of any country (Hoffman & Pearson, 2004). For Pre-Primary, there are several accredited universities and colleges offering training of early childhood teachers. However, limited information is available with regard to preparedness of such colleges in providing effective service delivery to trainees. This study will focus on these colleges.

The quality of education system of a country depends upon the academic and professional qualification of teachers of that country (Loughran & Hamilton, 2016). In the words of the Australian leading educational researcher: ‒Of all school variables…it was the teachers' professionalism which have the greatest effect on student learning outcomes‖ (Lingard, 2005, p. 174). Efforts aimed at enhancing teacher effectiveness are therefore critical for student outcomes to be achieved. The main purpose of teacher training is in effect to produce quality manpower, which becomes reliable source of effective teaching learning process. Teachers, therefore, need various tools to become successful in effective teaching. According to Burris, G (2013), there is three main factors within teachers' control that significantly influence pupil progress. These are teaching skills, professional characteristics, and classroom environment.

Teaching skills are those behaviors that the effective teacher constantly exhibits when teaching a class (Grossman, 2014). These include involving all pupils in the lesson, using a variety of activities or learning methods, applying appropriate teaching methods, and using a variety of questioning techniques to probe pupils' knowledge and understanding. On the other hand, professional characteristics refer to teachers' personality, character, qualification, training, knowledge and skills (Komba & Nkumbi, 2008). Teacher's personality is central to learning how to teach better. Qualifications and training alone do not make a good teacher. Personality, character and commitment are as important as the specific knowledge and skills that are used in

the daily tasks of teaching (Sessay, 2015). Finally, classroom climate is a measure of the collective perceptions of students regarding those dimensions of the classroom environment that have a direct impact on their capacity and motivation to learn (Jabbi, 2015).

The emphasis laid upon quality of teachers tends to demonstrate that beneficial outcome education is achievable through well trained teachers. It is however not clear how quality of teacher education in Pre-Primary teacher training colleges has impacted on service delivery to trainees, although the global scene is rife with eminent support for quality early education. Moreover, information with regard to the state of factors that might determine provision of quality training among Pre-Primary teacher training colleges is scanty. Pre-Primary teacher training have been defined in different contextual ways.

Teacher training focuses on the professional and personal development of teachers' abilities and communication skills (Gopang, 2016). These abilities and skills make teachers capable enough to perform their duties effectively. It is comprised of all those competencies (knowledge, facts, skills and abilities) which deal with the teacher‘s life as a teacher. Shahid (2007) contends that the aim of teacher training is not only to teach the teachers how to teach, but it is a training to develop the natural abilities and potentialities of teachers, to make them more dynamic and to make them skillful to produce fruitful teaching outcomes with the minimum application of energies, time and resources. Hanushek (2011) argues that improving the quality of a teacher is a central component to virtually all endeavors to raise school quality and student outcome including future competencies.

According to Aggarwal (1988), as cited in Suleman *et al,* (2011), the aims and objectives of teacher training is to develop the teacher‘s ability to: take care of himself/herself for adjustment with different physical circumstances and social surroundings; become able to understand both the child and adults; have good command and control of the subject content; the skills, expertise and experiences of the teacher; the teacher ability to do, to make observation, to deduce and to generalize, and to develop concentration and attentiveness to maximize the achievements from both human and material resources. This includes pre- primary

school teachers because pre-primary is the beginning of basic education. Many serving pre-primary teachers are unqualified in 34 of the 98 countries with data on trained teachers, less than 75% of pre-primary teachers are trained according to international standards (UNESCO, 2014). This therefore questions the assessment of pre-primary teacher education in delivering effective services in the form of training to their trainees.

It goes that training success among colleges should be embedded upon goals, context and agency theory as espoused by Hawe and Stephen‘s (1990) Theory. This means that quality of Pre-Primary teacher training should be pegged on set goals of imparting appropriate skills to trainees via appropriate contexts like training facilities. Additionally, there must be an agency (trainer) whose responsibility is to utilize the available resources for the attainment of the set goals.

According to Gopang (2016), improving the quality of education depends on improving training facilities, quality of trainers, teaching and learning resources and adherence to learning environment as outlined by quality assurance guidelines. Although educational inputs like training facilities (Amsterdam, 2010), professionalism of trainers (Glewwe, Hanushek and Ravina, 2011; Hanushek,2011), utilization of teaching and learning resources (Bizimana and Orodho, 2014) have been linked with sufficient delivery of training services among colleges for primary, secondary, and higher education teachers, Pre-Primary teachers training colleges seem to have been overlooked. Similarly, adherence to quality control guidelines among colleges has been assessed by researchers (Gudo, Olel & Oanda, 2011) with limited attention focusing on Pre-Primary teacher training colleges.

The program involves organization of procedure in sharing knowledge by taking account of the teacher and the learner to the subject matter (Ganyaupfu, 2013). The common objective of every training facility is to make lesson understandable and also interesting to the students (Nagaraju, & Madhavaiah, 2013). Most studies (Emaliana, 2017; Ekomaye, 2019; Khuvasanond, 2013; Omwirhiren & Ibrahim, 2016) have focused on how learning facilities influence educational outcomes in secondary and primary levels.

Research based evidence (Behrman, 2013; Rao, 2014) illustrates that improvements in program quality and child outcomes are often correlated with better educated and trained teachers. Additionally, teachers with more training and experience are more likely to hold child-centered beliefs and engage in similar pedagogical practices, which can be associated with better learning outcomes for children (Pianta, 2005, cited in Raikes, 2015; Banu, 2014; Thao_& Boyd, 2014). However, the quality of trainers in pre-primary teacher training colleges to inculcate sufficient knowledge and skills in teacher trainees for preschool education remains unknown.

One major input in any educational programme is the teaching and learning materials (Effiong, Ekpo & Igiri, 2015). Instructional materials are print and non-print items that are tested to impact information to students in the educational process. Instructional materials include items such as: kits, textbooks, magazines, newspapers, pictures, recording videos (Were, 2014). Learning based on goals, context, and agency theory (Hawes & Stephens, 1990) indicate that sufficient learning takes place through experience and interaction with teaching and learning resources respectively.

Although availability and utilization of teaching and learning materials as input in the learning process has been focused among secondary schools and other tertiary colleges, the same effort seems not to have been made towards pre-primary teacher training colleges. Among African countries, literature on pre-primary teacher training colleges with regard to the attributes of availability and utilization of teaching and learning resources seem not to have been sufficiently documented. For instance, Effiong (2015) assessed the impact of instructional materials in teaching and learning of biology in senior secondary schools in Nigeria and found that oral teaching alone cannot be the key to successful pedagogy; the teacher has to use instructional materials. In another, Bizimana and Orodho (2014) study in Rwanda showed evidence pertaining to how teaching and learning resources enhance learning. The result showed that teachers who utilize the available teaching and learning resources during service delivery achieve their lesson objectives. Okongo, Ngao, Rop and Nyongesa (2015) study in Kenya found a positive and significant correlation between most of the teaching and learning resources and level of classroom management and content delivery. It is becoming clearer that approaches that ensure sufficient teacher preparation among pre- primary teacher training colleges such as availability and

utilization of teaching and learning materials seem not to have been covered.

Quality control (QC) in higher education is a systematic process of assessing and verifying inputs, outputs and outcomes against standardized benchmarks of quality, to maintain and enhance quality, ensure greater accountability and facilitate harmonization of standards across academic programmes, institutions and systems (UNESCO, 2013). Quality control can take many forms, ranging from simple self-assessment to more comprehensive inspection, accreditation, review or audit(s) supported by external, independent peer review. However, limited studies are available to confirm whether or pre-primary training colleges particularly in Kenya have undergone review, accreditation or audits supported by independent peer review. Gudo *et al.* (2011) reported on data from a study that sought to explore the perceptions on the quality of service delivery in public and private universities and the opportunities for quality university education in Kenya and found that public universities did not have the necessary physical facilities to effectively offer service to its current student body. This may be due to lack of assessment process and lack of independent auditing. In another study, Meremo (2017) reported a moderate positive relationship between quality assurance policy implementation and effectiveness of quality assurance practices. In their studies, both Gudo *et al* (2011) and Meremo (2017) have articulated express concern for adherence to quality standards in education. However, their concerns seem to have only been directed at higher levels of education, overlooking assessment of pre-primary teacher training colleges.

Although program of an education system depends on the quality of the same, the concept of quality (of education) has been difficult to define. Debate on quality of education has focused on learning achievement, relevance of the curriculum to labor markets, and/or the social, cultural, and political environment in which the learner finds himself or herself and conditions of learning including teachers and facilities (UNESCO, 2014). In Kenya teacher education covers five areas of training that is university teacher education, diploma in teacher education, primary teacher education, special needs education and early childhood and development education.

According to Ndani and Kimani (2010), the notion of quality of education should go beyond student results and look at the determinants of such results including provision of teachers, buildings, equipment, and curriculum among others. On the other hand, Gudo, Olel and Oanda (2011) described quality of education as fitness for purpose

and conformance to standards. Fitness for purpose refers to purpose and utility of the product while conformance to standards is standard based approach aligned to the specified standards given by a regulatory agency. The World Bank Report (1997, cited in King'oina, 2014), Gudo et al (2011) and Luciano (2014) describe quality education as that which comprise vital in puts such as ability to implement designed curriculum, professionalism of the agents (teachers), availability and utilization of teaching & learning resources, and quality control. It is thus emerging that quality of education which is mandatory in achieving preparedness revolves around curriculum implementation, teachers, and the admitted students. However, details of these quality parameters among pre-primary teacher training colleges are scarce, and seem not to have been investigated much.

Care and development of young children is a foundation for social relations and starting point of human resource development. According to Education International (EI, 2012), early childhood is the most critical period for cognitive and social development. Children are active learners from birth, and the first years are vital, hence Pre-Primary should be recognized as a first step of basic education, as a fully integrated sector within national education systems. It is therefore mandatory that for quality Pre-Primary to be realized, competency of pre- school teachers must be ensured. In the contrary, scholars in the area of Pre-Primary have mentioned lack of quality teachers as an impediment to provision of quality education in pre-schools. (Aga Khan Foundation, 2010).

For instance, Moyo, Wadesango, and Kurebwa (2012), while investigating factors that affect the implementation of Pre-Primary in Zimbabwe found that qualifications of teachers affected their ability to deliver effective lessons. Similarly, Rotumoi and Too (2012) also established in a study carried out in Baringo (Kenya) that competency of pre-school teachers determines teaching strategies adopted. Lack of qualified educators was revealed by Githinji and Kanga (2011) as one of the challenges facing implementation of Pre-Primary teacher training colleges in Kenya.

The revelation regarding lack of qualified Pre-Primary teachers goes against the backdrop of several teacher training centres for preschool teachers spread in various parts of Kenya. Moreover, thousands of students attend teacher training centres each year, either in full time or part time basis. The rule of thumb beckons that the training

imparted to these students is adequate and would later be transferred to young learners attending preschools. However, information related to ability of the Pre-Primary training centres to impart quality education to trainees is scanty. Furthermore, teaching strategies, professionalism of trainers, availability and utilization of teaching and learning materials in these teacher training colleges for pre- primary teachers training colleges seem not to have been investigated.

Quality education is dependent largely on the achievement of set goals as looked at under the lenses of successful implementation of the curriculum. According to Vergel ,(2018), curriculum design, and relationship between teachers and students can be significant predictors of positive education outcomes. It has however not been established whether training colleges for pre-primary teachers have clear teaching strategies to aid quality training to student teachers. Mwai (2008) asserts that quality education is determined by the inputs such as curriculum content, instructional materials and equipment, school culture, teacher pupil ratio, costs and guiding policies, quality assurance, learning duration and above all the quality of the teachers and management functions.

Pre- primary diploma teacher education takes a period of three years. Teaching practice included within the two years of training. In Kenya, Certificate in pre .primary teacher education was abolished in the year 2017 after the change from 8.4.4 system of education to Competency Based Curriculum that requires more time during training and the training was changed from two years to three years. The current pre-primary teacher education program needs enough time for trainees to practice in an attached institution. Examinations are common in the teachers' preparation colleges to determine candidates' readiness and capacity of teacher education program. Qualification for entry in to a pre-primary teacher education program is that, one must have acquired a minimum of C (Plain) in Kenya Certificate of Secondary education or must have KNEC certificate course in early childhood and development and have passed. Candidates' academic achievement is assessed through grades and tests scores (MOE, 2010). Evaluation of curriculum in pre-primary teacher education is both internal and external and it takes three forms; that is continuous assessment, final examination and teaching practice. Supervision of teaching practice sessions is done by college tutors and final grade is determined by KNEC.

Performance of pre-primary teacher trainees in national examinations administered by the Kenya National Examination Council (KNEC) has remained low. However, limited information is available with regard to the assessment of the colleges for enhancing good academic performance to trainees. In particular, scanty information is available whether poor performance is due to unclear teaching strategy, low professionalism of trainers, inadequate teaching and learning resources and quality control in terms of auditing and accreditation in the teacher training Centre.

The decline in performance of teacher trainees among pre-primary teacher training colleges in Kisumu County indeed exist in comparison with other neighbouring counties which form Nyanza region that is Homa Bay, Migori, Siaya, Kisii and Nyamira. Table 1 – 5 presents performance of pre-primary teacher trainees from colleges in Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira from 2017-2021.

Table 1.1: *Pre-Primary Teacher trainee Results for 2017 among the Colleges in Homa Bay, Kisumu, Migori, Siaya Kisii and Nyamira Counties*

PERFORMANCE DURING 2017								
	Distinction	**Credit**	**Pass**	**% Pass Rate**	**Fail**	**Referral**	**Course Requirement Not Met**	**Enrolment**
Homabay	03	381	257	69	86	128	72	927
Kisumu	00	368	188	58	115	198	91	960
Migori	02	376	238	64	96	179	75	966
Siaya	02	372	241	66	94	181	68	928
Kisii	03	382	243	66	80	174	70	952
Nyamira	02	378	245	65	82	168	82	957

Source: ***Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira Counties' Education Annual Report (2017).***

Table 2: *Pre-Primary Teacher trainee Results for 2018 among the Colleges in Homa Bay, Kisumu, Migori, Siaya Kisii and Nyamira Counties*

	PERFORMANCE DURING 2018							
	Distinction	**Credit**	**Pass**	**% Pass Rate**	**Fail**	**Referral**	**Course Requirement Not Met**	**Enrolment**
Homa Bay	03	322	237	72	54	110	53	779
Kisumu	00	316	137	56	113	168	73	807
Migori	02	323	208	67	64	146	56	799
Siaya	03	324	210	67	65	148	51	801
Kisii	02	330	228	66	75	154	63	852
Nyamira	03	351	238	66	79	158	67	896

Source: ***Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira Counties' Education Annual Report (2018)***

Table 3: *Primary Teacher trainee Results for 2019 among the Colleges in Homa Bay, Kisumu, Migori, Siaya Kisii and Nyamira Counties*

	Performance During 2019							
	Distinction	**Credit**	**Pass**	**% Pass Rate**	**Fail**	**Referral**	**Course Requirement Not Met**	**Enrolment**
Homa Bay	02	292	197	74	46	91	32	660
Kisumu	00	259	108	55	75	173	52	667
Migori	03	285	178	70	57	105	35	663
Siaya	02	291	180	69	62	107	40	682
Kisii	03	290	210	70	69	99	46	717
Nyamira	01	300	222	69	63	127	41	754

Source: Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira Counties' Education Annual Report (2019)

Table 4: *Pre-Primary Teacher trainee Results for 2020 among the Colleges in Homa Bay, Kisumu, Migori, Siaya Kisii and Nyamira Counties*

	Performance During 2020							
	Distinction	**Credit**	**Pass**	**% Pass Rate**	**Fail**	**Referral**	**Course Requirement Not Met**	**Enrolment**
Homa Bay	03	243	117	74	35	66	24	488
Kisumu	00	179	85	50	55	171	43	533
Migori	03	236	137	73	35	78	28	517
Siaya	01	234	139	73	45	61	34	514
Kisii	02	240	180	72	44	81	38	585
Nyamira	02	250	209	71	39	116	37	653

Source: Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira Counties' Education Annual Report (2020)

Table 5: *Pre-Primary Teacher trainee Results for 2021 among the Colleges in Homa Bay, Kisumu, Migori, Siaya Kisii and Nyamira Counties*

	Performance During 2021							
	Distinction	**Credit Pass**		**% Pass Rate**	**Fail**	**Referral**	**Course Requirement Not Met**	**Enrolment**
HomaBay	02	181	117	74	33	56	19	408
Kisumu	00	109	79	46	71	108	38	405
Migori	02	175	101	76	31	32	23	364
Siaya	01	171	102	73	40	34	25	373
Kisii	02	210	163	73	38	77	26	516
Nyamira	02	200	170	70	33	98	27	530

Source: Homa Bay, Kisumu, Migori, Siaya, Kisii and Nyamira Counties' Education Annual Report (2021)

Tables 1 to 5 illustrate performances in pre-primary teacher training colleges in different counties in Western Kenya. The tables point out that Pre-Primary teacher training colleges in Kisumu have posted comparatively poor performance compared to the neighbouring counties during the period 2017 – 2021. The county ranks last after Homa Bay, Migori, Siaya, Kisii and Nyamira in terms of performance indicators in all the five years during which management of Pre- Primary has been devolved to county governments. The table illustrates that while Homa Bay (13), Migori (12), Siaya (09), Kisii (12) and Nyamira (10) counties had Pre-Primary teacher trainees who scored distinctions during 2013 – 2017, Kisumu County (0) had none of the trainees with distinction grade. Furthermore, Kisumu County had the highest number of: trainees who did not meet the course requirement (257); trainees with referrals (678); and trainees who failed in the final examination (399). This level of performance therefore questions the effectiveness of academic performance of teacher trainees among the Pre- Primary teacher training colleges in the area.

The performance of Pre-Primary teacher trainees in Kisumu County remains low in diploma level.

Table 6: *Pre-Primary Diploma Teacher trainee Results from 2017 to 2021 among the Colleges in Kisumu County for 2017 - 2021*

Code	Results	2017	2018	2019	2020	2021	TOTAL
1	Enrolled Candidates	960	807	667	533	405	3372
2	Distinction	00	00	00	00	00	00
3	Credit	368	316	279	229	169	1361
4	Pass	188	137	128	105	79	637
5	Referral	198	168	133	101	78	678
6	Fail	115	113	75	55	41	399
7	CRNM	91	73	52	43	38	297

Source: Kisumu County Education Annual Report (2021)

Table 6 illustrates that although enrolment of trainees have been declining since 2017 for diploma trainees, performance as indicated by grades has been declining particularly beginning 2018, one year after Pre-Primary teacher training colleges was decentralized to the counties. In all the years from 2017 to 2021 none of the students obtained distinction. Over 50% of the graduates attained credit grades in 2017, 56% attained grade pass and above in 2018; 55% in 2019 obtained pass and above; in 2020 50% obtained pass and above ; and in 2021 only 46% scored grade pass and above. The table also illustrates that 54% of the candidate were either referred, failed, or did not meet the course requirements in 2021.

1.2 Statement of the Problem

Performance of Pre-Primary teacher trainees in KNEC administered examinations has been comparatively poor in Kisumu County. For example, during the period 2017 – 2021 out of 10,785 candidates who enrolled for KNEC only 27.3% obtained pass and above. None obtained distinction; 9.1% or 981 obtained credit; while 13% or 1,396 of the trainees obtained passes. This indicates an inferior performance compared to neighboring counties which produced trainees with distinctions alongside high number of candidates with credits and passes. There is evidence that most Pre-Primary teacher training colleges from Kisumu County produced fewer qualified teacher graduates with adequate skills and competence. Pre-Primary is undoubtedly a noble step in ensuring availability of quality human capital in future, the ability of Pre-Primary teacher training colleges to produce competent and skilled teachers has attracted little attention compared to other learning institutions. Scholars have

established that for a learning institution to deliver quality training programs there must be appropriate training facilities. Equally, trainers must be qualified and competent, while availability and utilization of teaching and learning materials must also be adequate and appropriate in relation to quality control. Many studies have been conducted on pre-primary education but there is scanty information regarding preparedness of pre-primary teacher education leading to low performance. It is envisaged that component of pre-primary teacher education program such as training facilities, trainers' professionalism and quality control have a bearing on academic performance of teacher trainees in Kisumu County in Kenya.

1.3 Purpose of the Study

The purpose of the study was to assess the relationship between components of pre-primary teacher education program and academic performance of teacher trainees in Kisumu County in Kenya.

1.4 Objectives of the Study

The specific objectives of the study were:

i. To establish the relationship between training facilities and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.
ii. To determine the relationship between trainer‘s professionalism and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.
iii. To determine the relationship between utilization of teaching and learning resources and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.
iv. To examine the relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.

1.5 Research Hypothesis

The study tested the following null hypotheses:

Ho1: There is no significant relationship between training facilities used and academic performance among trainees in pre-primary teacher training colleges in

Kisumu County.

Ho2: There is no significant relationship between trainer‘s professionalism and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.

Ho3: There is no significant relationship between utilization of available teaching and learning resources and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.

Ho4: There is no significant relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.

1.6 Significance of the Study

Findings from this study may inform the management of pre-primary teacher training colleges of the status of training facilities used, trainers, teaching and learning materials, and the level of motivation of trainers. Information generated from the study may form a basis for improvement to teacher graduates from Pre-Primary teacher training colleges and consequently lead to better performance. Pre-schools where graduates from the teacher training colleges are posted may consequently gain from well trained teachers, and the outcome may spill-over to Pre-Primary learners. Findings from the study may help the county government to improve the services offered in the pre-primary teacher education. Findings from the study may provide critical information upon which formulation of Pre-Primary teacher training policy by the government can be pegged.

1.7 Scope of the Study

This study covered pre-primary teacher training colleges in Kisumu County, Kenya. It focused on the relationship between components of pre-primary teacher education in terms of training facilities, trainer‘s professionalism, utilization of teaching and learning resources, and quality control mechanisms as independent variables and academic performance in Kenya national examination council for pre-primary diploma teachers as dependent variable. Pre-Primary teacher trainees’ performance was assessed in terms of grades that is; distinctions, credit, pass; referrals, fail, and course requirement not met during 2017 – 2021 academic years. Data was collected using questionnaire and interview schedules. The respondents in the study were pre-primary teacher trainees, management of the training colleges and pre-primary sub

county education officers in Kisumu County. The study adopted mixed method approach and specifically concurrent triangulation design and was anchored on constructivist theory of learning by Jean Piaget.

1.8 Assumptions of the Study

This study made the following assumptions:

There are teacher trainers in each of the pre-primary teacher training college.

Pre-primary teacher trainees are trained on using various teaching and learning resources.

All pre-primary teacher training colleges are expected to adhere to specific quality standards by the Ministry of Education.

The researcher assumes that the sampled respondents are aware of the aforementioned elements and were willing to provide information pertaining to the same.

Sampled training colleges had adequate records in terms of filling and record keeping for references.

1.9 Limitations of the Study

The following forms the limitations of the study:

The study relied entirely on the information provided by the sampled respondents.

To mitigate this, the researcher used more than one method of data collection: questionnaire and interview schedule were used to ensure corroboration of information obtained from each source.

Some colleges and respondents were shy in providing the right information, citing confidentiality issues. The researcher used pseudonyms and anonymous codes to refer to the participants from the colleges so that they were unreachable or untraceable.

During data collection the respondents especially the second year students and the trainers were busy with the preparation for ECDE KNEC examinations and therefore time for collecting data was a challenge to the study. To overcome this, the researcher booked an appointment with the administration through phone call to secure the ideal session during school hours.

1.10 Theoretical Framework

This study was guided by the constructivism theory of learning as proposed by Jean Piaget (1970, cited in Pollard, 2006). According to Piaget, people learn through an

interaction between thinking and experience, and through the sequential development of more complex structures. Piaget asserts that knowing is not a copy of reality. Piaget further stresses that to know an object or an event is not simply to look at it and make a mental copy or image of it but to modify, to transform the object and to understand the way the object is constructed. When people encounter a new experience, they both accommodate their existing thinking to it and assimilate aspects of the experience. In constructivism, learners construct meaning from input by processing it through existing cognitive structures and then retaining it in long- term memory (Thomas & Brown, 2011). Constructivists view learning as depending on the degree to which learners can activate existing cognitive structures or construct new ones to subsume the new input (Alanazi, 2016).

The theory by Piaget was supported by Bruner (1990) who come up with the idea that the goal of education should be intellectual development. He put more emphasis on the individual and the role of culture and society. His emphasis on discovery learning was also criticized as being inefficient. Piaget‘s critics include; John Holt (1998) who was famous for writing how children learn and how they fail. According to Gardner (2000) people have intellectual capacity for example high performance in exams but have many kinds of intelligences including music, inter personal, spatial visual and linguistic intelligences. The differences in terms of training facilities, trainers‘ professionalism, teaching and learning materials and quality control may be a challenge to an educational system in terms of performance of the learners (Welberg, 1992) so trainees should be well prepared to acquire the necessary knowledge, skills and attitude during their training.

Students learn in different ways that are identifiably distinctive. Learning should be assessed through a verity of means. Jean Piaget (1970) supports practitioners in providing plenty of expressive materials in learning to allow children to represent ideas in a verity of ways.

This allows for iconic and symbolic thought. According to Bloom (1956) for learning to be successful, practitioners should develop and implement the set standards in training centers that is according to the order of complexity.

Constructivists view learning as depending on the degree to which learners can activate existing cognitive structures or construct new ones to subsume the new input (Bartlett, 1932). Constructivism theory call for the availability of inputs (resources like teachers and learning resources) and training facilities to ensure preparedness in teacher training colleges for academic achievement.

Constructivists aver that interaction between thinking and experience coupled by sequential development of more complex structures informs learning. According to Piaget (1970), encountering a new experience encompasses accommodation of existing to it as well as assimilating aspects of the new experience. Constructivism theory asserts that learners construct meaning from input by processing it through existing cognitive structures and then retaining it for a long time (Thomas & Brown, 2011). According to Alanazi (2016), by exploring play, innovation, and the cultivation of the imagination as cornerstones of learning, a vision of learning for the future that is achievable, scalable and one that grows along with the technology that fosters it and the people who engage with it is created.

The study attempted to find out whether pre-school teacher training has enhanced capacities of trainees to organize class interactions and activities that elicit accommodation and assimilation of incoming information in the cognitive structures of learners. The core role of a teacher is to create a learning environment that allows learners to activate existing cognitive structures or construct new ones to subsume the new input. Teaching and learning should progress from known to unknown to enable learners to link new ideas to the existing knowledge. It also assesses the abilities of the pre-school TTCs trained teachers' pedagogical skills in retaining attention of their students on the subject matter. Better pedagogical skills are more likely to result into better learning, hence more intellectual growth on the part of learners. With positive attitudes of teachers towards teaching and learning, learning can be made more interesting and learners get more motivated.

This can be achieved by using relevant examples which have applications in real life situations and organizing experiments to link theory to practice (Piaget, 1970).
Constructivist theory by Piaget was considered relevant in this study because

contextual issues like training facilities must be sufficient with properly designed implementation process, adequate instructional supervision and appropriate teaching and learning materials in relation to the policy guidelines for pre-primary teacher education (2018). Additionally there must be an agency (trainer) whose responsibility is to utilize the available resources under the supervision of the instructor for the attainment of the set goals (Bruner, 1980). Thus trainers and management of teacher training colleges must be adequately trained with the requisite skills to ensure that quality of pre-primary teacher training is achieved in all training colleges.

1.11 Conceptual Framework

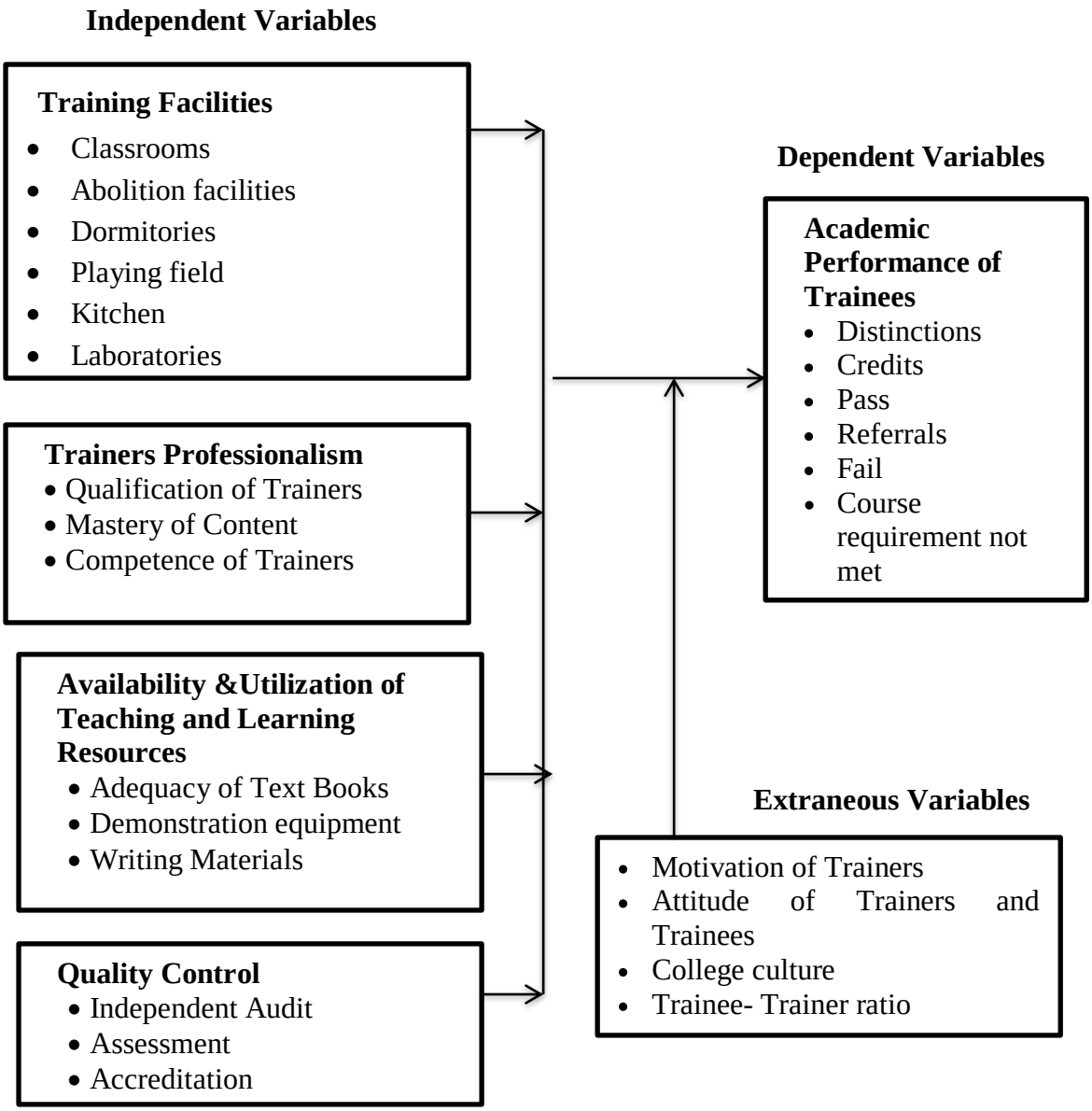
A conceptual framework is an analytical tool with variations and contexts. It is defined as a visual presentation of key variables, factors or concepts and their relationship among each other which have to be studied in the research either graphically or in a narrative form (Raikes, 2015). Thus, the colleges are obliged to ensure appropriate training facilities which are specious, professional trainers and teaching and learning resources that meet quality standards set by the Ministry of Education through auditing of the available resources. On the other hand teaching strategies should begin from known to unknown, simple to complex in order to link the new concepts with the existing knowledge during training. Interaction and activities involved should allow for accommodation and assimilation of the incoming information from the trainers to the trainees using appropriate teaching methods, teaching and learning resources and according to quality control guidelines. (Jean Piaget, 1990).

The conceptual framework of this study was based on the context of training facilities, quality of model, and utilization of teaching and learning resources. Therefore the relationship between training facilities used, trainer's professionalism, utilization of teaching and learning materials, and adherence to quality control standards and performance of Pre-Primary college graduate teachers among colleges can be presented in a diagrammatically as shown Figure 1. The figure conceptualizes that training in the Pre-Primary Teacher Training College is denoted by adequacy of T&L materials (books, demonstrating equipment, and writing materials). The figure also considers training of Pre-Primary Teacher College trainees under the lenses of quality

control denoted by self-assessment, audit through external or independent external assessors, and accreditation. Indents is illustrated in Figure 1 that quality of Pre-Primary teacher graduates depends on the appropriate training facilities, professionalism of trainers, adequacy of teaching and learning materials, and quality control. Based on constructivist theory, learning is a result of reflection and interactions with different inputs (resources, students etc) within particularly set standards or frameworks (quality). Figure 1 indicates that academic performance of teacher trainees is denoted by grades obtained by Pre-Primary teacher trainees. Training in this context was looked at under the lenses of training facilities: classroom, ablution facilities, dormitories, kitchen, laboratory, library and playground. Training was also envisaged in professionalism of trainers: qualification and mastery of content. Additionally, utilization of teaching and learning resources by an institution such as text books, writing materials as well as demonstration equipment available.

However, there exist other factors that may also determine performance of teacher trainees even in the wake of training of the Pre-Primary teacher colleges. Factors such as motivation of teacher trainers, attitude of learners, and college culture of trainees and trainers can determine performance of trainees to a large extent. For instance, poorly motivated trainers in terms of pay and remuneration and unsatisfactory working condition may impair effectiveness of teaching hence inadequate academic performance of trainees. These factors are referred to as extraneous variables in the study.

Extraneous variables are variables that may exist in a study but they are not part of the study under investigation. The extraneous variables in figure 1 were controlled by holding the extraneous variables constant. Extraneous variables were controlled through random sampling. Random sampling does not eliminate any extraneous variables; it only ensures it is equal between all the groups. If random sampling is not used the effect that an extraneous variable can have on the study result become a lot more of a concern.



Source: Researcher (2022)

Figure 1: *Conceptual Framework showing relationship between the variables*

1.12 Operational Definition of Terms

The following terms have been defined as used in the study:

Academic Performance: is the extent to which a teacher trainee attains their grades after the course

Utilization of Teaching and Learning Materials: making use of available text books, demonstration equipment, and writing resources capable of sustaining quality of graduates from Pre-Primary Teacher Training College

Early Childhood Development and Education: refer to learning activities or processes provided to children between the age of four to six

Lake region Counties: are counties within the region that is, Kisumu, Homa Bay, Migori, Siaya, Kisii and Nyamira.

Training: refers to offering services by the trainers to the trainees in the teacher training colleges using appropriate teaching methods, using the available facilities, teaching and learning materials, teacher professionalism and adherence to quality control standards for the enhancement of academic performance to teacher trainees.

Pre-primary; refers to teaching and learning processes before joining primary school.

Trainers Professionalism: refers to the qualification levels, competency levels and skill levels of instructors or teachers in Pre-Primary Teacher Training College

Program: refers to a plan on how to conduct training in the institution using the available facilities, trainer professionalism, teaching and learning resources and quality control guidelines.

Components: refers to factors of the training programs that affect learning.

Quality: refers to fitness for purpose and conformance to standards set by KNEC examination for Pre-Primary Teacher Trainees as determined by provision of teachers, buildings, equipment, and curriculum among others

Quality Control: is the systematic process of assessing and verifying inputs, outputs and outcomes against standardized benchmarks of quality, to maintain and enhance quality, ensure greater accountability and facilitate harmonization of standards across academic programs, institutions and systems (UNESCO, 2013).

Quality of Graduates: refers to grades attained in diploma or certificate examination as set by KNEC and determined by preparedness of a particular Pre-Primary Teacher Training College

Teaching and Learning Materials: refer to text books, demonstration equipment,

writing resources and equipment used in Pre-Primary Teacher Training Colleges

Teaching Strategies: is a deliberate planning and organization of teaching- learning experience in the light of psychological and pedagogical principles with a view to achieve specific goals that is the way in which content is presented in the instructional environment.

Teacher Training Colleges: are officially registered centres to provide diploma certificate for Pre-Primary teacher trainees in the teacher education centres.

CHAPTER TWO
LITERATUREREVIEW

2.0 Introduction

This chapter presents relevant literature related to the study variable. It discusses the level of academic performance in terms of training to teacher trainees. The section also reviews studies covering training facilities, professionalism of trainers, adequacy and utilization of teaching and learning resources and adherence to quality control standards. It thereafter presents a summary of the literature and the study gap.

2.1 Training facilities and Trainee Academic Performance

School facilities refer to the school buildings, classroom, library, laboratories, toilets and offices. Training facilities are relevant to effective learning and academic performance of student teachers. In support to this, Hallak (1990) identified facilities as the main contributing factors to academic achievement in the school system. The quality of the school physical facilities has been found to be a major determinant of the school learning environment (Boakye- Boaten, 2015). Most studies on educational physical facilities have however intended to focus on post ECDE like primary and higher education levels isolating pre-school education. Moreover, attention towards infrastructure among ECDE teacher training colleges has been limited going by the available studies.

In Minnesota, USA, Glewwe, Hanushek and Ravina (2011), examined studies published between 1990 and 2010, in both the education literature and the economics literature, to investigate which specific school and teacher characteristics, if any, appear to have strong positive impacts on learning and time in school. The estimated impacts on time in school and learning of most school and teacher characteristics are statistically insignificant, especially when the evidence is limited to the –high quality studies. The few variables that do have significant effects such as availability of desks, teacher knowledge of the subjects they teach, and teacher absence. While Glewwe *et al* (2011), in their literature review, covered school characteristics that affect learning outcome, the current study focused on Pre-Primary teacher training colleges that encompass all the resources and available facilities in an institution there by adding literature to the existing body of knowledge.

Suleman and Hussain (2014) examined the effects of classroom physical facilities on the academic achievement scores of secondary school students in Kohat Division, Pakistan. The study was experimental in nature and statistical data were collected through pre-test and post- test technique. Significance of the difference between the mean scores of the experimental and control groups was tested at a 0.05 or 95% level of confidence by applying t-test. It revealed that classroom favorable facilities have a significant positive effect on the academic achievement scores of secondary school students. The students of experimental group showed better performance as compared to the students of control group. While Suleman and Hussain (2014) dwelt on classroom physical facility and academic achievement among secondary schools, the current study focused on training facilities and academic performance in ECDE teacher training colleges that includes other facilities like classrooms, abolition, dormitories, play field, laboratories and even kitchen that improves the services leading to good academic performance.

Similarly, Raja and Wei (2014) explored the variables that contribute to the effectiveness of teachers training program in Pakistan for the education sector on the use of information and computer technology trainings. A sample of 111 lecturers from federal government colleges in Islamabad was taken and with the help of a research questionnaire, their responses were recorded. It was found that computer knowledge and skills have been imparted in the trainees but their effectiveness could have been increased if rigorous training need analysis had been done. The study also found that availability of physical facilities in the colleges influenced the effectiveness of trainings. It is however critical to note that Raja and Wei (2014) focused on other teacher training programs outside ECDE teacher training colleges. Since this study focus on ECDE trainees and trainers, it was suitable to collect data both quantitative and qualitative to help in corroboration of data on training facilities and academic performance of teacher trainees in ECDE Colleges.

Arshad, Haq & Khan (2020) analyzed the status of physical facilities and students' achievement at Public and Punjab Education Foundation (PEF) partner schools in Punjab, Pakistan. This was a quantitative research adopting survey procedures. Multi-stage random sampling procedure was employed to pick out the sample from Sahiwal division. The sample of the study comprised of 506 public elementary schools Head

Teachers and 146 PEF schools Principals. The researcher developed a checklist for physical facilities (CLPF), validated before data collection. The result of the study showed that Public schools had more physical facilities as compared to PEF partner schools. The annual result of Punjab Examination Commission (PEC) was taken as achievement of students. The performance of Public schools is better regarding students achievement as compared to PEF partner schools. It is highly recommended that PEF schools follow the physical infrastructure as present in public schools.

Amsterdam (2010) explored the views and experiences of educators and students as they pertain to school infrastructure in South Africa. A multiple-case study design was employed and data collected through questionnaires, observation, student drawings and individual and group interviews. Analysis revealed the state of sanitation facilities, littering and vandalism; lack of safe and inviting spaces in which to play and socialize and lack of sport equipment and facilities among students. Educators shared the concern of students about the poor state of sanitation facilities and lack of sport equipment and facilities. In addition, educators expressed concern about overcrowding and a wish for computers in order to expose students to modern day technology. However, while Amsterdam (2010) explored the views and experiences of educator and student concerning facilities, the current study involved views of pre-primary teacher trainees, college program officers and sub- county co-coordinators of early childhood education officers who are relevant in giving useful information on training facilities that may improve academic performance of teacher trainees in teacher training colleges.

In south west Nigeria, Akomolafe (2016), examined the relevance of physical facilities in enhancing the level of motivation and academic performance of senior secondary school students. The study adopted ex-post facto design. It consisted of all senior secondary school students. The study sample included one thousand and fifty senior secondary school students from three states out of the six states in south west Nigeria Geo political zone. Data collection tools consisted of questionnaire and inventory. The result of the study showed that there was a significant relationship between physical facilities and students' level of motivation and academic performance. While the above study used the ex-post facto design using questionnaire and inventory, the current study adopted triangulation design with various data

collection tools like questionnaire, interview and document analysis guide. This helped in corroboration of data on how adequacy of training facilities may affects performance of pre-primary teacher trainees in the ECDE colleges.

Similarly, Rufai, Umar and Idris (2013) conclude that implementation of curriculum of Technical and Vocational Education in order for effective teaching and learning to take place in TVE institutions cannot be achieved without adequate provision of facilities to cater for the teeming number of students in TVE institutions in Nigeria. The availability and maintenance of school facilities will enhance teaching and learning and improve TVE students' academic performance and the acquisition of practical skills for gainful employment in industries or related organizations, so that they can contribute to the development of their immediate society and the nation at large. Whereas Rufai et al (2013) focused TVE institutions; there is equally much concern on implementation of curriculum in ECDE teacher training colleges. The current study collected data in order to reveal how adequate or inadequate training facilities may affect effective academic performance of teacher trainees.

Asaaju (2012) assessed the causes of infrastructural decay in public secondary schools in Ondo State, Nigeria and their impact on quality education delivery. The study was a descriptive survey. Twenty secondary schools were randomly sampled from two local governments. Ten subject teachers from each of the 20 schools responded to a 20-item structured questionnaire. The second instrument was a checklist administered on one Head of Department or a Vice Principal in each of the 20 schools to take stock of availability and adequacy, quality, and maintenance of infrastructure. Findings from the questionnaire showed that 99.4% of respondents agreed (Yes) with a Cumulative Mean of 2.9 that availability and adequacy of infrastructure is important to quality education delivery. 91.9% of the respondents are of the opinion that inadequate funding, lack of periodic monitoring and regular maintenance of infrastructure is responsible for the prevalent infrastructural decay in secondary schools. Results from the checklist showed that available infrastructures though inadequate lack quality and are not regularly maintained. While Asaaju (2012) looked at infrastructure among secondary school, the current study covered ECDE teacher training colleges in order to reveal how adequacy of infrastructure affects academic performance of teacher trainees.

Mfreke (2016) In Nigeria examined the relationship between teachers' utilization of school facilities and academic achievement of student nurses in Human Biology in schools of Nursing in AkwaIbom State. Ex-post facto survey design was adopted for the study. The research population was One Hundred and Seventy Three (173) student nurses in Preliminary Training Session (PTS) in the three (3) accredited Schools. The findings revealed that there exists significant positive relationship between teachers' utilization of school facilities (library, laboratory, information and communication technology (ICT) center and recreation center) and academic achievement of student nurses in Human Biology. While the above study by Mfreke 2016 was done in a nursing school using ex- post facto design , the current study shaded light on pre-primary teacher training colleges by adding data via mixed method concurrent triangulation there by helping in corroboration of the valid results.

Issah, Abubakari and Wuptiga (2016) sought to identify the state of academic facilities and its influence on teachers' job stress in Tamale polytechnic in Ghana. The study adopted a case study design and. quantitative research method was adopted. Accidental sampling technique was used to draw sample from the population. A total of 114 questionnaires were used to collect data. Data were analyzed using inferential statistics, with Pearson Product Moment Correlation and multiple regression models as analytical tools. Hypothesis was tested at a significant level of 0.01 and 0.05. It revealed significant relationships between school facilities and teacher academic stress, and that status of school facilities influence teacher job stress significantly. While Abubakari and Wuptiga (2016) carried out their study in a polytechnic and used questionnaire method for data collection, the current study provided knowledge by focusing on ECDE teacher training colleges using mixed method for data collection to aid corroboration.

Locally, Mokaya (2013) sought to establish the impact of school infrastructure on the provision of quality education in public secondary schools in Kajiado County (Kenya). The target population was 3600 including 528 teachers, 1652 form three students and 1420 form four students. The study found that improved academic achievement is associated with more adequate and well-spaced classrooms, adequate and ample spacing in the libraries, adequate science laboratories, adequate water and sanitation facilities and adequate participation in co- curricular activities. This study

(Mokaya, 2013) further provides evidence of lack of focus on ECDE teacher training colleges as opposed to other sectors of education. The current study used mixed method of data collection from ECDE teacher training colleges to reveal the relationship between adequacy of infrastructure and academic performance of teacher trainees.

Chepkonga (2017) in Kenya sought to investigate the influence of learning facilities on provision of quality education in public ECDE. The study was conducted in public Pre- Primary centers in West Pokot County, Kenya. The respondents for the research consisted of Pre-Primary officers, head teachers and teachers. The research instruments used were questionnaire, checklists and interview guide. Data collected were analyzed using descriptive and inferential statistics. The research found out that there was significant relationship ($p<0.01$) between learning facilities and provision of quality Pre-Primary in West Pokot County. Majority of public Pre-Primary teacher training centers in West Pokot County were found not to have enough classes, desks, water, kitchen stores among others. Lack of adequate learning facilities influenced negatively provision of quality education. However, the results revealed that the students showed that availability of training facilities support quality academic performance in varies sectors of education. It sets a ground to see preparedness of this colleges and academic performance of teacher trainees.

Ojuok, Gogo and Olel (2020) sought to establish the influence of physical facilities on student academic performance in CDF built secondary schools in Rachuonyo South sub-County. The study objectives were: to establish the influence of science laboratory, classroom quality and computer laboratory on student's performance at KCSE. The study was guided by Education Production Function Theory based on the input and output variables. Descriptive Survey and Correlation research designs were used. The study population was 42 principals of CDF built secondary schools and 1 sub-County Quality Assurance and Standards Officer (SCQASO). The sample comprised 37 principals of the 37 secondary schools, and 1 SCQASO. Data was collected using questionnaires, interview schedule and document analysis guide. The instruments were validated for content and face validity. A test-retest correlation of $r=.7$ showed that the instruments were reliable. Descriptive statistics as well as linear multiple regressions were used in data analysis. The results of the study revealed that

the three variables, science laboratory, quality classroom and computer laboratory (which are components of physical facilities) had weak but significant relationship with student performance in KCSE. The study recommended that the Government should provide requisite facilities to guarantee quality education in CDF secondary schools. The current study filled the gap by the use of constructivism theory by Piaget that emphasizes on all aspects of learning.

2.2 Trainer's Professionalism and Academic Performance of Trainees

The impact teachers can have on the experiences and achievements of their students is widely acknowledged albeit in different ways and for possibly different reasons by various educational stakeholders. According to Gopang (2016), improving the quality of education depends on improving teacher training, among other key initiatives.

Suleman, Aslam, Habib, Gillani and Hussain (2011) in Pakistan assessed the effectiveness of the teacher training programs offered by Kohat University of Science & Technology Kohat (Khyber Pukhtunkhwa). All the heads, teachers and prospective teachers working and studying in Institute of Education & Research of Kohat University constituted the population of the study. One head, five teachers and twenty five prospective teachers were selected randomly as sample. Results showed that Bachelor of .Education Program is effective one and it meets the needs and requirements of the prospective teachers, but it has some week points: it does not inculcate Islamic ideology, distribution between theory and practice is not appropriate, it does not provide sufficient base for research and introduce modern instructional strategies.

Whereas Suleman et al (2011) focused upon four-year teacher training in a university, the current study covered teacher qualification among two years in diploma in pre-primary teacher training colleges to reveal how the same affects academic performance of teacher trainees there by filling the gap in literature.

In another study done in Texas, Varela and Maxwell (2015) explored the effectiveness of educator preparation programs from the perspective of three female Hispanic veteran teachers serving high-needs populations of students in Texas. Through a process of coding data from the informant conversations, several themes emerged: teacher concerns about behavior management, the need for strong

communication skills, the need for immersion experiences around teaching, and the need for preparation in working with diverse populations of students as well as developing confidence and a sense of efficacy for being a successful teacher. However, Varela & Maxwell (2015) only focused on preparation of three female teachers using focused group discussions without highlighting on ECDE teacher training colleges. The sample size was to low thereby lowering chances of reliability of the result. The study used a higher number of sample size to increase reliability of result, to reveal how to teacher qualification affect academic performance of pre-school to trainees in the colleges thereby adding literature to the existing body of knowledge.

Coombs (2017) examined Canadian teacher educators' approaches to assessment, with particular attention to the relationship between instructional focus (e.g., assessment, curriculum, and professional studies) and teacher educators' approaches to assessment. A quantitative design was used to examine teacher educators' approaches to classroom assessment. Results showed that teacher educators' approaches to assessment within discrete themes (i.e., Assessment Purpose, Assessment Process, Assessment Fairness, Measurement Theory), were highly consistent. Differences in how assessment and curriculum/professional studies educators integrated assessment content into the teacher education courses they instructed were also noted. However, Coombs (2017) did not use a population from Pre-Primary teacher training colleges. The current study intends to use a population from Pre-Primary teacher colleges to establish how quality trainers impact on academic performance viewed under the lenses of performance of teacher graduates.

Rahman et al (2011) examined the ways in which teacher training was related to effective teaching in terms of student achievement in Islamabad. Sample of teachers comprised of 80 female teachers with 180 girl students of grade X. It was that teacher training was positively related to effective teaching. The results of the study also indicated that there is a significant co-relation between teachers training and student test result. Still, Pre- Primary teacher training colleges were not involved in Rahman *et al* (2011).The present study focused on Pre-Primary teacher training colleges to reveal how qualification of trainers affects academic performance of pre-school teacher trainees, training of teachers and academic achievement can be confirmed in

terms of preparedness of trainers and student performance in exams.

Gossenheimer, Bem, Carneiro and de Castro (2017) compared the performance of pharmacy students from a Pharmaceutical Care course in Brazil, taught in both distance education (DE) and campus-based formats using active methodologies. Questionnaires were applied at the beginning of the semester aimed to outline the demographic profile of the students. Their grade in the course was evaluated to determine their performance. Results revealed that there was a difference in learning outcomes in the Pharmaceutical Care Course between face-to- face and distant education: the student performance was better in the distance education module, indicating distance education can be satisfactorily used in Pharmacy Programs. However, Bem et al (2017) carried out their study among pharmaceutical students and not Pre-Primary teacher trainees. Therefore, the current study collected data from Pre-Primary teacher training colleges to evaluate the effect of trainer qualification on academic performance on pre-school teacher trainees.

The population comprised of the all B.Ed. pupil teachers studying during the session 2008-2009. Analysis of co-variance was used to determine the difference in significance. It was found that B.Ed. Program was effective in bringing positive changes in teaching attitude of prospective teachers. The study concluded that there is significant impact of teacher education training on attitude towards teaching. Still, how effectiveness among trainers impact on teacher trainees in Pre-Primary teacher training colleges is not focused upon in Dwivedi and Singh (2012). The current study collected data from Pre-Primary teacher training colleges to assess how qualification of trainers affects academic performance to pre-school teacher trainees.

Hanushek (2011) combined information about teacher effectiveness with the economic impact of higher achievement. The study combined information about teacher effectiveness with the economic impact of higher achievement. The study used panel data on the value of a good teacher (compared to the average) evaluated at a given class size – say 20 students per class – the study found that, the parameters do make a large difference in the estimated impact. Results revealed that a teacher one standard deviation above the mean effectiveness annually generates marginal gains of over $400,000 in present value of student future earnings with a class size of 20 and proportionately higher with larger class sizes. Alternatively, replacing the bottom 5–8

percent of teachers with average teachers could move the U.S. near the top of international math and science rankings with a present value of $100 trillion. However, Hanushek (2011) used panel data to evaluate effectiveness of qualified teachers and not data from Pre-Primary training colleges. The current study collected data from Pre-Primary colleges to assess how qualification of trainers determines performance of teacher trainees.

Balta, Arslan and Duru (2015) reviewed the literature that deal with the effects of in-service training (IST) on teachers' achievements in Turkey by means of meta-analysis. A total of five theses, chosen through screening conducted by specified criteria, were included in this meta- analysis. It was revealed that there were not enough studies conducted in Turkey that measure the empirical effectiveness of IST and exploring the effectiveness of IST courses was demonstrated to be a virgin area for researchers. This study (Balta et al, 2015), however, the study used meta-analysis that may not be reliable being single, the current study analyzed data through descriptive statistics, inferential statistics by the help of SPSS version 22 for quantitative data and qualitative data was analyzed through thematic analysis thereby adding knowledge to the gap.

Another study by Gürkan (2018) in Turkey assessed the effects of immediate corrective feedback (delivered via a wireless FM listening system BIE) and delayed feedback on student teachers' instructional behaviors during instruction in teaching practicum. The research design was mixed-method sequential explanatory design. Data was collected from 13 teacher trainees using questionnaire. Immediate corrective feedback was found to be a more effective way than delayed feedback to help student teachers to be effective users of teaching practices such as class management, body language, voice level, use of intonation and stress, so forth. The reviewed study by (Gürkan, 2018) was done using a sample size of 13 teachers out of 397 is equivalent to 3% of the participants of the study. This means that participants were very prone to great error due to low number but the present study used a sample size of 397 respondents that will likely have low error margins. This will help in filling the gap in literature in terms of how qualification of trainers affects academic performance of trainees.

Majzub (2013) in Malaysia conducted a qualitative study reports the findings on self-evaluation reports of four teacher trainees entries as written in their teaching record books throughout the fourteen (14) weeks of teaching practicum at schools. The results of the qualitative analysis shows that the students (a) demonstrated an increasing awareness of their own learning and teaching skills and (b) students demonstrated increase ability to manage issues and problems related to their teaching experience. This lends support to the importance of self-reflection in improving self-esteem, teaching competencies and management of the teaching climate in classrooms. It is however important to note that Majzub (2013) employed solely qualitative approach without corroboration with other methods like quantitative approaches. The current study utilized a corroborative mixed method to assess how qualification of trainers affect performance of Pre-Primary teacher trainees among teacher training colleges there by adding literature to the existing body of knowledge.

In India, Rahman (2011) assessed relationship between teacher training and effective teaching. It was found that teachers had a positive attitude towards teacher training and its effectiveness in classroom situation including actual instruction/academic work, classroom management, evaluation procedures, assignments, and developing human relationships with students, principal, and society in general. It was concluded that teacher training was positively related to effective teaching. Rahman (2011) however, did not focus on teacher trainees for Pre-Primary: instead, they focused on other teachers (primary and secondary). The current study focused on Pre-Primary teacher trainees thereby adding literature to the existing body of knowledge.

Leong (2013) in Malaysia sought to determine how beginning teachers define good mathematics teaching and what they report as being the most important attributes at the secondary level. This research explored whether there was a relationship between the demographics of the participants and the attributes of good teaching. A mixed methodology (questionnaire and interviews) was used to gather information. Thirty-three respondents who had one to two years of classroom experience comprised the study sample. They had graduated from a school of education in an eastern state and had obtained their teacher certification upon completing their studies. The beginning mathematics teachers selected these four definitions of good teaching as their top choices:1) have High Expectations that all students are capable of learning;

2) have strong content knowledge (Subject Matter Knowledge); 3) create a Learning Environment that fosters the development of mathematical power; and 4) bring Enthusiasm and excitement to classroom. The three most important attributes in good teaching were; classroom management, motivation, and strong in content knowledge. While Leong (2013) sought to determine how beginning teacher define mathematic teaching which is only a single subject, The current study focused on preparedness of the institution and academic performance of teacher trainees thereby adding literature to the existing body of knowledge.

In Indonesia, Zaki, (2020) conducted a study on academic quality assurance survey in higher education. The study had a responsibility to develop the quality of education in local and national scopes which then required good academic quality control. The study aimed to describe and analyze the responses on academic service at faculty of education and teachers training at Maratime in 2018 and 2019. Research approach was quantitative model with survey design. Instruments used were online and offline questioners with collaboration with quality assurance Bureau (QAB) at the university. Findings were that; students' satisfaction on the lecturers' performance increased and English performance improved. Lecturer's punctuality showed the highest score margin between 2018 and 2019. The present research implies the urgency to adjust the weakness of the academic quality to the better condition by collecting data on a face to face thereby ascertaining the validity of the instrument used.

In another study, Suhartini, Milfayetty and Rahman (2021) explored the influence of professionalism and competence of teachers in improving the quality of education in Langsa City of Indonesia. The sample comprised of 50 Langsa public junior high schools, 2 Langsa public junior high schools and 50 Langsa public junior high schools 3 teachers were selected. The results showed that professionalism and competence simultaneously have a positive and significant effect on the quality of education in Langsa City. Similarly, Professionalism partially has a positive and significant effect on the Quality of Education in Langsa City. In addition, teacher competence partially has a positive and significant effect on the quality of education.

Maphoso and Mahlo (2015) in South Africa sought to investigate if teacher qualifications differ significantly among learners in boarding and in non-boarding schools and if they have significant relationship with academic achievement among Grade 12 learners of the Capricorn District in the Limpopo Province. A simple random sample was drawn from the population of 339 schools, comprising of 51 principals, 158 teachers and 290 learners from 51 schools. Questionnaire was used for data collection. The t-test results showed no significant difference in qualifications of teachers between boarding and non-boarding schools and no significant difference between low and high achieving schools in qualifications of teachers. The conclusion is teacher qualification is not the sole contributor in academic achievement. This can be confirmed by looking at other factors that contributes to performance like preparedness of institution in terms of trainers' professionalism through quantitative and qualitative data collection thereby helping in corroboration of data result.

Ben and Ushie (2014) in Nigeria aimed at determining the trainers' perception on the educational practices for optimization of pre-service training of quality agricultural teachers. The target population for this study was 2040 respondents comprising 1800 lecturers from universities and 260 from colleges of education. A total of 204 university lecturers and 26 college lecturers were selected for the study using simple random sampling technique. The data collected were analyzed using mean, standard deviation and independent t-test statistical tools to test the hypotheses of the study. From the analyses, it was found out that educational practice that could optimize pre-service training of quality agricultural teachers in Nigeria included among others the adoption of quality content and methodology, efficient administrative and management control. These however were not effectively utilized in pre- service teacher education training program in Nigerian Universities and Colleges of Education in Nigeria. While Ben and Ushie (2014) used statistical tests only to analyze data, the current study analysed data using both statistical tests and thematic analysis. This will help in infusing quantitative results with qualitative findings to help during interpretation and to give support for both quantitative and qualitative data.

Ndani and Kimani (2010) investigated the factors influencing early childhood development teachers' motivation in Thika district, Kenya. It specifically assessed preschool teachers' motivation levels, preschool teachers' motivators and de-motivators, and sought to come up with recommendations for policy action and interventions. The sample of the study was comprised of 40 ECD centres and 46 ECD teachers. Preschool Teachers' Motivation Questionnaire and an observation checklist were used to collect the primary data. Secondary data were obtained from various records in the ECD centers. Perhaps the ECDE trainers were not motivated which might be the cost of poor performance. Among the key findings was the revelation that the motivation levels of more than 50% of the teachers were below average. The study recommended that the Ministry of Education and communities work together to improve ECD teachers' terms and conditions of service as well as the learning/teaching environment. While (Ndani & Kimani, 2010) involved only ECDE teachers and no other ECDE stakeholders like, program officers, dean of curriculum and pre-school sub- county education officers, the current study bridged the gap by involving the trainees, program officers, dean of curriculum and pre- school sub-county officers who will respond effectively to give information regarding training in the teacher training colleges in relation to academic performance in order to fill in the gap in literature.

In Kenya, Maiyo, Ngina and Wetiba (2017), conducted an assessment of quality assurance on academic performance in public primary school in Nairobi. The study was based on structural functionalist theory. It adopted descriptive research design whereby mixed research methodology was utilized in collecting both qualitative and quantitative data. The study targeted 5 education officials, 45 head teachers, 45 deputy head teachers and 350 teachers making a target population of 445 respondents. Stratified sampling techniques were used to select educational official. Questioners were used to collect data from teachers. Data was analysed using both inferential and descriptive statistic. The findings were that; Quality Assurance and Standards officers were not visiting school physically and regularly. QASOS also did not have time with the teachers to discuss the strengths and weaknesses observed during their visit to school. It was also find that the QASOS did not organized seminars and workshop for teacher on curriculum implementation and that they concentrated on the administrative issues whenever they visited school. There was need to involve ECDE

trainers and coordinators in the management of ECDE training to improve services concerning ECDE especially performance of ECDE trainees in colleges.

Owino (2014) assessed the extent to which the quality training characters are achieved in the concurrent program at the teachers training colleges in Homa-Bay County, Kenya. The study used descriptive survey design and the instruments for data collection where questionnaire and documents analysis on a selected 258 trainees which was 30% of the target population. The study found out that teacher trainees in TTC's in Homa-Bay county were competent in subject matter even though the majority had trained to teach in secondary schools. While the above study used descriptive survey design, the current study used concurrent triangulation design that will enable the researcher to compare and contrast statistical result with qualitative findings thereby adding literature to the existing body of knowledge.

Mahulo (2012) assessed the influence teacher training on students' academic performance in mixed public secondary schools in Gem Sub County in Kenya. The study employed descriptive survey design on a sample of 58 trained and 49 untrained teachers, giving a total of107. The study showed that training alone does not contribute much to the performance of students in Gem Sub County. It confirmed that there are many untrained teachers in the district handling KCSE examination classes. While Mahulo (2012) only dwelt on influence of teacher training on performance of public secondary schools, the current study bridged the gap in pre-primary teacher training colleges where students are mature to reveal how qualification of trainers affect academic performance to teacher trainees in pre-primary teacher training colleges there by filling the gap in literature.

2.3 Utilization of Teaching and Learning resources and Trainee Academic Performance

Utilization of teaching and learning resources (TLR) refers to satisfactory or acceptable quality and quantities of material resources. According to DFID (2007, cited in Akungu, 2014), adequacy of instructional materials such as textbooks is the most cost effective input affecting student performance.

Savasci and Tomul (2013) sought to determine the relationship between the academic achievement level of 7th grade students and the educational resources of schools in

Turkey. The population of the study was the elementary schools during 2007-2008 academic years. There was a significant relationship between the school based scores. The study revealed a significant relationship between the SBS scores of the students, and the average service length of the teachers, the lack of qualified science teachers, the lack of qualified Turkish teachers, the lack of the teachers in other courses and the lack of the laboratory technicians. While Savasci and Tomul (2013) looked at the relationship between educational resources and achievement of grade seven students, the current study was carried out in a college where learners are more mature to give information regarding utilization of teaching and learning resources thereby helping in filling the gap in literature.

Lin, Chen, and Liu (2017) tested students in Taiwan to understand their opinions towards digital learning using questionnaire survey via quasi – experimental research design. Total 116 students in 4 classes were selected as the research subjects for the instructional research. The research results concluded that: digital learning presents better positive effects on effects on learning outcome than traditional teaching does, learning motivation reveals significantly positive effects on learning effect in learning outcome, and learning motivation appears remarkably positive effects on learning gain in learning outcome. However, Lin et al (2017) used only one instrument in data collection; the current study used various instruments to help in corroboration.

Gökmenoğlu and Clark (2015) sought to learn from teachers about the quality of professional development programs that were designed to support national reforms in Turkey. Ten years into a period of intensive national reform, teachers reported that professional development activities only moderately satisfied them. They speculated that _reform fatigue' may be partially responsible for relatively low teacher enthusiasm for mandatory, centrally designed training. Failure to adjust teacher development designs to meet established teacher preferences could undermine ambitious and expensive programs of national education reform. While Gökmenoğlu and Clark (2015) studied the quality of professional development program that were designed to support national reforms hence the current study collected data in order to reveal how teaching and learning resources affect academic performance in Pre-Primary teacher training colleges thereby filling the gap in literature.

Intano, Evora, Salen, Yango and Rosa (2017) sought to determine the effectiveness of e- learning materials in teaching English and academic performance among grade 11 General Academic Strand (GAS) students in Philippines. The researchers adopted the descriptive survey method of research in order to examine the perception of the students on the impact of e-learning materials in teaching English on their academic performance. In this study, the data were collected in the University of Perpetual Help System, Sto. Niño, City of Biñan, Laguna, Philippines among Grade 11 General Academic Strand (GAS) students enrolled in English subject during the second semester of Academic Year 2016-2017. The findings showed that the respondents had a positive perception of the effectiveness of e-learning materials when it comes to electronic laptop, digital tablet and LCD projector. While Intano et al (2017) focused on e-learning among grade 11 students on performance of teaching English as a subject the current study looked at training of teacher trainees in the whole academic performance thereby adding literature to the body of knowledge.

Similarly, Raja and Wei (2014) explored the variables that contribute to the effectiveness of teachers training program in Pakistan for the education sector on the use of information and computer technology trainings. A sample of 111 lecturers from federal government colleges in Islamabad was taken and with the help of a research questionnaire, their response was recorded. It was found that computer knowledge and skills have been imparted in the trainees but their effectiveness could have been increased if rigorous training need analysis had been done. The study also found that availability of physical facilities in the colleges influenced the effectiveness of trainings. It is however critical to note that Raja and Wei (2014) focused on other teacher training programs outside Pre-Primary teacher training colleges. The current study collected data using questioner, interview and document analysis guide in order to reveal how teaching methods may affect performance of teacher trainees among Pre- Primary teacher training colleges. When one uses both tools it brings out a better understanding of a problem than when one uses either by itself.

Amosa, Folasayob and Oluwatoyin (2015) investigated the instructional strategies for the promotion of effective teaching and learning in secondary schools in Odeda Local Government Area of Ogun State, Nigeria. Three research questions guided the study. The sample for the study consisted of 176 teachers in four secondary schools in

Odeda Local Government Area of Ogun State. They were drawn using the random sampling techniques. A 41 item questionnaire was used to collect data from the respondents. Results showed that teachers agreed that the manner in which the teachers approach in their teaching do not promote effective teaching and learning; that there are problems confronting the use of instructional strategies in their teaching process, and that some of the teachers find it difficult to use instructional strategies in their teaching activities in the classroom. While the above study only used questionnaire to collect data from the respondents, the current study used mixed method approach to help in increasing the reliability of the results.

Akpan, Ntukidem, Ekpiken and Etor (2016) aimed at finding out the factors that constitute challenges to teacher education in Nigeria. A sample of 200 teacher educators and 300 students randomly sampled from teacher training institutions in Akwa Ibom and Cross River States of Nigeria was used for the study. A well-structured instrument titled–Perception of Challenges of Teacher Education Questionnaire (PCTEQ) ‖ was distributed in order to explore the views and perception of respondents with regard to the factors identified as constituting challenges to teacher education in Nigeria. The result of the study revealed that both student teachers and teacher educators agreed that course contents/delivery.

Student teachers had a significantly higher perception of the challenges of teachers' education in Nigeria than teacher educators. There is no significant influence of gender of student teachers and teacher educator on their perception of the challenges of teacher education. While the above study focused on challenges facing teacher education among teacher training institutions only. The current study focused on the relationship between pre-primary teacher education and academic performance of trainees thereby filling the gap in literature.

Ogbulogo, Tayo and Olukanni (2014) examined the role of teaching aids (gadgets, resources and materials) in enhancing effective teaching outcomes and quality delivery in Covenant University, a Private University in Nigeria. Questionnaire was administered to 539 undergraduate students and the lecturers from 31 departments. Findings revealed that both students and lecturers sample agree that the cost implication of providing teaching aids especially modern gadgets to enhance teaching

is high but it is worth the investment in the long run. The significance of teaching and learning through the use of teaching aid have the potential to facilitate almost any educational experience, allowing learners use new technology and modern. Still, it is critical to note that Ogbulogoet al (2014) The findings can be confirmed by study preparedness in terms of teaching and learning resources in TTCS by use of tools like questionnaire to collect data from the respondents, the current study used a mixed method approach to collect data and this will help in giving detailed and reliable results while the study was done in a University college the current study took place in Pre-Primary teacher training colleges thereby filling the gap in literature.

Bizimana and Orodho (2014) examined the correlation between availability of teaching and learning resources and effective classroom management and content delivery in secondary schools in Huye District, Rwanda. A descriptive survey research design was used on a sample size of 619 respondents comprising 81 school administrators, 160 teachers and 378 students. A questionnaire was the main research instrument used to collect data. The major finding was that the level of teaching and learning resources in the study locale was insufficient, hence compromising the effectiveness of classroom management and content delivery. There was a positiveandsignificantcorrelationbetweenmostoftheteachingandlearningresourcesand level of classroom management and content delivery ($r=.711 p<.001$) at $\propto=.05$ level of statistical significance. While the above study focused on a population from secondary schools and used questionnaire for data collection, the current study covered Pre-Primary teacher training colleges and will ensure that corroboration of data is attained by employing mixed method of data collection to fill the gap in literature.

In Kenya, Ngure, Begi,Kimani and Mweru, (2014) conducted a study to investigate the types of instructional media in Pre-primary school colleges and tutors utilization of instructional media during training. The study was conducted in both public and private colleges in Nairobi County in Kenya. Respondent were Pre-primary college tutor who tough activity area units, program officers, managers of selected colleges. Tools used to gather data were questioners for pre-primary college tutor, interview schedule for program officers and managers of the selected colleges. Observation check list was also used to gather data. Result revealed that variety of instructional

media were available and used in teaching by the college tutor. Private college tutor utilize instructional media more than public college tutors. The finding may be confirmed in county within rural setup where training may be different in terms of facilities and the materials may not be the same. This would add literature to the existing body of knowledge.

Wagura (2015) sought to find the challenges facing mathematics teachers in utilizing instructional resources in teaching the subject; the status of in-service training of mathematics teachers; and possible solutions to the challenges facing mathematics teachers in utilizing instructional resources in Nairobi County, Kenya. Descriptive survey research design was adopted. The target population was 80 public secondary schools in the County. The population was sampled using stratified sampling techniques to include all categories of schools in the study and then proportionately sampled to give a sample size of 10 public secondary schools. The categories of schools included both girls and boys day and boarding schools as well as County/National schools. Five mathematics teachers were selected from each school yielding a total of 50 respondents. Questionnaire and observation checklist were used for data collection. The significant challenges facing teachers in utilizing instructional resources in teaching mathematics included; inadequate instructional resources, inadequate teacher professional development, heavy work load and large class sizes. The study further found out that most of the teachers interviewed were qualified and had been trained on the use of instructional resources in teaching but follow-up mechanisms like in-service training were inadequate. It is however clear that the above study only focused on challenges facing mathematics teachers in using the teaching and learning resources the current study was done in a pre-schoolteacher training colleges to determine how teaching and learning resources affect overall academic performance of the teacher trainees thereby filling the literature gap.

Ngao, Nyongesa, Rop and Okongo (2015) assessed whether availability of teaching and learning resources influenced implementation of inclusive education in pre-school Centers in Nyamira North sub-county, Kenya. The study employed descriptive survey research design on a target population of 134 head teachers in 134 pre-school centers, 402 pre-school teachers, 12 Education officers and 938 pre-school parents.

Findings revealed that there were inadequate teaching and learning resources at pre-school centers in Nyamira North sub- County. The results revealed that 78 percent of the respondents revealed that inadequate resources affected the implementation of inclusive education. While the above study focused on inclusive education in pre-schools where learners are very young and cannot give concrete information, the current study comprised of teacher trainees who are mature and are able to give relevant information thereby filling the gap in literature.

Akungu (2014) examined the influence of teaching and learning resources on students' performance in KCSE in FDSE in Embakasi district. Kenya. The study used descriptive study design, and data was collected using three sets of questionnaires for the head teachers, teachers and students. The target population consisted of all the free day secondary schools in the district, their head teachers, teachers and students. The sample consisted of 6 principals, 18 class teachers and 240 students. The study found out that teaching and learning materials were available and are utilized in schools, especially those used in classroom instruction, like chalks, dusters and charts except physical facilities are lacking and there's gross inadequacy of human resources. This resulted to overstretched resources with annual increase in enrolment rates thus compromising the quality of education. However, the above study used only quantitative method with no qualitative approach; the current study adopted mixed method approach that helped in corroboration thereby adding literature to the existing body of knowledge.

2.4 Quality Control and Trainee Academic Performance

Quality control forms a new form of regulation of higher education (Westerheijden, Stensaker and Rosa, 2007). According to Harvey and Williams (2010), quality assurance is a key element of the new managerialism'. Quality assurance is one of three types of monitoring mechanism for higher education (the other two being rankings, and accountability measures) (Shin &Toutkoushian, 2011). Regulatory techniques are associated with minimum standards and financial rewards or penalties for performance. In this regard, it is assumed that quality can be assured. Governments in most countries claim that the common aim of a quality assurance mechanism is to support both quality improvement in higher education, and ensure that higher education institutions are accountable to society in terms of effectiveness

and efficiency. It is however important to note that although quality assurance procedures have been assessed in higher learning institutions, the same seem not to have taken place among Pre-Primary teacher training colleges based on available studies.

Hsu (2017) analyzed the development of the national quality assurance (QA) system, introduced in Taiwan in 2005, and identify the impact it had on four higher education institutions Higher Education Institutions, each with a very different mission and features. A case study approach was utilized to analyze the perceived impact of the QA system on four universities. The HEIs perceive that in order to satisfy the requirements of Higher Education Institutions ACT, they have to introduce new processes and structures, and the characteristics of individual HEIs have changed as a consequence. The Taiwanese approach to QA is a hybrid of different approaches to QA, including the accreditation system borrowed from the U.S.A. Its key distinctive features are that :(a) it evaluates both teaching and research within one single assessment exercise; (b) its results are used to determine resource allocation of the higher education system; (c) it has also been used to merge and close HEIs by the government; and (d) some of the terminology used is ambiguous. Whereas the above study focused on high educational institutions in the universities, their approach could not be applied to the current study which covered Pre-Primary teacher education colleges to highlight how adherence to quality control may affect academic performance of trainees thereby helping in filling the gap in literature.

Szymenderski, Yagudina & Burenkova (2015) assessed how quality assurance can have a real, positive impact on the quality of teaching and learning at universities, considering the realities of different systems—the system of control and the system of quality culture—in using the example of two universities in Russia and Germany. The study involved 40 lecturers of technical courses and 120 third-year students of technical courses from both universities. The results have shown that the aforementioned functions are not fulfilled by both universities and a special organizational culture is not the only condition that must be met for effective evaluation efforts. However, the above study focused on a population from the universities while the current study collected data from Pre-Primary teacher training colleges to determine how adherence to quality control affects academic performance

to pre- school teacher trainees thereby adding literature to the existing body of knowledge.

Majzub (2013) conducted a qualitative study on self-evaluation reports of four teacher trainees as written in their teaching record books throughout the fourteen (14) Weeks of teaching practicum at schools in Malaysia. The results of the qualitative analysis shows that the students (a) demonstrated an increasing awareness of their own learning and teaching skills and (b) students demonstrated increase ability to manage issues and problems related to their teaching experience. This lends support to the importance of self-reflection in improving self-esteem, teaching competencies and management of the teaching climate in classrooms. However, the above study used only qualitative method of data collection from teacher trainees. The current study ensured corroboration of data by using mixed method of data collection to assess the relationship between components in the Pre-Primary teacher training colleges there by adding literature to the existing body of knowledge.

Kayode, Okunuga and Oyetola (2012) examined the effect of quality as assurance on the effectiveness of Lagos State Junior Secondary Schools, Nigeria. The factors of effectiveness that were considered included teachers' input, school leadership and learning environment. A stratified sample of 30 schools was selected from a population of 313 from the six Education Districts of the state on an equal basis of five schools from each district. Results of the analyses indicated that quality assurance has a significant effect on each of teachers' input and school leadership but not on learning environment. While the above study used a population from junior secondary schools; the present study collected data from a population of Pre-Primary teacher training colleges who are senior adults and are able to judge and assess how adherence to quality assurance affect academic performance to trainees thereby adding literature to the existing body of knowledge.

Ayeni (2012) conducted a study on assessment of principals' supervisory roles for quality assurance in secondary schools in Ondo State, Nigeria. The study employed the descriptive survey design. Target population comprised of principals and teachers in Ondo state. The results showed to most principals accorded desired attention to monitoring of teachers attendance preparation of lesson notes and adequacy of diaries of work and tasks like provision of instructional materials, reference books, feedback

and review of activities with stakeholders were least performed. While the above study was carried out in a secondary school which is junior to a training college the current study was done in a post-secondary education where students are more mature to give relevant information concerning education matters. The relevant information on pre-primary teacher education added literature to the existing body of knowledge.

Aber, Behrman,Tsinigo and Wolf, (2018) assessed the impacts of a teacher professional development program for public and private kindergartens in the Greater Accra Region of Ghana. The research design was a cluster randomized trial, where schools were randomly assigned to one of three treatment arms: (1) teacher training (82 schools), (2) teacher training plus parental-awareness training (79 schools), and (3) control group (79 schools). Moderate impacts were found on some dimensions of professional well-being (reduced burnout in the teacher training and teacher training parental awareness conditions, reduced turnover in the teacher training condition), classroom quality (increased emotional support/behavior management in the teacher training and teacher training and parental awareness conditions, support for student expression in the teacher training condition), and small impacts on multiple domains of children's school readiness (in the teacher training condition).The parental-awareness meetings had counteracting effects on child school readiness outcomes.
Whereas Aber et al (2018) assessed the impact of teacher professional development, they did not focus on how colleges offer training to provide or impart quality training to teacher trainees. The current study established how Pre-Primary teacher education adheres to the required standards to impart quality services to teacher trainees there by filling the gap in literature.

Ndebele and Tshuma (2015) sought to establish the extent to which the external quality assessment of the final year student teachers enhances continuous improvement and accountability of the teaching practice program 2-5-2 teacher education model in Zimbabwe. The mixed methods design was used to collect data in two phases. The first phase used questionnaires to collect survey quantitative data while the second phase collected qualitative data through interviews and document analysis. The study revealed that the external quality assessment process in Zimbabwe's 2-5-2 teacher education was skewed towards the achievement of accountability at the expense of enhancing continuous improvement of the teaching

practice program. However, the reviewed study was conducted on teaching practice program on the final year student teachers and like the present study involved general academic performance of teacher trainees in the training colleges there by adding literature to the existing body of knowledge.

Meremo (2017) sought to establish the extent of and the challenges facing the implementation of quality assurance policy for total quality improvement in Adventist secondary schools in West Kenya Union Conference. It used a concurrent mixed research design through purposive, simple random, and convenience techniques to identify 160 respondents from 7 accredited and two non-accredited schools (84 teachers, 9 principals, 4 BoM members and 57 students from form 3 and 4) and 6 education directors from Conferences and the Union. The findings through descriptive statistics as rated by teachers and leaders tended to agree that Quality Assurance policy was implemented and effective; while the same groups observed that challenges affecting its implementation were to a moderate extent. From regression analysis, policy indicated a moderate positive relationship (0.772) between quality assurance policy implementation and effectiveness of quality assurance practices. Still, it is critical to note that Meremo (2017) used data from secondary schools while the current study used data from Pre-Primary teacher training colleges which is the foundation of all education levels to determine how adherence to quality control affects academic performance there by adding literature to the existing body of knowledge.

Gudo,et al (2011) reported on data from a study that sought to explore the perceptions on the quality of service delivery in public and private Universities and the opportunities for quality university education in Kenya. Data was collected in May to November 2010 from a sample of 502 university students and 127 lecturers using structured questionnaires. It was found that public universities did not have the necessary physical facilities to effectively offer service to its current student body. However, Gudo et al (2011) employed a population from public and private universities and not Pre-Primary teacher training colleges. While the above study used only questionnaires to collect data from the respondents, the current study used questionnaire, interview schedules and document analysis guide to obtain data from the samples hence corroboration of data there by adding literature to the existing body of knowledge.

Ajuoga, Indoshi and Agak(2010) in Kenya investigated perception of quality assurance and standards officers about their competence in Kisumu County. The study was based on five skills; that is human relations, knowledge of the subject, supervision approach, action and report writing research. The sample size was 8 QASO who responded to a questionnaire and interview schedule. The findings of the study were that competence of QASO on the five skills was average and that they needed a further training. While the above study was carried out on QASO officers with eight participants using questionnaire and interview, the current study examined adherence of quality control in pre- primary teacher training involving trainees, trainers and sub- county coordinators of ECDE. This helped in providing more knowledge in training of educators in relation to quality standards in education there by adding literature to the existing body of knowledge.

2.5 Summary of Literature Review and Study Gaps

Teacher training has indeed received much attention in research, based on the reviewed studies. Other studies have revealed that appropriate teaching methods implemented in the school curriculum positively influence academic achievement of learners in terms of training preparations. However, much research has tended to focus on secondary education, universities, and other tertiary colleges without paying attention to circumstances in Pre- Primary teacher training colleges. This may be as a result of unclear policies to guide the area of ECDE. Moreover, limited information has been provided in the reviewed literature with regard to appropriate training facilities used in pre- primary teacher education.

Similarly, education stakeholders have agreed that improving the quality of education depends on improving teacher training, among other key initiatives. Professionalism of teachers has been directly linked with positive learning outcome of students, including teacher trainees. However, reviewed studies have tended to dwell on effectiveness of teacher professionalism on education outcomes in primary and high school, among others, other than Pre- Primary teacher education. Ostensibly, professionalism in teaching in Pre-Primary teacher training colleges seems to have been overlooked.

Utilization of teaching and learning materials such as textbooks is the most cost

effective concur that skills of teaching and learning demands must be supported by adequate teaching and learning materials. While much effort has been geared towards highlighting teaching and learning materials in primary, secondary and tertiary education, the same has received scanty attention in Pre-Primary teacher training colleges. Akpan (2016) assessed teaching materials in primary school teacher education; Bizimana and Orodho (2014) focused on teaching and learning materials in secondary schools, while Wagura (2015) concentrated on in-service teacher training for secondary schoolteachers. Minimal attention seems to have been paid in teaching and learning resources in Pre- Primary teacher training colleges.

Quality control scholars have argued that this is one of the main mechanisms for monitoring higher education to ensure that the set standards are adhered to. This mechanism is meant to support both quality improvement in higher education, and ensure that higher education institutions are accountable to society in terms of effectiveness and efficiency. However, studies (Gudo et al 2011; Majzub, 2013; Meremo, 2017; Oyetola, 2012) based their quality control research in areas (secondary schools and tertiary colleges) that were not Pre-Primary teacher training colleges. This tends to provide the impetus that little is known with regard to adherence to quality standards among Pre- Primary teacher training colleges.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the key methodological choices which underlie the study. These include the research design, the study population, the sampling design and the research tools and techniques employed in the study. Issues of reliability and validity were also addressed before outlining the data analysis criteria. At the end, ethical consideration is also discussed.

3.1 Research Design

The study adopted concurrent triangulation design of a mixed method approach (Creswell, Plano & Clark, 2003). The design was adopted because it allows for the integration of qualitative and quantitative methods, providing a multifarious view of data and enabling interpretation to emerge from multiple data sets, as espoused by Kothari, 2009 and Labaree, 2016. Creswell (2009) indicates that the design involves philosophical assumptions, the use of qualitative and quantitative approach and the mixing of both approaches in the study. The design provided the researcher with an opportunity to collect and analyze quantitative and qualitative data separately on the same phenomenon and then the different results are converged by comparing and contrasting the different results. In this study, the researcher used only one data collection phase during which quantitative and qualitative data were collected separately yet concurrently. The findings were integrated during interpretation phase of the study. Equal priority was given to both data collection methods (Creswell, 2013). The intent in using this design was to bring together the differing strength and non-overlapping weaknesses of quantitative methods with those of qualitative methods (Creswell and Plano, 2011). This design enabled the researcher to not only collect and analyze both quantitative and qualitative data, but it also involved the use of both approaches in random so that the overall strength of a study is greater than either qualitative or quantitative research. This is because all methods have limitations and therefore the researcher felt that bias in inherent in any single method could neutralize or cancel the biasness of other methods. Qualitative designs tends to collect open-ended data without predetermined responses while quantitative usually collect closed ended responses as found on questionnaire such as psychological instruments (Lewis, Saunders and Thornhill, 2007).

The researcher therefore used questionnaire and interview schedule to obtain both

quantitative and qualitative data respectively related to preparation program of teacher trainees towards academic achievement. During data collection, questionnaire were administered to teacher trainees while, program officers and the sub county coordinator for early childhood were interviewed. They provided relevant information related to study variables such as training facilities, professionalism of trainers, available teaching and learning resources, availability of other records like assessment records, evaluation, accreditation according to the policy guidelines on 2018 and records of performance of teacher trainees for the last five years. The design was appropriate for this study because the study directly compared and contrasted quantitative statistical results from questionnaires with qualitative findings from interviews .The design is presented in Figure 2.

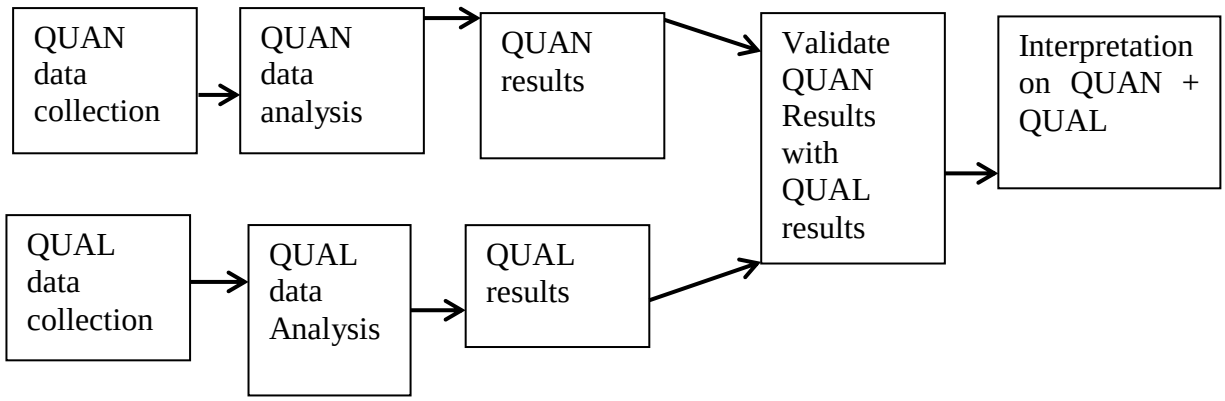


Figure 2: *Concurrent Triangulation Design of a mixed approach (Creswell, 2014)*

3.2 Area of Study

This is the place where the research is to be carried out (Orodho, 2006). This study was carried out in Kisumu County. Kisumu County is one of the 47 counties in the republic of Kenya. It is one of the counties in the lake region. It covers an area of 2085.9 km^2 with a total population of 1,155,574 (National census, 2019). The county is comprised of eight Sub Counties namely: Kisumu Central, Kisumu East, Kisumu West, Muhoroni, Nyakach, Nyando Kadibo and Seme. Kisumu County's neighbors are Siaya County to the west, Vihiga County to the North, Nandi County to the North East and Kericho County to the East while Kisii and Nyamira to the South and Homa-Bay to the South West. The county has a shoreline on Lake Victoria, occupying Western and a part of the Southern shore of the Winam Gulf. The main economic activities are fishing, agriculture, industries, transport and communication and tourism. Appendix VII, presents the map of the study area'. The county lies between latitude $00^o02'N$; $00^o11'S$ and longitude $34^035'E$ and $34^055'E$ at an elevation

of 1,131 meters above sea-level.

Kisumu County is majorly ethnically homogeneous region which is pre dominantly inhabited by Luo speaking people with a few pockets of Abagusii along its border with Kisii and Nyamira counties, the Kalenjins and the Luhya communities along theirs borders as well. The headquarters of Kisumu County is in Kisumu Central with most of the government departmental officers. It has 23 registered pre-primary teacher education Centres (Kisumu County education office, 2021).

Kisumu County was considered for the study because of the high reported cases of low performance according to data obtained from Kisumu county education office (2021).

3.3 Target Population

According to Mugenda &Mugenda (1999), population is the entire group of people, events or things of interest the researcher wishes to investigate. The study was conducted in 23 pre-primary teacher training colleges in Kisumu County. Thus, the target population in this study comprised of 1150 second year pre-primary teacher trainees registered as candidates for 2020 national examination, 23 programs officers in Pre-Primary teacher training colleges in Kisumu County and 7 Sub County Coordinators in Kisumu County. Table 7 presents the distribution of the target population.

Table 7: *Distribution of Target Population*

Sub County	Pre-Primary TTC	No. of second year trainees	Program Officers	SC coordinators of Pre-Primary
Muhoroni	2	92	2	1
Nyando	3	126	3	1
Nyakach	3	150	3	1
Kisumu C.	6	314	6	1
Kisumu E.	3	160	3	1
Kisumu W.	3	168	3	1
Seme	3	140	3	1
Total	**23**	**1,150**	**23**	**7**

Source: *County Director of Education, Kisumu (2020).*

The study targeted teacher trainees because they are the people who make use of physical facilities as well as teaching and learning materials to acquire skills, knowledge and attitude. In addition, program officers and sub county coordinators of

ECDE are the front officers who ensure that quality control standards are adhered to in as far as training services are provided to Pre-Primary teacher trainees. The program officers were concerned with the recruitment criteria they undergo, they are aware of the qualification requirements for becoming a Pre-Primary teacher trainee. They are therefore expected to be in a position to provide information in relation to appropriate training facilities, qualification of trainers, learning materials and adherence to quality control process.

In addition, the Pre-Primary program officers were targeted because they are responsible for the implementation of curriculum in each training college, and are therefore better placed to elaborate the appropriate training in each college. In other words, they are in a position to explain the appropriate training facilities, professionalism of trainers, utilization of teaching and learning materials as well as quality control systems put in place by the colleges for the benefit of the trainees. On the other hand, the Sub County coordinators of Pre-Primary were included in the study because they oversee implementation of set standards by accredited learning institutions including Pre-Primary teacher training colleges. They were therefore expected to be able to give information related to appropriate training facilities, quality of trainers, teaching and learning materials and adherence to quality control based on their over sight experiences.

3.4 Sample size and Sampling Techniques

Sample size is the number of observations or participants and/or objects taken from a population through which statistical reference for the whole population are made (Wolverton, 2009). The sampling frame for this study was derived from Pre- Primary teacher training colleges and the County Director Education office. Sampling is the process of selecting people or objects from a population in order to test the population or something (Kombo & Tromp, 2006).

3.4.1 Sample Size

Sample size refers to the number of items/participants to be selected from one universe to constitute a sample. Sample size should not be too large or too small but optimum (Kothari and Guarav, 2015). On the other hand, sampling technique is a research method used for selecting a given number of subjects from a target population as a representative of the population (Wolverton, 2009). A sample is a

smaller group or sub-group obtained from the accessible population (Mugenda & Mugenda, 2005). This subgroup is carefully selected to be representative of the whole population with relevant characteristics. Each member or case in the sample is referred to as respondent or participant. There are several techniques for determining the sample size.

The study used Slovin's Formula to calculate the minimum sample size needed for the trainees. Slovin's formula is calculated as: $n = N / (1 + Ne^2)$; where: n = sample size, N = population size, e = acceptable margin of error. Using the formula with N=1150 and e= .05, the estimate sample size for the trainees was 297 which is about 25.8% of the population. This proportion is also in line with recommendation of Kasomo (2007) who asserted that 10% to 30% of accessible population is appropriate. For qualitative data, interviews were conducted to 23 program officers and 7 sub county pre-primary coordinators education officers in-charge of ECDE provided records to gather information about preparedness of trainees. Mason (2010) suggests that 10-30 participants of the entire population is enough to give useful information for qualitative research.

Therefore, the sample size of the study comprises 297 second year pre-school teacher trainees, 23 college program officers and 7 sub county pre- primary coordinators giving a total of 327 respondents. Table 8 presents the distribution of the sample size. The percentage of sample size was appropriate because when the percentage of the population is higher the higher chance of validity is reached. Table 7 presents the distribution of study sample size.

Table 8: *Distribution of Sample Size*

Respondents	**Population**	**Sample Size**	**Percentage**
Second year teacher trainees	1,150	297	25.8%
Trainees Program officers	23	23	100%
Sub County Coordinators	7	7	100%
Total	**1,180**	**327**	

Source: Researcher (2022)

3.4.2 Sampling Techniques

Sampling is a procedure or a process of selecting a sub-group from a population to participate in the study. It is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which

they were selected (Kombo & Tromp, 2006).

The study involved simple random, purposive and saturated method of sampling to sample teacher trainees, college officers and college sub county pre-primary coordinators respectively. Simple random sampling is a type of probability sampling in which the searcher randomly selects a subset of participants from a population. In this study, simple random sampling was used to select 345 second year teacher trainees out of a total of 1150. Each trainee had an equal chance of being selected. Purposive sampling, which is also known purposeful or selective sampling, was used to deliberately select the trainees' program officers and the sub-county coordinators because of their ability to offer in-depth, precise details on components of pre-primary diploma teacher education program. Lastly, saturated sampling method was adopted in reaching the appropriate number of interviewees of trainees' program officers and the sub-county coordinators. The concept of saturation was considered because it relates to the number of interviews conducted in qualitative research. It was envisaged that data saturation occurred when the researcher had collected sufficient data to draw the necessary conclusions, and collecting any further data would not have produced value-added insights.

3.5 Data Collection Instruments

Data collection instruments involve operationalizing the research design into instruments of data collection with a view to collecting data in order to meet research objectives (Mugenda & Mugenda, 2008). The study combined both quantitative and qualitative techniques of data collection. A combination of both techniques was preferred because they complement each other. Primary data was generated through designed Likert scale questionnaires for second year pre-primary teacher trainees and interview schedule for college program officers and sub county coordinators for ECDE.

Questionnaires were used for second year pre-primary teacher trainees because their cost-effectiveness in data collection when the sample size is large. Besides it ensured anonymity thus encouraged honest responses from the trainees. The respondents often feel more comfortable expressing their true opinions in questionnaires, especially when their anonymity is guaranteed. On the other hand, use of interview schedule allowed the researcher to get more information, since they could ask follow-up

queries or clarifications to the questions they have prepared. Thus, the information gathered was not only more relevant it also increased the reliability and credibility of data gathered.

3.5.1 Questionnaire for Second Year Teacher Trainees

Questionnaire is an instrument specifically designed to elicit information that is useful for analysis. They are primarily survey research tools (Babbie, 2009). A total of 345 structured questionnaires with Likert-type measurement scale were administered on the sampled second year Pre-Primary teacher trainees who gave a rich data. The questionnaire was designed in six parts. Part I sought to capture the respondent's personal data while Part II to V were designed in Likert–type scale to assess the opinions of respondents on various parameters of the study. The response format in the questionnaire comprised a five –point likert scale; Strong Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD). The questions were framed in the sequence of the study objectives to enhance clarity and meaning to the respondents with respect to each variable. The questionnaires were administered by the researcher.

An introductory cover letter (Appendix 1) was designed for introducing the researcher to the respondents and institutions. A consent form (Appendix 2) was issued to the study respondents to sign that they voluntarily accepted to participate in the study. The researcher ensured the respondents do not write their names or identity in the questionnaire. The self-administered questionnaire was ideal, easy to administer and flexibility to expression of opinion by respondents on the study subject. Given the large number of respondents sampled under this group, questionnaires were the most suitable method for collecting data. On the other hand, questionnaire enables one to gather more objective responses. Questionnaire prevents the researcher from getting into issues that are not relevant to the study (Gay, 2002). Appendix III presents the study questionnaire.

3.5.2 Interview Schedule for College Program officers

Interview is a process of communication or interaction in which the subject or the interviewee gives the needed information verbally in a face to face situation. Interviewing as a research technique involves the researcher asking questions and hopefully receiving answers from the people being interviewed (Kombo & Delno,

2009). Interviews as research instruments have the benefit of allowing the researcher to follow up responses that may not be expected. Bailey (2007) holds that semi structured and structured interviews are widely used in inflexible qualitative design. The researcher designed an interview schedule that was instrumental in guiding the discussions and facilitating data collection from the 23 programs officers in charge of Pre-Primary in the study area **(**appendix IV). The interviews were recorded by the researcher using audio voice recorder with the interviewee's knowledge. The researcher ensured that all questions and responses were interpreted and recorded correctly to enhance clarity of meaning and completeness of the study. Each interview took between 30 and 40 minutes.

3.5.3 Interview Schedule for Sub- County Coordinator

In the study, the researcher conducted an interview to the 7 sub- county coordinators because of their position in line with the training of pre-school teacher trainees. According to Bailey (2007), the interview used semi structured question which are organized according to study variables. The officers were to give their views in terms of preparedness of the colleges like training facilities, teacher professionalism, utilization of teaching and learning resources and adherence to quality control and academic performance as in appendix V. interviews were recorded, transcribed and codded and transcribed for analysis. Interview took 30 minutes.

3.6 Validity, Reliability and Trustworthiness

3.6.1 Validity of Instruments

Validity refers to whether the operationalization and scoring of the cases to reflect the concept being measured by research instrument. It is the meaningful and useful inferences one can draw from the scores on particular instruments (Creswell, 2009). Validity is the extent to which the results of a test are warranted, which depends on a particular use the test is intended to serve (Kimbalin & Winterstein, 2008).

3.6.1.1 Construct Validity

Construct validity is the degree to which inferences can legitimately be made from the operation to the study to the theoretical constructs on which those operations were based (Trochim& Donnelly, 2008). Construct validity was ascertained by clearly defining the variables being measured based on a theory underlying the variables and testing the hypotheses logically and empirically by concurrent triangulation principle.

3.6.1.2 Content Validity

Content validity is how accurate an assessment or measure tool taps in to the various aspects of specific construct in the question. Content validity was achieved by the help of two supervisors from Jaramogi Oginga Odinga University of science and technology who went through the items to ascertain the adequacy of the items. To this end, the designed instruments were discussed and counter checked by the researcher‘s supervisors in order to improve the contents of the instruments and to ensure their content validity.

3.6.1.3 Face Validity

Face validity also called logical validity is the simple form of validity where one applies a superficial and subjective assessment of whether or not the tests measure what it is supposed to measure (Kimberlin & Winterstein, 2008), Face validity ascertained that the measure appears to be assessing the intended construct understudy. Validity subjectively assesses the correspondence between the individual items and the concept through rating by expert judges.

3.6.2 Reliability of Instruments

According to (Mugenda & Mugenda, 2002) reliability is the degree of consistency that the instruments demonstrate. Shushil and Verma (2010) assert that reliability is the extent to which results are consistent over time. Shushil and Verma (2010) affirm that variables derived from tests instruments are declared to be reliable only when they provide stable responses over a repeated administration of the test. If the same results of the study can be produced under a similar methodology then the research instrument is considered to be reliable. To ensure instrument reliability, a pilot study was conducted in order to pretest whether or not the instruments were relevant and the contents were appropriate. According to Conelly (2008) suggests that a pilot study sample should be at least 10% of the sample projected for the larger parent study. During piloting, 14 teacher trainees, 2 trainers and 1 sub county coordinator of ECDE from participated. The pilot testing of the questionnaire was done to enable clarification of issues arising from the questionnaire. T. test is a statistical test that is used to compare the means of two groups and it is used in hypothesis testing to determine whether a process actually has an effect on the population of interest, or where two groups are different from one other, (Yim, 2015)

Internal consistence of reliability of the instrument was then ascertained using Cronbach's alpha test. Mohsen (2011) posits that the recommended Cronbach's alpha is 0.7-0.9 and that a high value of alpha > 0.9 suggests redundancies of the test items. The researcher computed the reliability for multi-item opinion items separately for all the five sub-scales in the teacher trainees' questionnaires. Table 9 which shows the Cronbach's Alpha coefficients for questionnaire reveals that the instruments had adequate reliability for the study.

Table 9:

Cronbach's Alpha Results for Questionnaires

Scale	No. Items	Cronbach's Alpha	**Conclusion (Reliable/Unreliable)**
Training facilities used	9	.743	Excellent
Trainer's professionalism	9	.757	Good
Utilization of available teaching and learning resources	8	.831	Very good
Quality control	10	.744	Acceptable
Academic Performance of Teacher Trainees	6	.853	Very Good

Source: Researcher, 2023

Given that the minimum acceptable value for Cronbach's alpha is 0.70 and a maximum expected value is 0.90 (Mohsen & Reg, 2011), all the sub-scales reached a threshold and were within the range. For example, the sub-scale of training facilities which relied on questionnaire composed of 9 items had internal consistency of α = .743; trainer's professionalism recorded α = .757 (9 items), Utilization of available teaching and learning resources recorded α = .831 (8 items), while quality control α = .744 (10 items) and academic performance of teacher trainees recorded α = .853 (6 items). This implies that all the items of each of the sub-scale were worthy of retention. It was also noted that all items were correlated with the total scale to a good degree. A correlation with the total scale of above .90 would have meant that there redundancy and duplication of items. These findings show that the questionnaires were generally suitable for data collection; because they adequately measured the constructs for which they were intended to measure.

3.6.3 Piloting

A pilot study was conducted to ensure reliability in the measuring instruments. The pilot study was conducted in two pre-school teacher training colleges from the neighbouring county of Homabay to measure reliability of the questionnaires. The colleges chosen were close to the border and hence they had similar characteristics of the colleges in the county of the study. The two colleges were selected using purposive sampling method, so as to represent all the categories. The objectives of a pilot study was to test all aspects of the research proposal and identify issues. Pretesting helped the researcher to specifically test a research instrument so as to evaluate if the instruments were able to collect the needed data and if the questions were clear to respondents. The researcher made corrections in the final data collection tools on areas that were identified during piloting.

3.6.4 Trustworthiness and Authenticity of qualitative data

Trustworthiness of a research study was important in evaluating its worth, hence Lincoln and Guba (1985) describes it as a series of techniques that can be used to conduct a qualitative research that achieves the criteria they outline. Credibility of a research seeks to ensure that the study measures or tests what it actually intended for. Transferability is the extent to which the findings of one study can be applied to other situations. The concern often lies in demonstrating that the findings of the work at hand represent the intended research findings and may be applied in a similar situation in a different population.

Dependability means that if the same content is repeated in a similar method with the same participants, a similar result is obtained. Conformability is where qualitative investigator‘s comparable concern to objectivity. Steps were followed to ensure findings are the results of the experiences and ideas of the participants, rather than the characteristics and preferences of the researcher. The role of triangulation in promoting conformability was emphasized to reduce the effects of the researcher‘s biasness Lincoln and Guba (1995).

3.7 Diagnostic Tests

The study sought to investigate the assumptions and suitability of the data for the simple linear and multiple regression analysis. Preliminary analyses had to be performed to ensure no violation of the appropriate assumptions; this was done

through a diagnostic test. The data had to meet the necessary assumptions in order for multiple regressions to give valid results. First, just to make sure that the scales of measurement for the data were suitable for multiple regression analysis, the measurements were converted into continuous scales for both the independent and dependent variables. Besides these, diagnostics test conducted included; normality of the data, multi-collinearity, independence and homoscedasticity.

3.7.1: Normality of the data

Normality of the data were tested through the use of formal test using Kolmogorov-Smirnov and Shapiro-Wilk tests, as shown in Table 10.

Table 10:
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Training facilities used	.087	345	.024*	.848	345	.213
Trainer‘s professionalism	.121	345	.229	.944	345	.244
Utilization of available teaching and learning resources	.124	345	.147	.971	345	.412
Quality control	.119	345	.331*	.975	345	.313
Academic Performance	.120	345	.321*	.961	345	.094

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction
Source: Researcher, 2022

Table 10 shows tests of normality using both Kolmogorov-Smirnov and Shapiro-Wilk test. Although the SPSS output of the Normality test simultaneously show both Kolmogorov-Smirnov and Shapiro-Wilk test results. This study used Kolmogorov-Smirnov to interpret the normality of the variables because Shapiro-Wilk’s W is recommended for small and medium samples up to n=200 only, as suggested by Garson (2012). K-S is analogous to the correlation between a given data and its corresponding normal scores, with K-S = 1 when their correlation is perfectly normal. This implies that a significantly ($p<.05$) smaller K-S than 1 means that the normality is not met. Hence, the data is normal when both Kolmogrov-Smirnov and Shapiro-Wilk (W) >.05. It is evident from Table 10 that all the variables had a normally distributed data given that there were no statistical significant differences noted in any of the variables with their corresponding normal scores.

3.7.2: Test of Assumptions of Multi-collinearity

Multi-collinearity is unacceptably high level of inter-correlation among the independent variables, in manner that the effects of the independent variables on the dependent variable cannot be separated from each other (Leech, Barrett and Morgan, 2005). When multi-collinearity exists between variables, relative effects of the explanatory variables are exaggerated and therefore unreliable. The correlation matrix was used to check for pattern of inter-relationship among the variables in the study, as shown in Table 11.

Table 11:

Correlation Matrix of Study's Variables for Test of Multi-collinearity

		AC	TFU	TP	UTLR	QC
AC	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	345				
TFU	Pearson Correlation	.334**	1			
	Sig. (2-tailed)	.000				
	N	345	345			
TP	Pearson Correlation	.421**	.398**	1		
	Sig. (2-tailed)	.000	.031			
	N	345	345	345		
UTLR	Pearson Correlation	.415**	.365**	.443**	1	
	Sig. (2-tailed)	.000	.048	.000		
	N	345	345	345	345	
QC	Pearson Correlation	.462**	.225**	.454**	.336**	1
	Sig. (2-tailed)	.000	.021	.000	.000	
	N	345	345	345	345	345

**. Correlation is significant at the 0.05 level (2-tailed).

Source: Researcher, 2022

All the correlation coefficients were less than 0.8 implying that the population data was free of singularity, meaning there was no multi-collinearity. Huck (2010) recommends that inter-correlation among the independent variable beyond .08 is a sign of multi-collinearity and should be put to further scrutiny.

Although correlation matrix of the independent variables was used to indicate signs of lack multi-collinearity among the variables, it is not adequate as observed by Leech,

Barrett and Morgan (2005). Hence, this study further assessed the multi-collinearity issues by examining tolerance and the Variance Inflation Factor (VIF) which are some two Collinearity diagnostic factors. Table 12 shows SPSS output indicating tolerance and Variance Inflation Factors.

Table 12:
Tolerance and Variance Inflation Factor (VIF) Statistics

Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	Training facilities used	.553	1.808
	Trainer‘s professionalism	.695	1.839
	Utilization of available teaching and learning resources	.598	1.672
	Quality control	.711	1.406

a. Dependent Variable: academic performance
Source: Researcher, 2022

Table 12 illustrates that tolerance is the percentage of variance in the predictor that cannot be accounted for by the other predictors. Hence, very small values indicate that a predictor is redundant, and values that are less than .10 may merit further investigation. The variable's tolerance is $1\text{-}R^2$, while VIF is its reciprocal. A variable whose VIF value is greater than 10 may merit further investigation (Leech, Barrett and Morgan, 2005). A small tolerance value indicates that the variable under consideration is almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation. From Table 3.6, it is evident that collinearity conditions were met, given that each of the variables had adequate tolerance (tolerance value > .10) and Variance Inflation Factor (VIF <10). These findings indicate that there was no violation of multi-collinearity assumptions which is a requirement for multiple regression analysis, which the study used.

3.8 Data Collection Procedures

Data collection procedure commenced after the proposal had been accepted and approved by the university supervisors. An introductory letter was acquired from Board of Post Graduate Studies of Jaramogi Oginga Odinga University of Science and Technology after a consent letter from the Institutional Review Board. Permission to proceed to the field for data collection was sought from the National Commission for

Science, Technology and Innovation (NACOSTI), and then permission from the Kisumu County Early Childhood Education office was also acquired for the study.

The data collection tools were discussed before issuing to the respondents. This ensured uniformity in interpretation of the variables covered in the study instruments. Standardization of the format for administering the tools and familiarization with the codes was done in order to minimize cases of wrong entry. The researcher booked appointments with the sampled participants in advance to facilitate the interview process.

Immediately after the interviews the recorded interviews were read back to the respondents in order to confirm that they were true record of the conversations. This was only for those interviewees who did not approve fully their conversations to be audio recorded. The audio recorded conversations were played back to participants.

3.9 Data Analysis

This study collected and analyzed both qualitative and quantitative data.

3.9.1 Quantitative Data Analysis

Quantitative data from questionnaire was analyzed using both descriptive and inferential statistics by the help of SPSS version 23.0. According to Wolverto (2009), descriptive analysis involves a process of analyzing data through mean, standard deviation, frequency counts and percentages, while inferential statistics is concerned with making predictions or inferences about a population (Nachmias & Guerrero, 2008), of which in the present study, regression analysis was used to assess the relationship between the variables as well as for testing of the study hypotheses. Table 14 presents the data analysis matrix.

Table 14:

Quantitative Data Analysis Matrix

Null Hypothesis	Independent Variable	Dependent Variable	Statistical Test
There is no statistically relationship between training facilities used and academic performance among trainees in pre-primary teacher training colleges in Kisumu County	Training facilities used	Academic performance	Descriptive statistic and Regression analysis
There is no statistically significance relationship between professionalism level of trainers and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.	Trainer‘s professionalism	Academic performance	Descriptive statistics and Regression analysis
There is no statistically significance relationship between utilization of teaching and learning resources and academic performance among trainees in pre- primary teacher training colleges in Kisumu County.	Utilization of available teaching and learning resources	Academic performance	Descriptive statistics and Regression analysis
There is no statistically significance relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County.	Quality control	Academic performance	Descriptive statistic Regression analysis

Source; Researcher 2022

Data was also be analyzed according to indicators of the variables as summarized in the Table 15

Table 15:
Variables and Indicators

Variables		Indicators
Dependent	Academic Performance (Y)	Performance of teacher trainees
Independent	Training facilities used (X_1)	Classrooms, Kitchen, dormitories,
	Trainer's Professionalism (X_2)	Records showing academic qualification, will be observed and experience.
	Utilization of Teaching and learning Materials (X_3)	Text books, writing and drawing materials, demonstration equipment
	Quality Control (X_4)	Independent audit, assessment, Accreditation

Thus, status of training facilities, Trainer's Professionalism, teaching and learning materials, and adherence to quality control standards was compared with academic performance to pre- primary teacher trainees. These variables were tested from a general multiple regression equation of the form:

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$

Where:

Y = Trainees' Academic performance (Scores)

X_1= Training facilities

X_2 = Trainer's Professionalism

X_3 = Utilization of Teaching and learning resources

X_4 = Quality control

a = Level of trainee performance when pre-primary teacher training level is zero

e = error term

3.9.2 Qualitative Data Analysis

Qualitative data was analyzed using Thematic Analysis. The qualitative data obtained from interviews were analyzed thematically. This involved coding and categorizing generated answers into outstanding themes and reported in narrative forms. The qualitative data was used to compliment the information obtained from quantitative data. The study adopted Thematic Data Analysis approach because it is a flexible and easily accessible method for analyzing qualitative data, (Braun & Clarke, 2006). Additionally, as cited by Raburu (2011), it is a method for identifying and analyzing patterns (Themes within the data). This approach enabled the researcher to identify, analyse and report patterns within data. This examination of the collected data helps

the study to understand the subject at hand (Denzin & Lincoln, 2005). Borgdan and Biklen (2003) maintain that n deductive process of analyzing data is important in order to present the participants' perspectives as accurately as possible. The process of analyzing qualitative data in this research was inductive and is explained below.

Thematic analysis is the process of creating meaning from data in a complete and credible way, articulating several steps. The researcher in this case was therefore professionally and ethically bound to provide a data analysis process that carefully and rigorously connects with the evidence produced. To prevent bias and to strengthen validity, the interpretations were continually challenged for alternative explanations. After developing codes and identifying themes, an expert from the department of Pre- Primary who was well versed with this method of analysis was approached to check that the development of codes and the meanings attributed to them were consistent. The analysis entailed reading, re-reading, coding, re-coding, summarizing, combining data, creating categories, patterns and eventual themes. This study was careful not to strip data from the context' by retaining and counterchecking with the initial key data file (Punch, 2009).

Process of categorizing data helped in linking and examining how data from participants are related to the main issue being investigated as emphasized by Green (2007): to enable researchers to make sense of what understanding the participants share about a common aspect. Therefore, this made the study to derive sense of the experience of the participants in the different categories in the study and also report on what experiences they have in common in their life experiences. The transcriptions were also read several times to the respondents to confirm the written spoken words by respondents.

During the coding process, the researcher re-examined the already coded data to establish how they could be linked. Further re-reading was also done and a detailed examination carried out to categorize the different ways the research participants were talking' about the issue under investigations. The study examined whether the codes share a relationship relevant to the study. This link was in turn given different experiences from the respondents. These experiences were given descriptive labels and these thereafter became the subthemes, because in trying to do the explanations

for the different labels, some of them would fit within one label better than the others sources. In other words some sub-themes were broad and had to be collapsed to get a better fit while others had to be combined with different categories while others were making sense the way they are linked initially.

Identifying themes involved examining the linked experiences in all the categories to ensure coherence with the labels and how these fit into the whole data set. The study explained the different experiences under themes. Although the researcher's role in the analysis process was criticized as not being fully neutral, the identity of a researcher and locale as posited by Denscombe (2007) plays a role in the analysis of data. The interview was not only considered as an interpersonal encounter, but also as a social one and simply not a data collection exercise. As much as possible, the researcher kept an open mind when interpreting data (Denscombe, 2003). Therefore, while analyzing, familiarizing with data in order to choose relevant text, coding, creating categories and identifying themes, there was a meeting of minds between the participants' experiences and the researcher during the interviews and the themes to be identified were expected to be a true communication of the meaning of the respondents' views and, according to Flick (2009), reliable and valid. Six steps of Thematic Analysis were followed in thematic analysis as presented in Table 16.

Table 16:

Steps of Thematic Data Analysis

Phase	Description of the Process
1.Farmiliarizing yourself with data	Reading data, reading and re-reading the data noting down initial ideas.
2.Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3.Searching for themes	Grouping codes into potential themes, gathering all data relevant to each potential theme.
4.Reviewing the themes	Checking if themes work in relation to coded extracts and the entire data set. Generating a thematic map of the analysis.
5.Defining and naming the themes	Ongoing analysis to refine the specifics of each theme, and overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, extract examples, final analysis of selected extracts, relating back the analysis to the research question and literature, producing a scholarly report of the analysis.

Source: Adapted from Braun and Clarke (2006)

Table 16 illustrates the 6 phases of thematic analysis for generating themes stipulated by Braun and Clarke (2006). The study adopted deductive approach to analyze

qualitative data. This is a systematic procedure for analyzing qualitative data where the analysis guided by specific objectives (Liu, 2016). Qualitative data was used to examine the perception of the trainers and sub county coordinator of pre- primary education who were in charge of evaluation and supervision of training centers towards academic performance.

The central premise for the qualitative data was to examine the views and perceptions of Sub County Coordinators and College Program Officers on preparedness of pre-primary teacher education program and academic performance of teacher trainees in Kisumu County. The qualitative data obtained was organized and reported in themes which captured important items in the data in relation to the research questions and showed some level of patterned response according to Braun and Clerk (2006).

Verbal quotations were transcribed, coded as sub-themes and themes. Identities of the participants were made anonymous by use of initials such as SCC1-SCC7 for sub county coordinators 1 and CPO1-CPO23 for college program officers. This enhanced confidentially on the information given by the sub county coordinators and college program officers. These respondents individually responded by giving their feelings, and perceptions on preparedness of pre-primary teacher education program and how this influences the academic performance of teacher trainees in Kisumu County. Based on the four objectives of the study, the qualitative data from interviews were reported verbatim, transcribed and corded according to various themes. Following the format of Braun and Clerk (2006) a sample of the verbatim quotations, themes and codes that emerged from the study is shown in the Table 17.

Table 17:
Sampled Themes, Codes, Interview Excerpts

Interview Transcripts	Codes	Themes
Currently we are admitting more trainees and at this rate we are at the verge of overcrowding the classroom, which may as well hurt quality of learning. To maximize learning potential, classrooms should be open, comfortable, well lit, and visually stimulating. Strategic use of existing space can make a big difference, too. Why emotionally connecting with our students is crucial to their learning experience (College Programs officer, 3).	TFU	Training Facilities Used
Trainees equipped with pedagogical skills, have the capacity to plan, initiate, lead and develop education and teaching with the departure point in both general and subject-specific knowledge of learning. With these pedagogical skills also these trainees have the capacity to connect the teaching to research in the subject of interest (College Programs officer 5)	TP	Trainer‘s Professionalism
Teaching and learning materials are important because they can significantly increase student achievement by supporting student learning. Besides, learning materials aids in the learning process by allowing the teacher trainees to explore the knowledge independently as well as providing repetition. In fact, students taught with instructional materials performed significantly better than those taught without instructional materials and also that the use of instructional materials generally improved students' understanding of concepts and led to high academic achievements (Sub County coordinators of ECDE 1,)	UTLR	Utilization Of Teaching and Learning Resources
It is also the duty of the county government to conduct internal audit for the preschool training colleges to assess or evaluate the level of preparedness of these institutions in producing quality preschool teachers that can bring quality learning outcome among the ECDE learners (Interview; College Program officer 2,).	QC	Quality Control

Source: Interview Research Data, 2022

From Table 17, verbatim quotations from interviews were transcribed and themes emerged as was in Raburu (2011). Coding, which is a process of organizing and sorting data was done and it involved assigning a word, a phrase, a number or a symbol to each coding category. Codes served as a way of labeling, compiling and organizing data and it allowed the researcher to summarize and synthesize what was happening in the data. In linking data collection and interpretation, coding became the basis for developing analysis (Gibbs, 2007).

Coding was used so that it would be possible to go through all interview transcripts in a systematic way. The ideas, concepts and themes were then coded to fit the categories. The present study used preset and emergent codes where preset codes were in line with the study’s objectives while emergent codes contained ideas,

concepts, actions, relationships or meanings that came up during data collection (James & Busher, 2009). Interviews were coded as CPO1-CPO23 (for college program officers) and SCC1-SCC7 (for Sub County Coordinators) which was in line with confidentiality and anonymity of the participants without losing the content for analysis (Denzin & Lincoln, 2011).

3.10 Ethical Considerations

Ethics consideration is defined as use of moral ideologies in designing, conducting and writing research outcomes, with the essential moral standards focusing on the dos and don'ts (Kothari and Guarav, 2015). In social research, ethics involves protection and respect for participants taking part in the study (British Psychological Society, 2010). Transparency, openness, privacy and honesty were the guiding principles during this research, as explained by Creswell (2014). In this study the ethical issues entailed respecting the respondents' individual rights in the data collection. The respondents were also selected on the basis of their willingness and interest to participate in the study. Once they had been briefed on what it entails, the researcher ensured that the participants felt comfortable and had time to participate in the study. The researcher assured all the participants that the research study was for academic purpose and any mention of any participant was by the use of pseudonyms.

All data collected were stored under lock and key and were only accessible to the researcher and the supervisors. To maintain the confidentiality of the study the study instruments did not bear any names, addresses or identifiers that can link the information provided to the participants, in line with assertion by Gay (2002). The participants were therefore issued with serial numbers and the interviews were also conducted in privacy to ensure that the participants felt free and comfortable to provide truthful information.

CHAPTER FOUR
ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings and interpretation of the study. The chapter has been sub-divided into sections and sub-sections. The research findings were presented on the basis of the study objectives and hypotheses. The quantitative data was analyzed using both descriptive and inferential statistics. The descriptive statistics was used to describe and summarize the data in form of tables, frequency, percentages, mean and standard deviation. The inferential statistics was used to help make inferences and draw conclusions on the research hypotheses. However, the inferential statistics generally focused on regression to establish the influence of the independent variables on the dependent variable. Regression analysis was used to develop a prediction model to find out how well the set of the independent variables were able to predict academic performance among pre-school diploma teacher trainees in Kisumu County. Regression analysis was used to investigate the relationship between the variables. All the tests of significance were computed by Statistical Package for Social Science (SPSS) version 23. It was used to analyze the quantitative data whereas for qualitative data thematic analysis approach was used.

4.2 Questionnaire Return Rate

The researcher had three categories of respondents where teacher trainees were administered with questionnaires, program officers and Sub County Coordinators were interviewed using interview schedule.

4.2.1 Questionnaire Return Rate

Table 18 shows the summary of return rate of questionnaires from the respondents. Respondents were second year diploma teacher trainees. The results indicate that the questionnaire return rate was quite adequate for the study. Response rate is represented in Table 18.

Table 18: *Questionnaire Return Rate*

Respondents	Population	Sample Size	Returned	Return Rate
Second year teacher trainee response	1,150	297	284	95.6%

Source: Researcher, 2022

Table 18 shows that out of a total of 297 questionnaires which was administered to the teacher trainees, 284 of them were duly filled and returned for data analysis which

is equivalent to 95.6% response rate. Morgan (2006) posits a 50% return rate is adequate, 60% is good enough while the return rate of the above is 80% is very good. Therefore, the study's return rate of 95.6% was very good. The high response rate was attributed to the fact that the researcher personally administered the questionnaires to the respondents. The researcher briefed the respondents the intention of the study and assured them that data collected were purely for academic purposes. In addition, the respondents were assured of the confidentiality of the data collected and the questionnaires were also simple and friendly to the teacher trainees.

4.2.2 Interview schedule

Table 19 shows interview schedules for pre-primary program officers and sub county coordinators for pre-primary education.

Table 19: *Response Rate on Interview Data*

Informants	Population	Sample size	Number interviewed	Return rate
Program officers	23	23	23	100%
Sub-county coordinators	7	7	7	100%
Total	30	30	30	100%

Source: Researcher, 2021

It was noted that the respondents who were 23 program officers and 7 sub-county coordinators had return rate of 100%. This suggests that the researcher had a good relationship with the respondents that led to success of data collection. Secondly, the 100% response rate could have been because of adequate prior arrangements which were made with the participants through mutually arranged dates. Besides these, the researcher personally conducted the interviews with the informants as per agreement.

4.3 Respondents Demographic Information

The researcher captured demographic and background information of the participants with a view to understanding their suitability in participating in the study. Demographic information comprise bio data regarding the respondents and college characteristics were considered necessary for the determination of whether the respondents were representative sample of target population for the generalization of the findings of the study. Thus, gender, age, academic qualification, mode of study

and type of college were considered. The data were analyzed and results tabulated in Table 20 showing frequency and percentages.

Table 20:
Demographic Characteristics

Variable	Response	Frequency	Percent (%)
Gender	Male	35	12.3%
	Female	249	87.7%
Age Bracket	18 - 23 years	26	9.2%
	24 - 29 years	78	27.5%
	30 - 35 years	77	27.1%
	36 -41 years	53	18.7%
	42 - 47 years	35	12.3%
	48 - 53 years	14	4.9%
	54 - 59 years	1	0.4%
Mode of Study	Full time	78	27.5%
	Part time	206	72.5%
Type of College	Boarding	57	20.1%
	Day	102	35.9%
	Boarding and Day	125	44.0%

Based on the results in Table 20, majority of the participants 249 (87.7%) were females with males only accounting for 35 (12.3%) of the study participants. This shows that the ECDE training attract more females than men.

> *ECDE as a course is not liked by male trainees and therefore the county government should motivate the male trainees and trainers to promote the course…… CPO 6, CPO 10, SCC 3 and SCC 11*

In terms of age, the participants were distributed from 18 years all through to age 59. Specifically, age between 18-23 years were 26 (9.2%), age between 24-29 years were 78 (27.5%) while age between 30-35 years were 77(27.1%), age between 36-41 years were 53(18.7%), age between 42-47 years were 35(12.3%), age between 48-53 years were 14(4.9%) and the least number 1 (0.4%) of participants were aged 54-59 years.

This shows that elderly people are not undertaking ECDE training attributable to retirement. The wide disparity in age implies that there is no specific age limit for teacher trainees in colleges in Kenya.

> *Many of the trainees are in their youth stage being the employable group and so they are the majority……. CPO 2, CPO 10 and CPO 17*

Another participant had this to say,

> *I have been in this position for the last nine years and therefore I should be old enough going through all the levels of education……. SCC 13, SCC 23, SCC 21 and SCC 23*

With regard to mode of study, the analysis of trainees' responses established that most of the teacher trainees 206 (72.5%) were part time teacher trainees, only a small proportion of them were full time trainees. This may be attributed to age factor as the majority of the trainees may be committed with family life and they have to work to earn a living and at the same time they have to study.

> *The trainees are parents and students and therefore they have to do their duties as parents as well as students and therefore their have to be in school and at home….. CPO 7, CPO 11 and CPO 13*

Similarly, it was established that majority of the colleges were both day and boarding, as reflected by 125 (44.0%) who said they were from both day and boarding colleges. Only 102 (35.9%) were from purely day colleges and 50 (20.1%) were from purely boarding colleges. However, it was established that all the types of the colleges were represented in the study.

> *Majority of the colleges are both boarding and day to cater for students' interest and to help students who come from far ……CPO 6, CPO 9 and SCC 10*

4.4 Academic Performance of Pre-Primary Teacher Trainees in Kisumu County

This section sought to explore the level of academic performance of pre-primary school teacher trainees in ECDE colleges within Kisumu County. Academic performance of pre-primary school teacher trainees is the dependent variable of the

study. Students' academic performance was assessed on the basis of trainees' achievement in the final year 2021 ECDE Diploma examinations by KNEC that they did at the end of the course. The researcher waited until the year 2022 KNEC results were released as in appendix VII. Using their index numbers captured during the data collection, researcher got the results and computed mean average score. Performance in ECDE Diploma examinations by KNEC was considered a good indicator of the academic performance of students in a college. This is because it is a standardized instrument and therefore a reliable measure of academic performance.

Table 21: *Summary of Trainees Academic results (n=284)*

Scores	Min.	Max.	Mean		Std. Deviation	Skewness		Kurtosis
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	SE Statistic	Statistic
	21.00	**88.00**	**49.8536**	**.89197**	**15.03174**	**.472**	**.145**	**-.639.**
	A	**B**	**C**	**D**	**E**			
Grades	38	45	37	84	80			
	13.4%	15.8%	13.0%	29.6%	28.2%			

Table 21 shows that out of 284 teacher trainees who sat for 2021 ECDE KNEC examinations, 13.4% of them scored mean grade of A and 15.8% others scored mean grade B. On the other hand, close to three out of ten (28.2%) of the trainees failed in exams and were referred after attaining grade E in the exams. The findings revealed that the teacher trainees had overall mean of 49.8% with a fairly big standard deviation of 15.0. Figure 4 shows graphical distribution of teacher trainee scores in the KNEC exams.

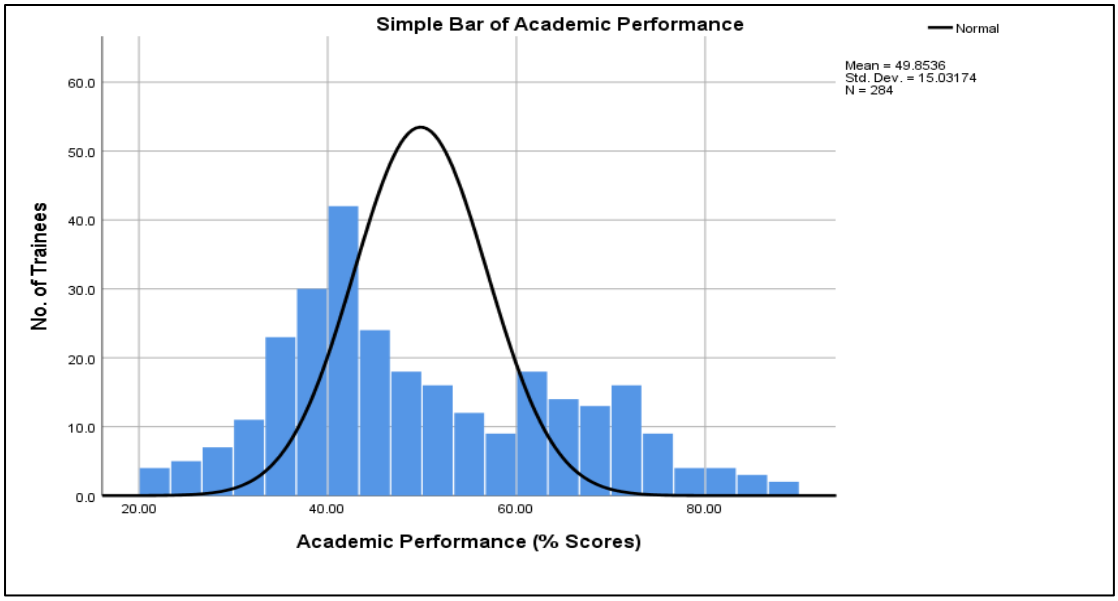


Figure 3: *Distribution of Academic Performance among ECDE Trainees*

The finding shows that most of the teacher trainee candidates who sat for ECDE KNEC examinations in the year 2021scored below the overall mean of 49.8. The distribution curve reveals that the scores were positively skewed. There is an indication of a long tail to the right, a distortion that is caused by many small values which pull the mean downward so that it is less than the median, signifying that majority of the ECDE trainees scored below the overall mean mark. This suggests that scores, probably follow a positively skewed distribution, because most of the students probably seemed to have scored quite low and only a few students scored high marks. The finding points out that significant majority of the teacher trainees perform poorly in the final year examinations. However, fairly large standard deviations implies that there is big disparity among trainees in terms of performance in the final exams; some trainees perform quite well while others perform dismally. The findings are in agreement with the data at the county director of early childhood education's office, Kisumu county 2020 which shows that Kisumu County had been recording comparatively low academic performance as compared to neighboring counties.

4.5 Training Facilities Used and Academic Performance

The first objective sought to establish the relationship between training facilities used and the academic performance of trainee teachers in ECDE training centers. The objective was first addressed by exploring the views of trainees on the use of training

facilities in their colleges, followed by investigating the relationship between training facilities used and academic performance of trainee teachers in ECDE training centers.

4.5.1 Training Facilities Used in ECDE training centers

The respondents' views on training facilities was captured using 9 items measured on a 5-point Likert scale rated as strongly disagree (SD) = 1, disagree (D) = 2, Undecided (UD) = 3, agree (A) = 4 and Strongly Agree (SA) = 5. The results were analyzed to show frequency, percentages, mean and standard deviation as presented in Table 22.

Table 22:
Training Facilities and Academic Performance

Training Facilities	SA	A	UD	D	SD	Mean	STD
	5	4	3	2	1		
I feel comfortable in spacious classrooms.	36 12.7%	165 58.1%	4 1.4%	48 16.9%	31 10.9%	3.44	1.22
I like the college kitchen because it is well kept.	28 9.9%	142 50.0%	63 22.2%	24 8.5%	27 9.5%	3.42	1.08
I feel safe and secured while using the college playground.	24 8.5%	119 41.9%	60 21.1%	57 20.1%	24 8.5%	3.22	1.11
The latrines in the colleges are enough and clean.	32 11.3%	140 49.3%	15 5.3%	74 26.1%	23 8.1%	3.29	1.20
Computer lab is well equipped with ICT gargets.	11 3.9%	92 32.4%	25 8.8%	103 36.3%	53 18.7%	2.67	1.21
Dormitories have enough bedding for all the students.	16 5.6%	101 35.6%	61 21.5%	79 27.8%	27 9.5%	3.00	1.11
I feel that college library is equipped with relevant materials	17 6.0%	128 45.1%	27 9.5%	61 21.5%	51 18.0%	2.99	1.27
There are enough water supplies within the college.	56 19.7%	169 59.5%	21 7.4%	25 8.8%	13 4.6%	3.81	1.00
Electricity used in college is reliable.	61 21.5%	178 62.7%	19 6.7%	19 6.7%	7 2.5%	3.94	0.87
Overall Mean						3.31	1.12

Source: Survey Data, 2021

Table 22 illustrates that, on average, the sampled teacher trainees were generally undecided (*M*=3.31; *STD*= 1.12). This seems to suggest that while training facilities might be sufficient and capable of enhancing academic performance of trainees in some colleges, the same was contrary in other institutions. Indeed the large standard deviation (*STD*=1.12) illustrates that there is minimal concurrence regarding preparedness in terms of training facilities among the pre-school teacher training

colleges. Based on the tenets of the constructivism theory context, where learning takes place is critical for the acquisition of desired knowledge (Thomas & Brown, 2011), it can be concluded that learning may not be taking place in some of these colleges at their optimum levels. Indeed some authors (Alanazi, 2016; Taber, (2019) have previously stated that learning is a process of knowledge construction aided by particular tools which include training facilities such as classrooms, laboratories and libraries among others. Supporters of the constructivism has argued that learning, being an inherently social activity, is suitable in an environment with sufficient facilities so as to enable desired interaction between the learner and such facilities (Jaleel & Verghis, 2015). Such facilities enable learners to activate existing cognitive structures or construct new ones to subsume the new input (Alanazi, 2016)

From the results in Table 22, it emerged that the teacher trainees moderately feel comfortable in spacious classrooms. This was indicated by the item mean (*Mean* = 3.45; *STD* = 1.22). In this case, majority of the participants (58.1%) agreed that they feel comfortable in spacious classrooms with another 12.7% of them strongly agreeing. However, only 16.9% of the participants disagreed with a further 10.9% strongly disagreeing with the statement while 1.4% was neutral. In general, while most of the participants (70.8%) agreed that they feel comfortable in specious classrooms, some 29.2% others denied that the classrooms were comfortable and spacious. This shows that not all trainees have spacious classrooms despite the fact that teacher trainees require comfortable and spacious classrooms to enable them perform well. The importance of spacious classrooms also featured quite clearly during the interview sessions with the College Programs officers, where one of them raised a concern on congested learning environment and yet spacious classroom was important. In his own words he said;

> *"To maximize learning potential, classrooms should be open, comfortable, well lit, and visually stimulating. Strategic use of existing space can make a big difference, too."…....* (CPO, 3).

Another SCC said,

> *"The training facilities like classrooms are inadequate yet new ECDE teacher trainee curriculum requires enough space as it involves practical that requires enough area for participation "……..*(SCC, 2).

The statement attributed to CPO 3 and SCC 2 tends to suggest that classroom environment is a significant factor in the academic achievement of the teacher trainees in the pre-school training colleges. This tends to concur with an earlier study by Suleman and Hussain (2014) which examined the effects of classroom physical facilities on the academic achievement scores of secondary school students in Kohat Division, Pakistan. These authors revealed that classroom favorable facilities have a significant positive effect on the academic achievement scores of secondary school students. In another similar finding, Malik and Rizvi (2018) also found that classroom environment is a significant predictor of student outcome. Further, two studies conducted in Nigeria (Adesua, 2014; Akomolafe and Adesua, 2015) also concluded that classroom environment is an important motivating factor capable of marring or enhancing teaching and learning process. Therefore, the success of pre-school teacher training colleges in ensuring better academic performance of teacher trainees significantly relies of the classroom environment.

Similarly, whereas some of the participants tended to agree that they like the college kitchen because it is well kept (*Mean* = 3.42; *STD* = 1.09), some did not like their kitchen. This was shown by the fact that although majority of the participants (59.9%) agreed, 18% of them disagreed with the statement that they like the college kitchen because it is well kept and 22.2% were undecided. This shows the skewed distribution of attitude of teacher trainees towards the college kitchen.

Another CPO said,

> *Actually the kitchen is well kept even though some of the workers are not well trained so they need to be reminded on so many things that is making me to be overworked"……..* (CPO,4).

Another SCC said,

> *"I like neat kitchen because it can lead to a healthy life as the trainees will not get sick due to germs from the kitchen……."*(SCC,1).

From the results of the discussion, it seems that participants like well-kept kitchen because everyone enjoys being in a clean environment. The findings are in agreement with Chepkonga (2017) in Kenya who found out that there was a significant relationship between learning facilities like clean kitchen environment on learning outcome. The study also revealed that lack of adequate facilities influence negatively provision of quality education. The findings concur with Emiliana (2017) in Parkistan

who found out that learning facilities including safe kitchen have a positive influence on academic outcome of the learners. This implies that teachers colleges should be encouraged to keep high standards of cleanliness of the kitchen.

Equally, it emerged that the teacher trainees only moderately felt safe and secured while using the college playground (*Mean* = 3.22; *STD* = 1.11). The mean rating showed that the participants were generally undecided. Although many (41.9%) of the participants agreed, 20.1% others disagreed while 21.1% were undecided. This shows that a significant proportion of teacher trainees did not feel safe and secured when using the playground. Similarly, during the interview session with the College program Officers, it was established that most of the preschool training colleges do not have safe playing ground for teacher training and this made most of the trainees fear expressing themselves freely during playing or games. One of the college program officers had this to say;

> *"Some of the play grounds are not very safe and fit for certain activities because some are bushy due to poor maintenance, some have obstacles like stones, potholes, heaps of soil making the ground not properly leveled……."*. (CPO 6).

Another SCC said,

> *"It is good to have safe playground which is well maintained and spacious to accommodate the trainees during activities areas, leisure and even during competition……."(SCC, 6)*

From the forgoing discussion, it emerged that majority of the participants agreed with the fact that they feel safe and secure while using the college playground. This finding concur with Akomolafe (2016) in Nigeria whose finding indicated that motivation and security of playground influence academic performance of teacher trainees. The findings also agree with Amstadam (2010) in South Africa who explored perception of students on school infrastructure. It emerged that lack of space in the playground limits the student's academic achievements. This implies that learners should be provided with enough space and security in the playground.

Similar results emerged regarding the statement on whether the latrines in the colleges are enough and clean. (*Mean* = 3.29; *STD* = 1.2). In this case, although 49.3% of the participants agreed and another 11.3% strongly agreed that the latrines in the colleges

are enough and clean, more than a quarter (26.1%) of them disagreed and a further 8.1% of them strongly disagreed. Thus, 60.6% of participants cumulatively agreed while 34.2% cumulatively disagreed with the statement. This shows that while in some colleges, the latrines are enough and clean for the teacher trainees, this is not true in a significant proportion of the colleges.

Another CPO said,

> *"Latrines and toilets are enough and well-kept since the college employed workers who work in the lavatories to ensure that the are ever clean"*.....(CPO, 10).

One SCC said,

> *"even though the latrines and toilets are well kept, in some institutions only one person is employed to work in both male and female latrines making them uncomfortable with the opposite sex"*……..(SCC, 5).

From the above discussion, it is evident that majority of the participants agree that latrines in the college are enough and clean to serve everybody within the college. The findings are in agreement with Chepkonga (2017) in Kenya who investigated the influence of learning facilities on provision of quality education. The results showed that facilities like classes, kitchen and latrines support quality education. The findings reveal that there is relationship between infrastructure and academic achievement of the students. The implication of these finding is that the stakeholders should be sensitized on the importance of enough and clean latrines so that students can feel comfortable in the training.

On computer labs, the results show that the computer labs were not well equipped. This was shown by the response rating of 2.66 (*STD* = 1.21) on the item regarding the statement that the "Computer lab is well equipped with ICT gadgets like desk tops, projectors and tablets". In this case, the view of the participants was divergent across 5 response levels. However, majority of participants (36.3% disagree; 18.7% strongly disagree) cumulatively (55.0%) disagreed that their computer lab is well equipped with ICT gadgets. On the other hand, only 32.4% of participants agreed that their computer lab is well equipped with ICT gadgets. The results indicate that the computer labs are not well equipped to facilitate good academic performance among teacher trainees. This was confirmed by qualitative data from interviews with the sub county coordinator of ECDE where it emerged that most of the ECDE training

colleges had inadequate computer equipment like lap tops, desk top and projectors .

For instance, in one of the interviews with Sub County Coordinators of ECDE, one participant had this to say:

> *"In our sub county most of the ECDE teacher training centers have poorly equipped computer laboratories affecting meaningful teaching and learning thus hindering academic performance……"* (SCC, 1)

Another CPO said,

> *"Our computer laboratories are not well equipped with the necessary gadgets that the new curriculum (CBC) require this is due to lack of funds to source for the gadgets"…….(CPO, 20).*

From the forgoing discussion, it is evident that majority of the participants disagreed with the idea that computer laboratory is well equipped with ICT gargets such as projectors, lap tops, desk tops and tablets. Enough computer gargets enable students' learners to learn faster and without scrambling for the few gargets. The finding is in agreement with Raja and Wei (2014) in Parkistan who explored the effectiveness of teacher training program on the use of information and computer technology training. The study found out that computer knowledge and skills imparted and availability of physical facilities in colleges influence the effectiveness of the trainings.

Likewise, dormitories were found to be moderately adequate for teacher trainees. This was shown by a mean response rating of 3.00 (*STD* = 1.11) on the statement that dormitories have enough bedding for all the students. This shows that participants had views across the response continuum. For example, 35.6% of participants agreed with the statement, 5.6% strongly agreeing that dormitories have enough bedding for all the students, but 27.8% of participants disagreed while 9.5% strongly disagreed with it and another 21.5% of them being undecided. Cumulatively, 41.2% of participants agreed, 37.3% disagreed while 21.5% were undecided on the statement that dormitories have enough bedding for all the students. This implies that there was no enough bedding for all teacher trainees in many of the colleges.

One of the CPO said,

> *"The institution do not provide all the bedding's because some of the trainees prefer residing outside the college while others live within the college"….(CPO, 9).*

One SCC said,

> *"Since the college admits students who are considered to be adults, they are allowed to stay within or outside the college for those who want privacy"……..(SCC, 3).*

From the findings above, it was noted that a high number of participants showed that dormitories have enough beddings for all the boarding students. This enables the students to sleep well and concentrate during the day in their studies. The findings concur with Amstadam (2010) in South Africa who studied on the views and experiences of educators and students in relation to infrastructure. The study noted a significant relationship between dormitories, sanitation and littering on academic achievement. The study was in contrast by Rufai, Umar and Idris (2013) in Nigeria who found no significant relationship between beddings in the dormitories in technical vocational education and academic achievement.

Similarly, the results showed that college trainee teachers do not feel that college library is equipped with relevant materials. This emerged as revealed from the item mean response rating of 2.99 (*STD* = 1.27), where only 45.1%the participants agreed and 6.0% strongly agreed that their college library is equipped with relevant materials. On the other hand, 21.5% of participants disagreed while 18.0% strongly disagreed that their college library is equipped with relevant materials and a further 9.5% of them remained undecided. Cumulatively, 51.1% of participants agreed while 39.5% disagreed. This shows that most of the college libraries are not fully equipped with relevant materials in nearly 40% of the cases, yet lack of relevant materials affects academic performance of teacher trainees.

This was further corroborated by the qualitative data from Sub County coordinator of ECDE, where it emerged that most of the preschool colleges in the sub county had poorly serviced libraries, yet library relates positively with the learning outcome. For instance, in one of the interview sessions, one participant had this to say:

> *"Quality learning outcome and use of school libraries directly relate to each other. Libraries are greatly valued repositories that offer teacher trainees with reliable information, study skills and reading space, yet not much of them have been valued and they face several challenges in charging services."..* (SCC, 3).

Another CPO said,

> "*Most teacher trainees would wish to do their private studies in the library because they feel that when they are in the library, they can access a lot of information that enables them to acquire knowledge* ……."(CPO, 8).

From the above discussion, it is evident that majority of the participants feel that college library is well equipped with the relevant materials that enable them to learn during their free time and to do more research using the library. The finding is in agreement with Mfereke (2016) whose finding revealed that there was a significant positive relationship between utilization of training facilities like library and laboratory on academic achievement. The study is in contrast with Mokaya (2013) in Kenya who reported that library equipment did not predict academic achievement. It is worth noting that this finding is on consistent with Gopang (2016) in Parkistan who showed that there is a relationship between library and academic achievement. This implies that training colleges should be equipped with relevant materials especially the library to make learning easy.

Equally, in terms of availability and adequacy of utilities, the participants generally agreed that there is enough water supplies within the college. This finding was suggested from the fact that, whereas majority (79.2%) of the participants either agreed or strongly agreed, as reflected a mean rating of 3.81 (*STD*=1.00), another 13.4% of participants disagreed and 7.4% of them were noncommittal on the matter.
One CPO said,

> *"There is enough water supply since the college have storage tanks and borehole making water to flow throughout in college"*……..(CPO, 2)

> Another SCC said,
> "*Water is very essential and available though some were not fit for consumption because it was noted that some of the storage tanks were not properly maintained and water from the borehole was not treated"*……(SCC, 4).

From the discussion above, majority of participants showed that there exists enough water supply in the colleges, making it essential and life so its availability makes life easy in the colleges. The findings concur with Chepkonga (2017) in Kenya that

availability of water supply in pre-primary teacher training centres support quality academic performance of teacher trainees. This implies that all teacher training centres should have enough water supply or use in the colleges.

Similarly, although electricity was found to be available, it was reliable. This was reflected by a mean response rating of 3.94 (*STD* = 0.87) on the item that sought to establish whether electricity used in college is reliable. Although the view that it was available as shown by the standard deviation of less than one (1.0), some 6.7% of the participants were undecided that electricity used in their college is reliable and 6.7% of participants disagreed while 2.5% strongly disagreed that electricity used in their college is reliable. This shows that although electricity in more than 80% of the colleges is available. Availability and reliability of electricity facilitates learning for most of the times allowing for better academic performance.

One CPO said,

> *"Electricity reliable even though due to weather conditions like heavy rains the power goes off but is backed up by solar energy"…….*(CPO,2).

Another SCC said,

> *"Electricity is available but it was noted that some sockets are dangerous to the students since they have open wires"……*.(SCC, 2)

The findings of the study indicates that majority of the participants agreed with the statement that electricity used is reliable. Electricity helps trainees to study well at night and to use computer gargets. The study agreed with Suleman and Hussain (2014) in Parkistan that classroom and electricity have a significant effect on academic achievement. The findings was in agreement with Akungu (2014) in Kenya who examined the influence of teacher resources like electricity and found that inadequacy of electricity have a negative impact on the academic achievement of the learners.

The aforementioned findings provide evidence that although physical facilities such as libraries, laboratories and playground are important resources that signify the level of preparedness of an institution to enhance student academic performance, they are moderately adequate in many of the colleges. These findings had also been articulated

in earlier research reports such as Arshad, Haq & Khan (2020), Comfort and Veronica (2016), Onyebuenyi *et al* (2022), as well as Ojuok *et al* (2020). Learning institutions with adequate physical facilities such libraries, laboratories, classrooms and playgrounds among others were noted in these studies to be performing better than those without. Pre-school training colleges therefore stand a better chance to ensure improved performance among teacher trainees with adequate training facilities.

4.5.2 Relationship between Training Facilities and Academic Performance

To determine the relationship between training facilities used and academic performance of pre-school teacher trainees, the researcher carried out a correlations analysis. Table 23 presents the results of the correlations between training facilities used and academic performance of pre-school teacher trainees.

Table 23:

Correlation between Training Facilities used and Academic Performance

		Training Facilities Used	Academic Performance
Training Facilities Used	Pearson Correlation	1	.290**
	Sig. (2-tailed)		.000
	N	284	284
Academic Performance	Pearson Correlation	.290**	1
	Sig. (2-tailed)	.000	
	N	284	284

Table 23 shows that the correlation between training facilities and academic performance of teacher trainees is positive and significant ($n=284$; $r=.290$; $p < 0.05$). The null hypothesis that "***there is no significant relationship between training facilities and academic performance among trainees in pre-primary teacher training colleges in Kisumu County"*** was therefore rejected. Thus, it has been shown that availability of training facilities significantly influences academic performance of learners including pre-school teacher trainees. This finding seems to resonate with the tenets of the constructivism theory which allude to the fact that a learner's knowledge acquisition is a function of the context, or the environment among others (Biswas, 2018). Training facilities in the teacher trainee's environment is a significant determinant of the trainee's academic performance.

The significance in the relationship between training facilities and academic performance of pre-school teacher trainees seems to reflect earlier studies which also came up with similar findings albeit in different contexts. For instance, Mfreke (2016), in a study done in Nigeria to examine the relationship between teachers' utilization of school facilities and academic achievement of student nurses in Human Biology in schools of Nursing, found that there exists significant positive relationship between teachers' utilization of school facilities (library, laboratory, information and communication technology (ICT) center and recreation center) and academic achievement. Similarly, Mokaya (2013) found that improved academic achievement is associated with more adequate and well-spaced classrooms, adequate and ample spacing in the libraries, adequate science laboratories, adequate water and sanitation facilities in a study which analyzed the impact of school infrastructure on the provision of quality education in public secondary schools in Kajiado County (Kenya).

To determine the actual influence of availability of training facilities and academic performance of pre-school teacher trainees, a regression analysis was computed. Table 24 presents the output of model summary of regression analysis.

Table 24:
Regression Model Summary of Training Facilities and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.290[a]	.084	.081	10.79546

Dependent Variable: Academic Performance; Predictor: (Constant), Training Facilities

Table 24 shows Adjusted *R* Square of .081, implying that preparedness in relation to availability of training facilities explains 8.1% variations in pre-school teacher trainee performance. In other words pre-school training college preparedness component of availability of training facilities accounts for 8.1% of variability in performance of pre-school teacher trainees. This indicates that one of the significant determinants of pre-school teacher trainee performance is the availability of training facilities.

The study further sought to determine whether the model $Y = a + b_1 X_1 + e$ was fit and significant to predict the relationship between availability of training facilities and

academic performance of pre-school teacher trainees. This led to computation of regression ANOVA analysis. The analysis is as presented in Table 25.

Table 25:

ANOVA Analysis for Training Facilities and Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3028.234	1	3028.234	25.984	.000[b]
	Residual	32864.838	282	116.542		
	Total	35893.072	283			

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Training Facilities

Table 25 show statistics to ascertain whether the model is fit to show the relationship between training facilities and academic performance of pre-school teacher trainees. The results shows F (1, 282) = 25.984 with p-value = 0.00. Since p-value was found to be less than 0.05 level of significant, there was therefore adequate evidence to conclude that preparedness in terms of availability of training facilities is a significant predictor of pre-school teacher trainee academic performance.

The study further sought to establish how a unit of preparedness in terms of availability of training facilities leads to and changes in academic performance of teacher trainees. To this end, unstandardized beta coefficient analysis was run and the results were presented in Table 26.

Table 26:

Coefficients Analysis for Availability of Training Facilities and Academic Performance of Teacher Trainees

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1	(Constant)	32.425	3.685		8.799	.000	25.171	39.679
	Training Facilities	5.189	1.018	.290	5.097	.000	3.185	7.192

a. Dependent Variable: Academic Performance

Table 26 shows that an improvement in preparedness by one unit in terms of creation of availability of training facilities leads to an increase of 5.189 within CI (3.185, 7.192) units in pre-school teachers' academic performance. Based on p-value of 0.00

as shown on Table 26, this increase was found to be significant since its *p*-value was less than 0.05 level of significant and a *t*-value 5.097 >1.96. If this statistics is substituted in the above model, the approximated model $Y = a + b_1 X_1$, would be

Y= 32.425 + 5.189X where X represent the measure of preparedness in terms of availability of training resources.

4.6 Trainers' Professionalism and Academic Performance

The second objective sought to establish the relationship between trainers' professionalism and the performance of trainee teachers in ECDE training centers. The objective was addressed by exploring the views of trainees on trainers' professionalism, followed by investigating the influence of trainers' professionalism on academic performance of trainee teachers in ECDE training centers.

4.6.1: Trainers' Professionalism

The views of the respondents on training facilities was captured using 10 items measured on a 5-point Likert scale rated as strongly disagree (SD) = 1, disagree (D) = 2, Undecided (UD) = 3, agree (A) = 4 and Strongly Agree (SA) = 5. The results were analyzed to show frequency, percentages, mean and standard deviation as presented in Table 27.

Table 27:
Trainer's Professionalism and Academic Performance

Indicators	SA	A	UD	D	SD	Mean	STD
	5	4	3	2	1		
Trainers are competent in their subject areas	73	185	15	11	0	4.12	0.67
	25.7%	65.1%	5.3%	3.9%	0.0%		
Trainers are competent in pedagogical skills	71	181	21	11	0	4.09	0.68
	25.0%	63.7%	7.4%	3.9%	0.0%		
Trainers are able to utilize the available teaching resources	77	175	16	12	4	4.08	0.78
	27.1%	61.6%	5.6%	4.2%	1.4%		
Trainers are able to use a variety of teaching methods	92	137	33	19	3	4.04	0.89
	32.4%	48.2%	11.6%	6.7%	1.1%		
Trainers are conversant with the new curriculum.	82	142	35	18	7	3.96	0.94
	28.9%	50.0%	12.3%	6.3%	2.5%		
Trainers prepare their instructional materials.	72	175	30	6	1	4.09	0.68;
	25.4%	61.6%	10.6%	2.1%	0.4%		
Classroom management by trainers is important to me	67	152	45	19	1	3.93	0.83
	23.6%	53.5%	15.8%	6.7%	0.4%		
Our trainers train us on co-curriculum activities.	37	123	48	63	13	3.38	1.10
	13.0%	43.3%	16.9%	22.2%	4.6%		
Trainers are well behaved	49	178	30	26	1	3.87	0.81
	17.3%	62.7%	10.6%	9.2%	0.4%		
Trainers complete the syllabus at the right time.	49	166	28	38	3	3.77	0.92
	17.3%	58.5%	9.9%	13.4%	1.1%		
Overall Mean						3.93	0.83

Source: Survey Data, 2022

Based on the results in Table 27, the sampled trainees agreed that trainers' professionalism has had some influence over their academic performance (*M*=3.93; *STD*=0.83). This tends to suggest that the trainers in the sampled pre-school training colleges have demonstrated sufficient professionalism in delivering course contents to the trainees. The smaller standard deviation (*STD*=0.8) illustrates that the sampled teacher trainees were in concurrence over trainers' professionalism as an influencing factor on their performance. Teacher professionalism forms a core component that shapes learning under constructivism theory of education or knowledge acquisition

(Biswas, 2018). Professionalism of a trainer has the potential of nurturing a participatory environment where learning can thrive in. Constructivists argue that learning is an inherently social and participatory activity, where participation involves mutual engagement with other members of the group in negotiating meaning (Jaleel and Verghis, 2015).

Table 27 also indicates that the sampled teacher trainees agree that trainers are generally competent in their subject areas (*Mean* = 4.12; *STD* = 0.67). In this case, majority (65.1%) of the trainee teachers agreed while a further 25.7% of them strongly agreed that trainers are competent in their subject areas, only 3.9% of participants disagreeing. This shows that a significant majority (90.8%) of the participants believe that trainers are competent in their subject areas. Having competent trainers ensures quality learning and improved academic performance. Qualitative data obtained from interviews with Sub County coordinator of ECDE, revealed that competency of teacher trainer is very key on the performance of the teacher trainee. In fact, one of the coordinators had this to say;

> *"There is an abundant knowledge-base to inform us that in teachers' colleges trainers play the critical role in trainee learning and achievement. As a key education driver, teacher competencies offers practical strategies, practices, and rules to guide teachers in ways to improve instruction that improves trainee performance and the quality of the work experience"……..*(SCC, 6).

Another CPO said,

> *"The trainers are competent since they are employed through a competitive interview and when they are given the job the syllabus is completed at the right time"…….* (CPO, 7).

From the above discussion, majority of the participants agreed with the statement on the competency in the subject areas. It emerged that trainers who are competent are able to plan their lessons and their work is completed at the right time therefore competency means doing the right work at the right time and finishing at the right place at the right time. The finding is in agreement with Varela and Maxwell (2015) in Texas on effectiveness of educator preparation program and academic achievement. The study found that preparedness has a positive significant relationship on academic achievement. Likewise, Suleman, Aslam and Habib (2011) in Parkistan found out that ideologies, planning and practice do provide sufficient base for

instructional strategies. This implies that trainers should be well trained on pedagogical skills in order to deliver competently.

Similarly, the results showed that trainers are competent in pedagogical skills. The views showed that majority (63.7%) of the participants agreed and another 25.0% strongly agreed that their trainers are competent in pedagogical skills, translating to a response rate of 4.09 (*STD*=0.68). This shows that close to nine out of ten (88.7%) of the surveyed of teacher trainees agree that the trainers are competent in pedagogical skills. Having the confidence in pedagogical skills of participants motivates the trainees to carefully undertake the training thus improving on academic performance. These sentiments vividly came up during the interview session with the College Programs officers, in which the respondents also reiterated that poised with pedagogical skills helps the trainee to developed self-motivation for teaching and good preparation for teaching practice and hence good academic performance. In the words of one of the College Programs officers, he said;

> *"Trainees equipped with pedagogical skills, have the capacity to plan, initiate, lead and develop education and teaching with the departure point in both general and subject-specific knowledge of learning. With these pedagogical skills also these trainees have the capacity to connect the teaching to research in the subject of interest"……*(CPO, 5).

Another SCC said,

> *"Trainers are conversant with pedagogical skills based on the changes brought by the competency bases curriculum where things like subjects were changed to activity areas, objectives changed to learning outcome, values and core competencies were included in a lesson during teaching and learning….."(SCC, 1).*

From the above discussion it emerged that majority of the participants showed that trainers had pedagogical skills through seminars and workshops on the training of the new curriculum (CBC) where changes on the pedagogical skills exists. The findings are in agreements with Gossenheimer, Ben, Carneiro and De castro (2017) in Brazil. The study found that there was a correlation between pedagogical skills and academic achievement. The above study is in contrary to Mahulo (2012) in Kenya that showed that training alone does not contribute to academic performance. Therefore this

implies that teacher trainers should train teacher trainees to acquire knowledge in pedagogy.

Similarly, the results showed that the trainers are able to utilize the available teaching resources (*Mean* = 4.08; *STD* = 0.78). In this case, majority of the participants (61.6%) agreed as another 27.1% strongly agreed that trainers are able to utilize the available teaching resources. Thus, whereas a whole 88.7% of the participants cumulatively agreed that trainers are able to utilize well the available teaching resources, only 5.6% cumulatively disagreed. When trainers are able to utilization available teaching resources, the trainees benefit greatly in terms of academic achievement leading to quality academic results.

One participant said,

> *"Trainers utilize the available teaching resources like books, computers, chats and pictures during teaching and learning"*…….(CPO, 2).

Another SCC said,

> *"Due to the change from 844 system of education to CBC, some of the institutions have not been equipped with the necessary teaching resources"*……(SCC, 6).

From the above discussion majority of the participants showed that trainers are able to utilize the available teaching and learning resources to enhance service delivery. Utilization of teaching and learning helps the trainers to deliver the content of the lesson easily and enhance understanding of the content of the lesson. The findings are in agreement with Wagura (2015) in Kenya who reported that utilization of instructional materials in the teaching of mathematics have a positive influence on the academic achievement. This implies that trainers should utilize teaching and learning materials during service delivery to improve academic outcome.

Similarly, the results show that trainers are able to use a variety of teaching methods (*Mean* = 4.04; *STD* = 0.89). The view was convergent as shown by a standard deviation of less than 1.00, as majority of the participants agreed with the statement. Specifically, 48.2% of participants agreed and 32.4% strongly agreed that trainers are able to use a variety of teaching methods. However, some 11.6% of them remained undecided and some 6.7% of participants disagreed, as 1.1% strongly disagreed that trainers are able to effectively use a variety of teaching methods. Cumulatively, while 80.6% of trainee teachers agree that trainers are able to use a variety of teaching

methods, some 7.8% of the disagreed with the assertion. This shows that trainers have and practice a variety of methods in their teaching. This enhances trainees' interest in learning thereby improving academic performance. Similarly, during the interview sessions with the college program officers, it was also found that teacher trainers using various methods of teaching results in good academic outcome of the trainees. Here is what one of the program officers had to say;

> *"Teaching methods are used to facilitate learning and satisfaction among the teacher trainees. A variety of the use of teaching methods is a must for teachers if learning is to be effective and efficient. When an instructor knows the stories behind the students, they are able to design lessons that are more fun, more meaningful, and more effective because they were designed with the students' best interests in mind"……..*(CPO, 3).

Another participant said,

> *"CBC entails a variety of teaching methods even though some colleges have to borrow some resources for effective service delivery"…*……. (SCC, 4).

From the ongoing discussion it emerged that majority of teacher trainers' use a variety of teaching methods and this motivate the trainees to learn. The findings is in agreement with Lin, Chen and Liu (2017) in Taiwan on opinion towards digital learning and academic performance, the results concluded that digital learning presents better positive effects on learning outcome. However, Gopang (2016) in Parkistan reported that teaching methods depends on improving teacher training among other key initiatives on academic performance. Therefore it is worth noting that trainers should use a variety of teaching methods as well as other key initiatives to improve academic achievement.

The results showed that while some trainers are conversant with the new curriculum others are not. This view was presented by a mean rating of 3.96 (*STD* = 0.94), with 50.0% of the study participants agreeing and another 28.9% strongly agreeing that their trainers are conversant with the new curriculum. This was against 12.3% who were undecided and cumulatively 8.8% of the participants who disagreed (6.3% disagree; 2.5% strongly disagree) that their trainers are conversant with the new curriculum. This result articulates trainers' competence on the curriculum which

enhances delivery content and the academic performance of the teacher trainees.

One informant reported,

> *"Trainers are conversant with the new curriculum since they are able to demonstrate during seminars and workshop"*…….(SCC, 1).

Another participant said,

> *"Trainers are able to demonstrate their knowledge In service delivery using the new curriculum like changes in lesson preparation where terminologies like topic is changed to strand, objective to learning outcome"*.....(CPO, 19).

Majority of the participants reported that trainers are conversant with the new curriculum because of the seminars and workshops held. The above discussion is in contrast with Gokmenoglu and Clark (2015) in Turkey who found out that training on national education reforms have low teacher enthusiasm for teacher training. However, the above findings was in agreement with Coombs (2017) in Singapore who found out that curriculum approaches have a positive effect on the academic achievement. This implies that trainers should be sensitized on the new changes in the curriculum.

Further, the results show that many of the trainees were satisfied that their trainers were able and always prepare their instructional materials (*Mean* = 4.09; *STD* = 0.68). This position was held by majority (61.6%) of the participants who agreed that their trainers always prepare their instructional materials and another 25.4% of them strongly agreeing with the fact. However, 2.1% of participants disagreed and 0.4% strongly disagreed, but 10.6% were undecided regarding the statement that trainers prepare their instructional materials. This shows that most trainers have the competence to prepare the needed instructional materials. However, their standard becomes a challenge as some of the prepared materials could be below required standards thus lowering the quality of academic performance. Similarly, during the interview sessions with the deans of curriculum, it was also found that teacher trainers preparing adequately their instructional materials results in good academic outcome of the trainees. Here is what one of the program officers had to say;

> *"Instructional materials are essential since they help the teacher and learners avoid overemphasis on recitation and rote learning that can easily dominate a lesson. Resource materials allow learners to have practical experiences which help them to develop skills and concepts and to work in a variety of ways"…….. ..* (CPO, 4).

Another participant said,

> *"Several trainers have the instructional materials like learning aids, lesson preparation records"……*.(SCC, 3).

From the above discussion it emerged that majority of the participants reported that trainers prepare their instructional materials in order to deliver their trainings and this was in agreement with Akungu (2014) in Kenya who found out that instructional materials have a positive impact on academic outcome. The study was in contrast with Wagura (2015) in Kenya who found out that trainers have challenges on the preparation of instructional materials. This implies that trainers should plan early to overcome the challenges concerning instructional materials in order to deliver their services effectively.

The teacher trainees also agreed that classroom management by trainers is important to them. This was revealed by item rating of 3.93 (*STD* = 0.83), indicating that participants agreed with the statement that 'classroom management by trainers is important to me'. The view was convergent has indicated by a standard deviation less than 1.0 showing that the participants generally agreed. Specifically, 53.5% of participants agreed, 23.6% strongly disagreed, while 15.8% were undecided. On the other hand, only 6.7% disagreed with a further 0.4% strongly disagreeing. This shows that 77.1% of participants cumulatively agreed while only 7.7% cumulatively disagreed that classroom management by trainers is important to them.

One informant said,

> *"Training adults maybe a bit difficult because they have other responsibilities a part from studying therefore ground rules must be set for them to settle in class"……..*(CPO, 9).

Another one said,

> "*Trainers must have a flexible timetable and a program that enable the trainees to settle in class and at the same time move on with their daily activities"……*.(SCC, 2)

From the discussion on the issue of classroom management by trainers, majority of the participants agreed with the statement. Classroom management enhances learning through communication and collaboration between the teacher trainees and teacher trainer. The finding is in agreement with Okong'o, Ngao, Rop and Nyongesa (2015) in Kenya who found out that classroom management and content delivery have a positive impact on academic achievement of the learners. However, Gopang (2016) in Parkistan found out that learning environment depends on teaching strategies on academic achievements. This implies that classroom managements and teaching strategies should go hand in hand in order to improve quality learning.

On the contrary, the results showed that the teacher trainees are only moderately trained on co-curriculum activities. In this case, the survey report gave a mean of 3.38 (*STD* = 1.10) on the item that 'our trainers train us on co-curriculum activities'. In this case, 43.3% of the participants agreed, 13.0% strongly agreed while 16.9% were undecided. On the other hand, 22.2% disagreed as 4.6% of them strongly disagreed that their trainers train them on co-curriculum activities. Cumulatively, 56.3% of the participants agreed while 26.8% of them disagreed with the statement. This shows that co-curriculum activities are not trained by some of the trainers. Co-curriculum activities have a significant role in academic performance thus low participation in co-curriculum activities results into poor academic performance among trainee teachers. Similarly, during the interview sessions with the Sub County Coordinators of ECDE, it was established that co-curricular activities have had a significant positive impact on academic level achievement of students. One of the Sub County Coordinators had this to say;

> *"CO-curricular activities are designed and balanced with academic curriculum so that every trainee gets to learn beyond subjects. Moreover, co-curricular activities help the trainees to accomplish better grades in exam and to improve their class attendance, hence having a positive impact on class attendance of the students"……..*(SCC,4)

Another participant said,

> *"Training in co-curriculum activities is important as it enables the students to learn beyond the class work even though some trainees perceive co-curriculum activities as a waste of time…..*(CPO, 3).

From the discussion above, it emerged that majority of the participants showed that trainers train the trainees on co-curriculum activities. This enables them to identify their hidden talents that may help them in future. The above finding concurs with Hanushek (2011) in USA who studied on economic value of higher teacher quality and found out that future competencies like co-curriculum activities have a positive influence on academic achievement. This implies that teacher trainees should be encouraged to participate on co-curriculum activities through competitions among them.

On trainers' behaviors, the results showed that the trainers are generally well behaved. This was shown by a mean rating of 3.87 (*STD* = 0.81), with the majority (62.7%) of the participants agreed and 17.3% strongly agreed that trainers are well behaved. On the other hand, 10.6% were undecided and 9.2% of the participants disagreed that their trainers are well behaved. Collectively, 80.0% of teacher trainees agree that trainers are well behaved while only about 10% of them disagreed with the statement. This shows that trainers are generally well behaved in most of the colleges. This provides a good environment for good academic performance.

One participant said,

> *"Trainees are well behaved due to the strict ground rules that are set in the college. I have never seen students drunk during class hours or within the college"……*.....(CPO, 1).

Another informant said,

> *" The college administration have a class attendance register to monitor the course duration of a teacher trainees and this helps in punishing students who are truant"……*.(SCC, 3).

From the discussions on the behavior of the trainers, it emerged that majority of the participants reported that professional growth of the teacher is planned and should lead to the development towards education and academic achievement. The findings are in agreement with Ben and Ushie (2014) in Nigeria. It was reported that teachers should introduce basic rules during early stages, build upon learners, presents skills and ensure basic understanding skills to improve academic achievement. However the findings contradicts Grossman (2014) in USA who reported that behavior was not a key main factor towards academic achievements but teaching skills, professional

characteristics and classroom management enhance learning outcome. This implies that moral behavior should be instilled in trainers and trainees as well as other skills and character modification during training.

On syllabus completion, it emerged that not all trainers cover the required syllabus within the appropriate times. This was shown by a mean rating of 3.77 (*STD = 0.92*), where while 58.5% and 17.3% of the participants agreed and strongly agreed, respectively, that their trainers complete the syllabus at the right time, some 14.5% of the participants disagreed while 9.9% remained undecided. Thus, in total 75.8% of the participants agreed, but 14.5% of them disagreed that trainers complete the syllabus at the right time.

This suggest that whereas completion of syllabus in time allows the trainees time to review the contents and concepts adequately before facing the assessment leading to better academic performance, in some colleges trainers do not complete their syllabus in time.

> *"Training teachers require a lot of time to complete the syllabus even though co-curriculum activities deny the students and the trainers time to complete the syllabus at the right time and so they are forced to cover some topics hurriedly"……*(CPO9)

Another sub- county coordinator said,

> "*The trainees are adults who can read on their own and so they should always study ahead of their trainers to complete their syllabus"…*(SCC 5)

On the discussion that trainers complete their syllabus on the right time was reported by majority of the participants. Proper planning of the contents to be delivered within a syllabus enables trainers to complete their syllabus at the right time. The findings was in agreement with Rao (2014) in Nigeria who found out that improvement in program quality and learner outcome correlates with better educated teachers who engaged in better pedagogical practices like lesson preparation in relation to the syllabus coverage in order to achieve the lesson outcome at the right time. This implies that trainers should plan their lessons in order to complete their syllabus for better academic outcome.

4.6.2 Relationship between Teacher's Professionalism and Academic Performance

The study sought to investigate the relationship between trainer's professionalism and academic performance. To determine the relationship between trainer's professionalism and academic performance of teacher trainees, a correlation analysis was ducted. Table 28 presents the results of correlation analysis between trainer's professionalism and academic performance of pre-school teacher trainees.

Table 28:
Correlation between Trainer's Professionalism used and Academic Performance

		Trainer's Professionalism	Academic Performance
Trainer's Professionalism	Pearson Correlation	1	.401**
	Sig. (2-tailed)		.000
	N	284	284
Academic Performance	Pearson Correlation	.401**	1
	Sig. (2-tailed)	.000	
	N	284	284

Table 29 shows that the correlation between trainer's professionalism and academic performance of teacher trainees is positive and significant (n=284; r=.401; $p < 0.05$). The null hypothesis that: "*There is no significant relationship between trainer's professionalism and academic performance among trainees in pre-primary teacher training colleges in Kisumu County"* was therefore rejected. Therefore, it was concluded that trainers' professionalism has direct significant relationship to academic performance of pre-school teacher trainees.

In addition, to determine the actual influence of trainer's professionalism on academic performance of pre-school teacher trainees, a regression analysis was computed. Table 29 presents the model summary output of the regression analysis.

Table 29
Regression Model Summary of Trainer's Professionalism and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.401[a]	.161	.158	10.33512

a. Predictors: (Constant), Trainers' Professionalism

Table 29 shows *Adjusted R Square* of .158, implying that preparedness in relation to trainer's professionalism explains 15.8% variations in pre-school teacher trainees' academic performance. In other words, pre-school training college preparedness component of trainer's professionalism predicts performance of pre-school teacher trainees by about 16%. This suggests that one of the determinants of pre-school teacher trainee performance is the professionalism of the trainers.

The study further sought to determine whether the model, $Y = a + b_2 X_2 + e$, was fit and significant to predict the relationship between trainer's professionalism and academic performance of pre-school teacher trainees. This was investigated by use of regression ANOVA analysis, which result is presented in Table 30.

Table 30:
ANOVA Analysis for Trainers' Professionalism and Academic Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5771.308	1	5771.308	54.031	.000[b]
	Residual	30121.764	282	106.815		
	Total	35893.072	283			

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Trainers' Professionalism

Table 30 show statistics to ascertain whether the model which representing the relationship between trainers' professionalism measures and academic performance of pre-school teacher trainees as a fitting predictor. The results shows F (1, 282) = 54.03 with p- = 0.00. Since p-values was found to be less than 0.05 level of significance, it was concluded that the model was significant and that trainer's professionalism is a significant predictor of pre-school teacher trainee academic performance.

The study further sought to establish how much would a unit improvement in trainers' professionalism as an aspect of preparedness impact on academic performance of teacher trainees. To this end, coefficient values were explored and the results were presented in Table 31.

Table 31:
Coefficients Analysis for Trainers' Professionalism and Academic Performance of Teacher Trainees

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	23.389	3.796		6.161	.000	15.916	30.861
	Trainers' Professionalism	7.929	1.079	.401	7.351	.000	5.806	10.052

a. Dependent Variable: Academic Performance

Table 31 shows that a unit improvement in preparedness in trainer's professionalism leads to an increase of 7.929 units CI (5.806, 10.052) in pre-school teachers' academic performance. Based on *p*-value of 0.00 as shown on Table 31, this increase was statistically significant at 0.05 significant level. If this statistics is substituted in the model:

$Y = a + b_2 X_2 + e$, then the approximated pre-school teachers' academic performance level can be estimated using; Y= 23.389 + 7.929$\underline{X_2}$ where X_2 is trainer's professionalism.

4.7 Utilization of Teaching and Learning Resources and Academic Performance

The third objective sought to establish the relationship between utilization of teaching/learning resources and the performance of trainee teachers in ECDE training centers. The objective was addressed by, first, exploring the views of trainees on the utilization of teaching and learning resources in their colleges, followed by investigating the relationship between teaching and learning resources used and academic performance of trainee teachers in ECDE training centers.

4.7.1 Utilization of Teaching and Learning Resources

The views of the respondents on the utilization of training *resources* was captured using 8 items measured on a 5-point Likert scale rated as strongly disagree (SD) = 1, disagree (D) = 2, Undecided (UD) = 3, agree (A) = 4 and Strongly Agree (SA) = 5. The results were analyzed to show frequency, percentages, mean and standard deviation as presented in Table 32

Table 32:
Utilization of Teaching/Learning Resources and Academic Performance

Indicators	SA	A	UD	D	SD	Mean	STD
	5	4	3	2	1		
I can study on my own using computer technology.	93 32.7%	135 47.5%	27 9.5%	25 8.8%	4 1.4%	4.01	0.94
I am familiar with the new technology of writing materials	76 26%	130 45.8%	34 12.0%	31 10.9%	13 4.6%	3.79	1.09
Materials improve holistic development.	100 35.2%	157 55.3%	21 7.4%	3 1.1%	3 1.1%	4.22	0.71
Materials and activities improve my creativity.	138 48.6%	110 38.7%	22 7.7%	9 3.2%	5 1.8%	4.29	0.87
I get enough materials from the college.	20 7.0%	100 35.2%	31 10.9%	91 32.0%	42 14.8%	2.87	1.23
Demonstration kits enhance intellectual ability.	47 16.5%	155 54.6%	47 16.5%	18 6.3%	17 6.0%	3.69	1.01
I am familiar with screening tools for early identification of children with special needs and disabilities.	30 10.6%	74 26.1%	69 24.3%	53 18.7%	58 20.4%	2.87	1.29
Learning materials can boost my career.	107 37.7%	136 47.9%	31 10.9%	7 2.5%	3 1.1%	4.18	0.80
Overall Mean						**3.74**	**0.99**

Source: Survey Data, 2022

Table 32 illustrates that although majority of the sampled teacher trainees generally agreed (*M*=3.74; *STD*=0.99) that there is good utilization of available teaching/learning resources, some of them held a contrary opinion. For example, whereas in many institutions teacher trainees are able to use computer technology on their own while studying, in others they are not able. This was proved by the response

in the statement that 'I can study on my own using computer technology'. The item attracted a mean response rate of 4.01 (*STD* = 0.94), with 47.5% agreeing and 32.7% strongly agreeing that they can study on their own using computer technology. However, 9.5% were undecided but 8.8% of participants disagreed and some 1.4% of them strongly disagreed they can study on their own using computer technology. This shows that while 80.2% of participants cumulatively agreed that they can study on their own using computer technology some 10.2% of them confirmed that they are not able to study on their own using computer technology. This is against the fact that by using computer technology, the teacher trainees are able to access digital resources and conveniently study the course to improve academic performance. In fact, qualitative data obtained from interviews with College program Officers, revealed that application of ICT in education has a significant contribution on learning outcome among the trainees or students. In fact, one of the officers had this to say;

"Incorporating ICTs has become a very important priority in the education sector. These technologies can contribute to universal access to education, equality in instruction, quality in teaching and learning and the professional development of teachers, as well as to more efficient management and administration of education systems. In fact, the analysis of ICTs in the education sector is closely tied to the objectives of quality, equity and efficiency"…… (CPO5)

Another participant said,

> *"Yes, I have personally undertaken a course in basic computer packages so that I can monitor the trainers using Teacher Professional Appraisal Development (TPAD) using computer technology"……*(SCC 3)

From the above discussions majority of the participants reported that they can study on their own using computer. Computer garget enables the learners to learn with or without the help of the teacher. The trainers can also pass knowledge and skills using computer. The finding is in agreement with Effiong, Ekpo and Igiri (2015) in Nigeria who found out that oral teaching alone cannot be the key to successful pedagogy the teacher has to use instructional materials like computers to enhance learning outcome. The study by Okong'o et al. (2015) found a positive and significant correlation between learning resources and academic achievement therefore the use of computer technology should be encouraged in pre-school teacher training centres to enhance academic outcome.

Further, the results showed that although majority of the teacher trainees were familiar with the new technology of writing materials, as reflected by a mean rating of 3.79 (*STD* = 0.71), some of them accepted that they are not familiar with the new technology of writing materials. This view was shown by 45.8% of participants who agreed and another 26.8% who strongly agreed that they were familiar with the new technology of writing materials, compared to 12.0% who were undecided, 10.9% who disagreed and 4.6% of them who strongly disagreed. This shows that whereas 72.6% of the participants cumulatively agreed, 15.5% cumulatively disagreed that they were familiar with the new technology of writing materials. This shows although that many of the respondents alluded that they were familiar with the new technology of writing materials, some of them were not. Yet, being familiar with new writing technologies facilitates learning resulting into improved academic performance.

One informant reported,

> *"I do promote my trainers by motivating them through induction to familiarize them with the technologies of writing like the use of computer gadget"....*(CPO 5)

Another participant said,

> "*I do encourage trainers to use new technology of giving out notes like the use of projector while delivering a lesson"…….*(SCC 3)

From the discussion above emerged that majority of the participants reported that they are familiar with the new technology. The new technology of writing involves the use of computer as its enables the trainers and trainees to have neat notes which are visible all the time. The finding is in agreement with Effiong (2015) in Nigeria on the impact of instructional materials on academic achievement. The results showed that new technologies like tablets, laptops and projectors enhance academic performance. It can be summarized that new technology enhances learning and teaching though reading and writing.

Suffice, the participants agreed that materials improve their holistic development (*Mean* = 4.22; *STD* = 0.71). This view was favored by majority of the participants where 55.3% agreed and 35.2% strongly agreed. Cumulatively, 90.5% of participants agreed that materials improve their holistic development, but some 2.2% cumulatively

disagreed. This result underscores the value of materials in development for teacher trainees. The significance of teaching and learning materials were also highlighted by one of the Sub County Coordinators, of ECDE, where he said that teaching and learning materials plays a key role in education outcome of the preschool trainees and so, their availability and adequacy was key to any ECDE college. Here is what he had to say;

> *"Teaching and learning materials are important because they can significantly increase student achievement by supporting student learning. In fact, students taught with instructional materials performed significantly better than those taught without instructional materials and also that the use of instructional materials generally improved students' understanding of concepts and led to high academic*
>
> *achievements"……..* (SCC, 1)

Another participant added,

> *"The teacher trainees are allowed to have phones and computers in school even though some of the trainees do not have digital machines to improve holistic development"……*(CPO 6)

From the discussion above, majority of the participants reported that materials improve holistic development. Materials that are manipulated develop learners socially, physically, spiritually, emotionally and develop their cognitive skills. The finding was in agreement with Lin, Chen and Liu (2017) in Taiwan who reported that digital learning present better positive effects on learning outcome than traditional teaching does. Therefore, it can be concluded that holistic development is enhanced by improved materials.

Similarly, the results showed that computer equipment and materials improve creativity among teacher trainees (*Mean* = 4.29; *STD* = 0.87). The view was held by majority of the participants who strongly agreed (48.6%) and who agreed (38.7%) that materials and activities improve their creativity. However, 7.7% of the participants were undecided and 5.0% disagreed. Thus, 87.3% of participants cumulatively agreed but 5.0% cumulatively disagreed that material and activities improve their creativity. Hence availability of materials enhances creativity among teacher trainees.

One informant had this to say,

> *"Materials like digital devices can help in improving creativity thus discover the hidden talents like singing that may help the trainees in future to earn their living".....* (CPO 6)

Another participant had this to say,

> *"I feel that the county government should organize competitions in the pre-school training in order to improve on the use of materials and activities".....*(SCC 2)

From the ongoing discussion, majority of the participants revealed that materials and activities improved their creativity. Materials and activities that involve fine muscles and motor skills improve creativity, personality, self-esteem and self-control in a person. The finding was in agreement with Gopang (2016) in Pakistan whose study finding revealed that learning resource and learning environment correlates well with academic performance. However, the finding was in disagreement with Alanazi (2016) in USA who found out that exploring play innovation and cultivation of the imagination for future achievement had a positive significant on the academic performance therefore, it can be conclude that materials and activities improves creativity.

On the adequacy of materials, the results of the survey show that the teacher trainees do not get enough materials from the college. The mean response rating of 2.87 indicates that the participants generally disagree with the statement that teacher trainees do get enough materials from the college. Specifically, while 35.2% of participants agreed, 32.0% disagreed that they get enough materials from the college. Further, 14.8% strongly disagreed as only 7.0% strongly agreed. This shows that 42.2% of participants cumulatively agreed while 46.8% cumulatively disagreed reflecting that majority of the participants negated the claim that teacher trainees get enough materials from the college like demonstration kits.

Equally, on the use of demonstration kits the results show a lukewarm response rating of (*STD* =1.01). This was corroborated by the fact that, in as much as, many (54.6%) of the participants agreed and 16.5% strongly agreed that demonstration kits enhance their intellectual ability, some 16.5% of them were undecided and 12.3% generally disagreed. Thus, although 71.1% of participants cumulatively agreed, some 12.3% of

them cumulatively disagreed. This underlines the availability and use of materials such as demonstration kits in enhancing academic performance. One of the participant said,

> *"Demonstration kits like laboratory equipment make learning and teaching more easy, enjoyable and even motivate trainees to participate in order to learn….." (CPO3)*

Another SCC said,

> *"Despite some colleges having inadequate demonstration kits, they should try to buy, borrow or improvise so that trainees can acquire intellectual abilities that can help them in their daily lives……" SCC 5*

From the excerpts above, it is evident that demonstration kits improves holistic development like cognitive through reasoning, social through participation, language through taking and emotional through turn taking. The findings showed that demonstration kits enhance learning as it them nervous, happy and retained concepts. The finding concurs with Akungu (2014) in Kenya who found out that demonstration kits used during teaching and learning positively influence academic achievement. Therefore demonstration kits should be made available in all the teacher training institution so that teacher trainees can learn better hence good academic performance.

However, the teacher trainees out rightly agreed that learning materials can boost their career (*Mean* = 4.18; *STD* = 0.80). This opinion was popular with majority of the participants where 47.9% agreed as 37.7% strongly agreed. On the other hand, 2.5% of participants disagreed, another 1.1% strongly agreed and another 10.9% were undecided on the matter. This shows that 85.6% of participants agree that learning materials can boost their career, only 3.6% cumulatively disagree. Thus it is concluded that having learning materials available and accessible to trainee teachers enhances academic performance. These findings were also supported by one of the College Program Officers during the interview session, where he also stressed that having adequate and quality learning materials enhances academic performance among the trainees. Here is an excerpt on what he said;

> *"Instructional and learning materials helps in exploring the full potentials of the teacher trainees in terms of learning thereby easing the transfer of knowledge from the trainers to the trainees. These include concrete and non-concrete materials, visuals and audio-visuals (kits, newspapers, videos, textbooks, pictures and projectors etc.), equipment, fixtures and any other material that can improve the teaching and learning process".....* (SCC, 7)

Another participant commented.

> *"Teaching and learning materials should be provided by the county government for uniformity in colleges"....*(CPO 2)

From the forgoing discussion, it can be concluded that majority of the participants agreed that they don't get enough materials from the college. The finding was in agreement with Bizimani and Orodho (2014) in Rwanda who found out that teacher who utilize the available teaching and learning resources during service delivery achieve their learning outcome. Therefore, it can be concluded that enough materials from colleges can motivate learners to study and acquire knowledge, skills and attitude.

However, the result showed that the trainee teachers were not familiar with screening tools for early identification of children with special needs and disabilities (*Mean* = 2.87; *STD* = 1.29). The participants view was divergent with the responses being almost evenly distributed across the response continuum. Specifically, 26.1% of participants agreed, 24.3% were undecided while 20.4% strongly disagreed as another 18.7% disagreed. The results showed that 39.1% of participants cumulatively disagreed while 36.7% cumulatively agreed that they are familiar with screening tools for early identification of children with special needs and disabilities. This challenge makes it difficulty in managing and teaching for children with special needs.

One participant had this to say,

> *"As an educationist in a teacher training, I am well versed with screening tools or children with special needs because during my training I did a course in special need so I should also equip the teacher trainees with the same knowledge".....*(CPO 3)

One sub county observed,

> *"There is a specialist who deals with screening of learners with special needs at the sub county head quarter"……*(SCC 3)

From the ongoing discussion, it is evident that most participants showed that demonstration kits enhance their intellectual ability. Laboratory kits motivate leaners to study and manipulate the kits. The finding was in agreement with Mfereke (2016) in Nigeria whose study finding revealed that there exist significant positive relationship between teacher utilization of school facilities like laboratory and academic achievement of trainees. The finding did not agree with Abubakari (2016) in Ghana who found out that training materials have a significant relationship and teacher job stress on academic achievement. It can be summarized that demonstration materials should be improved to enhance academic outcome.

The findings on the item, learning materials can boost my carrier showed that 37.7% strongly agreed that learning materials can boost their carrier, 47.9% agreed, 10.9% remained undecided on the matter while 2.5% disagreed and 1.1% strongly disagreed with the statement. The results showed that learning materials can boost their carrier with a (mean = 4.187, STD= 0.803) cumulatively, 85.6% agreed with the statement while 13.4% disagreed and another 10.9% undecided. It can be concluded that learning materials can boost student's carrier. The findings was supported by college program officers who reported that,

> "*Learning materials like chats computers can help the trainees even though I have never thought of inducting other trainers and trainees and on the integration of the gadgets" ……*(CPO, 5)

Another participant had this to say,

> "*We have never organized an induction in the sub county to create awareness on the learning materials"……*(SCC, 1)

From the foregoing discussion, it is evident that majority of the study participants alluded to the fact that learning materials can boost career. This finding concurs with Intano *et al* (2017) in Philippines who found out that there was a positive perception of the effectiveness of e-materials like laptops and digital tablets. However, Raja and Wei (2014) in Pakistan found out that computer knowledge and skills imparted in the trainees should be increased through rigorous training to make it more

meaningful.it can be summarized that training materials can boost career .

4.7.2 Relationship between Utilization of Teaching and Learning Resources and Academic Performance

To determine the relationship between utilization of teaching and learning resources and academic performance of teacher trainees, a correlation analysis was conducted. This was investigated by testing the null hypothesis that, "there is no significant relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County", using Pearson Product Moment Correlation analysis. Table 33 presents the results of correlation analysis between utilization of teaching and learning resources and academic performance of pre-school teacher trainees.

Table 33:
Correlation between Utilization of Teaching & Learning Resources and Academic Performance

		Utilization of Teaching & Learning Resources	Academic Performance
Utilization of Teaching & Learning Resources	Pearson Correlation	1	.416**
	Sig. (2-tailed)		.000
	N	284	284
Academic Performance	Pearson Correlation	.416**	1
	Sig. (2-tailed)	.000	
	N	284	284

Table 33 shows that the correlation between utilization of teaching & learning resources and academic performance of teacher trainees is positive and significant (n =284; r=.416; $p < 0.05$). Hence, the null hypothesis that ***there is no significant relationship between utilization of teaching & learning resources and academic performance among trainees in pre-primary teacher training colleges in Kisumu County*** was rejected. Consequently, it was concluded that indeed there is statistically significant relationship between utilization of teaching and learning resources and academic performance among trainees in pre-primary teacher training colleges in Kisumu County. Therefore, it should be acceptable that utilization of teaching &

learning resources significantly influences academic performance of learners including pre-school teacher trainees.

To determine the actual influence of utilization of teaching & learning resources on academic performance of pre-school teacher trainees, a regression analysis was computed. Table 34 presents the output of the regression analysis.

Table 34:
Regression Model Summary of Utilization of Teaching and Learning Resources and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416[a]	.173	.170	10.26151

a. Predictors: (Constant), Utilization of Teaching & Learning Resources

Table 34 shows Adjusted *R* Square of 0.170 which signifies that utilization of teaching and learning resources as an aspect of preparedness explains 17.0% variations in pre-school teacher trainee performance. In other words pre-school training college preparedness component of utilization of teaching & learning resources measures predicts performance of pre-school teacher trainees by 17.0%. This implies that one of the significant determinants of pre-school teacher trainee performance is utilization of teaching & learning resources.

The study further sought to determine whether the model $Y = a + b_3 X_3 + e$ was fit and significant to predict the relationship between utilization of teaching & learning resources and academic performance of pre-school teacher trainees. This led to computation of ANOVA analysis. According to Sawyer (2009), assumptions underlying ANOVA include parametric data measures, normally distributed data, similar group variances, and independence of subjects. The analysis is as presented in Table 35.

Table 35:
ANOVA Analysis for Utilization of Teaching and Learning Resources and Academic Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6198.884	1	6198.884	58.870	.000[b]
	Residual	29694.188	282	105.299		
	Total	35893.072	283			

a. Dependent Variable: Academic Performance
b. Predictors: (Constant), Utilization of Teaching & Learning Resources

Table 35 show statistics to ascertain whether the model which represents the relationship between utilization of teaching and learning resources and academic performance of pre-school teacher trainees as a fitting predictor. The results shows *F* (1, 282) = 58.870 with *p*-value = 0.00 suggesting that the model is a significant predictor of trainees' academic performance. Thus, at 0.05 level of significant, it was concluded that the model was significant and that utilization of teaching and learning resource as an aspect of preparedness is a significant predictor of pre-school teacher trainee academic performance.

The study further sought to establish how a unit of preparedness in terms of utilization of teaching and learning resource lead to and changes in academic performance of teacher trainees. To this end, beta coefficient analysis was ran and the results were presented in Table 36

Table 36:
Coefficients Analysis for Utilization of Teaching and Learning Resource and Academic Performance of Teacher Trainees

	Unstandardized Coefficients		Standardized Coefficients			95% CI	
	B	Std. Error	Beta	T	Sig.	LB	UB
(Constant)	28.401	2.998		9.473	.000	22.499	34.302
Utilization of teaching & learning resource	6.512	.849	.416	7.673	.000	4.841	8.182

Table 36 shows that a unit of preparedness in terms of utilization of teaching and learning resource leads to an increase of 6.512 units with 95% CI(4.841, 8.182) in pre-school teachers' academic performance. Based on p-value of 0.00 as shown on Table 36, this increase was found to be significant since it was less than 0.05 level of significant. If this statistics is substituted in the model, $Y = a + b_3 X_3 + e$, then Y= 28.401 + 6.512 X_3 where X_3- Utilization of Teaching and Learning Resources and Y- Academic Performance.

4.8 Quality Control and Academic Performance

The fourth objective sought to establish the relationship between quality control and the performance of trainee teachers in ECDE training centers. The objective was addressed by, first, exploring the views of trainees on the level of quality control in their colleges, followed by investigating the relationship between quality control and academic performance of trainee teachers in ECDE training centers.

4.8.1 Views on Adherence to Quality Control

The views on adherence to quality control was captured using 10 items measured on a 5-point Likert scale rated as strongly disagree (SD) = 1, disagree (D) = 2, Undecided (UD) = 3, agree (A) = 4 and Strongly Agree (SA) = 5. The results were analyzed to show frequency, percentages, mean and standard deviation as presented in Table 37.

Table 37:

Views of Respondents on Quality Control in their Institutions

Indicators	SA	A	UD	D	SD	Mean	STD
	5	4	3	2	1		
Trainers follow government policies and regulations concerning my training.	67	185	16	16	0	4.06	0.71
	23.6%	65.1%	5.6%	5.6%	0.0%		
Trainers follow the contents of the programs while training.	77	175	19	13	0	4.11	0.71
	27.1%	61.6%	6.7%	4.6%	0.0%		
The county government carryout internal audit for the pre- primary teacher training colleges.	22	117	68	68	9	3.26	1.00
	7.7%	41.2%	23.9%	23.9%	3.2%		
Trainers do various assessments using various methods.	73	160	24	25	2	3.97	0.87
	25.7%	56.3%	8.5%	8.8%	0.7%		
The ministry of education should carryout formal audit of the existence of the colleges.	147	111	9	9	8	4.33	0.90
	51.8%	39.1%	3.2%	3.2%	2.8%		
The government has been keen on the existence of pre- primary teacher training colleges.	79	121	29	40	15	3.73	1.16
	27.8%	42.6%	10.2%	14.1%	5.3%		
The administration is discharging its duties.	36	142	71	32	3	3.62	0.88
	12.7%	50.0%	25.0%	11.3%	1.1%		
The county government handles the challenges facing pre- primary teacher training colleges.	12	101	60	88	23	2.96	1.07
	4.2%	35.6%	21.1%	31.0%	8.1%		
The county government accredits pre-primary teacher education colleges.	15	172	71	25	1	3.61	0.73
	5.3%	60.6%	25.0%	8.8%	0.4%		
The ministry of education evaluates pre-primary teacher training colleges.	24	208	32	16	4	3.81	0.71
	8.5%	73.2%	11.3%	5.6%	1.4%		
Overall Mean						3.75	0.87

Source: Survey Data (2022)

From Table 37, it is evident that the quality control measures the ECDE teacher training colleges in Kisumu County is rated at 3.75 (SD=0.87) in the scale of 1 to 5. This suggests that while some respondents accepted there is adequate quality control in their institutions, other held a contrary opinion. For instance, whereas majority (88.7%) of the respondents at either agreed or strongly agreed with the statement that trainers follow government policies and regulations concerning their training, 5.6% remained neutral on the matter and some 5.6% of them disagreed with the statement. Generally, majority of the teacher trainee supported the statement that their trainers adhered to government policies and regulations on training, translating to a mean rating of 4.067 (*STD*=0.716). This suggests that there is generally considerable level of application of government policies and regulations on training in the sampled ECDE teacher training colleges as a way of maintaining quality and standard. This finding was supported by one of the Sub County coordinator of ECDE during the interview session, who stressed that it is very important for teacher trainers to follow government policies and regulations because this will help them stick to the standards set and promote production of quality preschool teachers. Here is an excerpt on what he said;

> *"Teacher trainers follow standards based instruction as stipulated by the government policies and regulations to ensure that their teacher trainees meet the demands targeted. Following a standards-based model for trainee assessment and instruction is an approach teacher trainers use to track preschool trainees performance and plan focused instruction to meet the specific needs of preschool trainees "…(*SCC, 5)

Another informant had this to say,

> *"Our college follows government policy on training and this is evident when sourcing quality trainers and admission of teacher trainees. A trainer must be a level ahead of the level he or she is training but some trainers are over qualified to teach the diploma"…….*(CPO, 10)

From the discussions above, it emerged that majority of the participants agreed that trainers follow government policies and regulations concerning training. The findings agreed with Maremo,(2017)in Kenya who found out that quality assurance policy implemented was effective in the academic outcome .It can be concluded that government policies and regulations ensures smooth running of all institutions.

On whether trainers follow the contents of the programs while training, the study found that 61.6% agreed and 27.1% strongly agreed with the statement, while 6.7% were undecided. Only 4.6% of the respondents refuted the statement, indicating that majority of the respondents believed that teacher trainers adhered to the contents of the teaching programs during training, translating to a mean response of 4.11 (*STD* =0.71).

One of the participants said,

> *"As an organizer, I do monitor the contents of the program using lesson observation and college routine to ensure that the contents of the training are followed*"…….(CPO, 2)

Another participant added,

> *"I often asses college programs in my Sub county and I noted that some colleges are experiencing challenges in relation to training"……* (SCC, 4)

From the discussions above, the findings showed that majority of the participants agreed that trainers follow the contents of the programs while training. Findings disagreed with Amosa, Folasayob and Oluwatoyin (2015) in Nigeria. Results showed that participants agreed that the manner in which trainers approach their teaching do not promote teaching and learning materials. Some of the teachers find it difficult to use instructional strategies in their teaching activities. The finding disagrees with Grossman (2014) in USA who found out that teacher personality was central to better teacher qualifications and training alone do not make a good teacher. It can be concluded that following contents of the program does not guarantee good training.

On whether there frequent internal audit for the pre- primary teacher training colleges, that the results of the survey revealed that this is done but not always (*Mean*= 3.26; *STD*=1.01). Summary of response on this item show that 41.2% agreed and 7.7% strongly agreed with the statement that the county government carryout internal audit for the pre- primary teacher training colleges. *However, close to a quarter* (23.9%) of the respondents remained noncommittal on the matter, but 23.9% disagreed and 3.2% strongly disagreed that county government regularly carryout internal audit in their pre- primary teacher training college. Cumulatively, many (48.9%) of the respondents at believed that county governments carried out internal audit on the training of

preschool teachers, but only some 26.1% of them generally held a contrary view. Similarly, during the interview session with the College Programs officers, it was found due to partial devolved function of the county government, the county government oversees the operations of the ECDE in the counties including the preparedness of the pre-primary teacher training colleges. Here is what one of the College Programs officers had to say;

> *"It is also the duty of the county government to conduct internal audit for the preschool training colleges to assess or evaluate the level of preparedness of these institutions in producing quality preschool teachers that can bring quality learning outcome among the ECDE learners*" …… (CPO, 12).

One informant said,

> "*It is the duty of the county government to carry out internal audit to ensure quality training in the preprimary teacher training colleges but it has been noted that they rarely do their work"…….*(SCC, 4)

From the discussions above, majority of the participants reported that the county government do carry out internal audit for pre-primary teacher training collages. Internal audit enables the trainees and trainers to work effectively. The findings concur with Ajuoga, Indoshi and Agak (2010) in Kenya who found out that competency of quality assurance and standards officers on the skills was average and that they needed a further training to offer supervision approach and audit. On the other hand, Maiyo, Ngina and Wetiba (2017) in Kenya found out that QUASO officers were not visiting the schools physically and regularly. It can be concluded that as much as the county government are mandated to carry out internal audit for pre-primary teacher training it should be regular and in all the institutions.

When probed on the statement of "*Trainers do various assessments using various methods*", the study found that over half of the respondents at 56.3% agreed and 25.7% strongly agreed with the statement. Only 9.5% generally disagreed and 8.5% were undecided on the statement. In overall, more than four out of five (82.0%) of the teacher trainees confirmed that their trainers used array of methods to conduct various assessments, translating to a fairly high response rate (*Mean*= 3.97; *STD*=0.87). Similarly, during the interview session with the college program officers, it was found that teacher trainers applied various assessment methods to ascertain the quality and

preparedness of teacher trainees. In fact, here is what one of them had to say;

> *"Given that teaching practice is a significant aspect of teacher preparation that equips the teacher trainees with pedagogies that enhance learners' learning, teacher trainers in the preschool colleges use various ways and methodologies to assess the trainees' level of preparedness and ability to deliver quality services*"……(CPO, 15).

Another informant reported,

> *"Teacher preparedness plays a significant role in building the trainee teachers' pedagogic strategies constituting teachers' thinking, including their knowledge of both content and pedagogic content, their practices and the impact of the practices on leaners' outcome"…….* (SCC, 5).

From the above discussion the findings reveal that majority of the participants reported that trainers do various assessments using various methods and this finding was in agreement with Hsu (2017) in Taiwan who found out that quality assurance control evaluates both teaching and research within one single assessment exercise, the results were used to determine resources allocation of higher learning education system. Ndani and Kimani (2010) in Kenya found out that the notion of quality education should go beyond the students result. It can be concluded that trainers should do a lot of assessments using various methods.

This shows that application of various methods to assess suitability of teachers for teaching practice is vital for establishing their level of preparedness. These sentiments were also echoed by one of the Sub County coordinators of ECDE during the interview, when she also said;

> *"Use of various methods to assess the teacher trainee is very useful since each method has its own strength and weakness, hence using wide range of methods will make one method compliment the other and as such, there will be effective and efficient evaluation and assessment of teachers for their suitability to carry out the teaching practice for good learning outcome"……..* (CPO, 5).

Another officer said,

> "*The introduction of CBC enables trainers to use a variety of teaching methods that motivates learners"…….* (SCC, 5)

From the above discussion, it is evident that majority of the participants reported that quality assurance and standards officers carry out assessment and audit of trainers and trainees. The finding was in agreement with Aber, Berman, Tsingo and Wolf (2018) in Ghana whose finding showed that quality learning is achieved through quality environment. The finding concurs with Ndebele and Tshuma (2015) in Zimbabwe who found out that external quality assessment had significance towards accountability for improvement of teaching practice.

On whether the ministry of education should carryout formal audit of the existence of the colleges, 51.8% strongly supported the opinion, 39.1% supported the statement. However, 3.2% remained neutral on the statement, but 6.0% disagreed with the statement. Generally, majority of the respondents at 90.9% were support of thee statement. This translated to a mean response rate of 4.33 (*STD*=0.90), suggesting that the students generally are happy when the ministry of education carryout formal audit in their colleges. This shows that the ministry of education should conduct a formal audit on the existence of preschool colleges to establish their adequacy and quality of services offered by them.

One CPO said,

> "*The ministry of education do carry out formal audit to check whether the college is registered to offer training, have quality trainers, enough facilities and resources"*……(CPO, 2)

Another participant added,

> *"Even though the ministry of education carry formal audit on the existence of some colleges, they should also carry out formal audit at the sub county offices to check on the reports from the existing colleges*"…..(SCC, 3)

From the discussion above, majority of the participants reported that the government has been keen on the existence of preschool education center. This is because it was reported that the ministry of education do not carry formal audit at the sub county offices. The finding was in agreement with Gudo, Oanda and Olel (2011) in Kenya who found out that public universities did not have the necessary physical facilities to effectively offer services to current student body .However, Moreno (2017) in Kenya

found out that the government observes challenges facing secondary schools in relation to policy and the results indicated a moderate positive relationship. From the above studies it can be concluded that strict policy guideline enhance quality outcome

The study sought views of the respondents on whether the government has been keen on the existence of pre-primary teacher training colleges. The results show that 42.6% and 27.8% agreed and agreed strongly, respectively, that the government has been keen on the existence of pre- primary teacher training colleges. However, 10.2% remained neutral on the statement, but 19.4% of them believed that the government has been keen on the existence of pre-primary teacher training colleges. In overall, 70.4% were in support of the assertion that the government has not been keen on the existence of pre- primary teacher training colleges, while only 19.4% indicated otherwise. This confirm that the Kenyan government has not put enough attention and focus on the development or progress of pre-primary teaching colleges. Indeed, this came up quite clearly in one of the interviews, in which the respondent raised concerns about the laxity of the county governments in revamping ECDE training colleges. In the words of one of the Sub County coordinators of ECDE:

> *"One of the Key challenges the ECDE sector is facing is lack of commitment by both the national government and the county government to see that it grows and developed into a more robust entity and produce quality of preschool teachers that are competitive globally"…….* (CPO, 13)

Another informant reported,

> *"I think that the government has not been keen on the existence of some preprimary teacher training colleges because of the requirements that qualifies them to be colleges and at times the physical colleges are more than the registered colleges"…….(*SCC,3)

From the discussion above majority of the participants reported that the government has been keen on the existence of pre-school teacher education. Few participants reported that the government has been keen on the existence pre-school teacher education with a participant doubting the government based on the requirements of a college based on physical facilities and environment. The finding concurred with Gudo *et al* (2011) in Kenya who found out that public universities did not have the necessary physical facilities to effectively offer services to current student body.

However, Moreno (2017) in Kenya found out that the government observes challenges facing secondary schools in relation to policy and the results indicated a moderate positive relationship from the above study it can be concluded that strict policy guideline enhance policy guideline.

On the statement whether the college administration was carrying out its duties, 62.7% agreed with the statement, 12.7% strongly agreed, while quarter (25.0%) of the respondents remained undecided on the statement. Only 12.4% of them cumulatively disagreed with the statement, implying that most of the respondents generally accepted (*Mean*= 3.62; *STD*=0.88) that their administrations carried out their mandate and duties satisfactorily. It is the responsibility of college administrators to offer their duties diligently in order to improve on the programs of the college that may lead to their success and the teacher trainees at large.

One participant said,

> *"The administrators are carrying out their duties well in order to secure their jobs and to improve on the performance of teacher trainees"…….(PO, 16)*

Another participant added,

> "*I attended a college where the trainees had a culture of passing exams well and I noted that the college was also overpopulated unlike another college where most of the trainees were failing in the national examination and the students were very few…..(*SCC, 2*)*

On the statement that "The county government handle the challenges facing pre-primary teacher training colleges", the study found that 35.6% agreed with the statement, while 4.2% strongly supported the statement. However, 21.1% remained neutral on the statement but a significant proportion (39.1%) of the respondents disagreed with the statement. This implies that there was a divided opinion on whether the county government effectively handles the challenges facing pre-primary teacher training colleges, as reflected by a mean response rating of 2.96 (*STD*=1.07) on the item. Equally, these sentiments vividly came up during the interview session with the College Programs officers, in which the respondent raised concerns about lack of adequate support from the county government to solve the many problems and

challenges facing the ECDE training colleges. In the words of one of the College Programs officers, he said:

> *"Although most of the pre-primary training colleges in the county face myriad of challenges ranging from limited resource to non-corporative or laxity of the stakeholders, most of the preschool colleges receive less support from both the county government and the national government and that is why the county governments cannot adequately solve the problems facing the ECDE sector"…….* (CPO, 19).

Another participant said,

> *"The county government official face numerous challenges concerning pre-primary teacher training centers and this is evident right from remuneration off the trainers. Each college pays their trainer depending on the ability and location of the college"…….(SCC, 2)*

From the on-going discussion majority of the participants revealed that the county government handles the challenges facing the pre-primary teacher training collages with slightly low participants disagreeing. The finding concur with Gopang (2016) in Pakistan who found out that improved learning outcome depends on improved facilities trainers teaching and learning resources and quality assurance guideline the finding was also in agreement with Akpan (2016) in Nigeria who found out that challenges of teaching and learning materials have a negative impact on the academic achievement. It can be concluded that the county government should prepare well to overcome the challenges that are facing the collages through organisation of trainings like workshops and seminars to sensitize trainers and trainees.

The study also found that 60.6% of the respondents agreed with the statement that the county government accredits pre-primary teacher education colleges, 5.3% strongly agreed, while 25.0% remained neutral on the statement. However, only 9.2% cumulatively disagreed with the statement. This implies that majority (65.9%) of the respondents confirmed (*Mean*= 3.61; *STD*=0.73) that the county government accredits pre-primary teacher education colleges, meaning, it is the mandate of the county government to approve or accredit the preschool training institutions.

One of the participants said,

"The county government accredits preprimary teacher education colleges after assessment ant evaluation of the facilities, qualified trainers, location".....(CPO, 3)

Another officer commented,

> *"Availability and utilization of the training facilities, qualified trainers internal and 'external auditors are enough to qualify an institution for training*"……(SCC, 4)

From the discussion, it emerged that majority of the participants agreed that the county government accredits pre- primary teacher education collages with minority disagreeing with the statement. The finding was in agreement with the United Nations Agenda (2030) that requires that all learners should acquire knowledge and skills needed to promote sustainable development therefore it can be summarized that more teacher training collages should be accredited to offer training for teachers that may lead to more learners in the pre-school sectors.

On whether the ministry of education evaluates pre-primary teacher training colleges, the results of the survey established that 73.2% agreed with the statement, 8.5% strongly agreed, while 11.3% were undecided on the statement. Only 5.6% and 1.4% disagreed and strongly disagreed, respectively, with the statement. In overall, majority (81.7%) of the respondents agreed with the statement, implying that many of the respondents agreed (*Mean*= 3.81; *STD*=0.71) that it was the duty of the ministry of education of both the national and the county government to assess the pre-primary training colleges.

One of the participants reported,

> *"The ministry of education evaluates the preprimary teacher education centers through national government and county government. The ministry ensures that the trainees are examined by a common body that is Kenya National Examination Council, the college have a common curriculum and syllabus and co coordinators employed by the Kenyan government*".(CPO, 6)

Another informant added

> *"I am employed by the government and paid by the government to offer quality services to the government through the ministry of education national government and county government*"….(SCC, 1)

From the above discussion, majority of the participants reported that the ministry of education evaluates pre-primary teacher training with minority of the participants disagreeing. The finding is in agreement with Sustainable Development Goal (SDG 4) and the United Nations agenda (2030) that requires all learners to access basic education by the year 2030 this can be achieved through evaluation and auditing of pre-primary teacher education where teachers of the learners are trained to offer quality services in the contrary scholars in the area of pre-primary have mentioned lack of quality teachers as an impediment to provision of quality education in pre-schools.(Aga Khan Foundation,2010)

4.8.2 Relationship between Quality Control and Academic Performance

To determine the relationship between utilization of teaching and learning resources and academic performance of teacher trainees, a Pearson Product Moment Correlation analysis was conducted. Table 38 presents the results of correlation analysis between utilization of teaching and learning resources and academic performance of pre-school teacher trainees.

Table 38:
Correlation between Quality Control and Academic Performance

		Quality Control	**Academic Performance**
Quality Control	Pearson Correlation	1	.844**
	Sig.		.000
	N	284	284
Academic Performance	Pearson Correlation	.844**	1
	Sig. (2-tailed)	.000	
	N	284	284

As shown in Table 38, the results of the study established that the correlation between quality control and academic performance of teacher trainees were found to

be moderately positively correlated, $r(284) = .844$, $p < 0.05$. The null hypothesis that, there is no significant relationship between quality control and academic performance among trainees in pre-primary teacher training colleges in Kisumu County, was therefore rejected. Therefore it was concluded that adherence to quality control measures significantly influences academic performance of pre-school teacher trainees.

Further, to determine the actual influence of adherence to quality control on academic performance of pre-school teacher trainees, a regression analysis was computed. Table 39 presents the output of the regression analysis.

Table 39:

Regression Model Summary of Quality Control and Academic Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844[a]	.713	.712	6.04460

Predictors: (Constant), Quality Control

Dependent Variable: Academic Performance; Predictor: (Constant), Quality Control

Table 39 shows *R* Square of .713 with an *adjusted R square* of .712. This implies that preparedness in relation to adherence to quality control measures explains 71.2% (*Adjusted R Square* =.712) of the variations in pre-school teacher trainee academic performance. In other words, pre-school training college quality control measures as a component of preparedness predicts academic performance of pre-school teacher trainees by about 71%. This implies that one of the significant determinants of pre-school teacher trainee academic performance is adherence to quality control measures.

The study further sought to determine whether the model $Y = a + b_4 X_4 + e$ was fit and significant to predict the relationship between adherence to quality control measures and academic performance of pre-school teacher trainees. The analysis is as presented in Table 40

Table 40:
ANOVA Analysis for Quality Control on Academic Performance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	25589.599	1	25589.599	700.372	.000[b]
	Residual	10303.472	282	36.537		
	Total	35893.072	283			

a. Dependent Variable: Academic Performance
b. Predictors: (Constant), Quality Control

Table 40 displays a statistics on whether the model which represents the relationship between quality control measures and academic performance of pre-school teacher trainees is a fitting predictor. From F (1, 282) = 700.372 with p- value = 0.00, it was concluded that the model was statistically significant and that preparedness in terms of quality control measures is a significant predictor of pre-school teacher trainee academic performance. The study further sought to establish how a unit of preparedness in terms of adherence to quality control measures lead to and changes in academic performance of teacher trainees. To this end, beta values presented in Table 41 was interpreted.

Table 41:
Coefficients Analysis for Quality Control Measures and Academic Performance of Teacher

		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	10.756	1.560		6.896	.000	7.686	13.826
	Quality Control	12.629	.477	.844	26.465	.000	11.690	13.569

a. Dependent Variable: Academic Performance

Table 41 shows that a unit of preparedness in terms of adherence to quality control measures leads to an increase of 12.629 units within 95% CI (11.69, 13.57) in pre-school teachers' academic performance. Based on p-value = 0.00 and t-value of 26.465 as shown in Table 4.23, this increase was found to be significant and approximated model is;

$Y = a + b_4 X_4 + e$, then

$Y = 10.756 + 12.629\underline{X_4}$ where X_4 – preparedness in terms of adherence to quality control measures.

4.9 Combined Preparedness Indicators and Academic Performance

Multiple regression analysis was conducted to establish a linear model that could be used to estimate the optimal level of academic performance of trainee teachers in pre-primary school colleges in Kisumu County given various aspects of preparedness of pre-primary teacher education program indicators. The four preparedness indicators status of training facilities, trainer‘s professionalism, teaching and learning materials and adherence to quality control standards were in put in the model at once as predictor variables. The multiple-regression did not only help to investigate how well the four aspects of preparedness of pre-primary teacher education program were able to predict the level of academic performance of trainee teachers in pre-primary school colleges in Kisumu County, but also provided information about the relative contribution of each aspect of preparedness. Each preparedness variable was evaluated in terms of its predictive power, over and above that offered by all the others. It provided the understanding on how much unique variance in academic performance each aspect of preparedness of pre-primary teacher education program explained. This was shown by coefficient values in Table 42.

Table 42:

Summary of Regression Analysis of Preparedness Indicator

Variable	Zero Order r	B	SE	Beta	t	Sig.	95% CI	Part correlation
(Constant)		-.579	2.530		-.229	.819	(-5.559, 4.401)	
Training Facilities	.290	1.313	.610	.073	2.153	.032	(.112, 2.513)	.065
Trainers' Professionalism	.401	1.479	.755	.075	1.998	.048	.116, 2.965)	.059
Utilization of Teaching & Learning Resources	.416	1.369	.586	.087	2.336	.020	(.215, 2.522)	.071
Quality Control	.844	11.619	.489	.777	23.758	.000	(10.656, 2.581)	.720

R=.862; Adjusted R Square= .740; df1=4, df2=279, F=202.197, p =.000

Summary of Regression Analysis of Combined Preparedness Indicators on Academic Performance

$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$, where Y= Academic Performance; $X_{i=1-4}$ = Prepared in Pre-primary trainee colleges (1-Training Facilities; 2-Trainers' Professionalism; 3-Utilization of Teaching & Learning Resources; 4-Quality Control).

Approximated value of $Y = -.579 + 1.313X_1 + 1.479X_2 + 1.369X_3 + 11.619X_4$

Table 42 shows that all the aspects of preparedness of pre-primary teacher education program are positively correlated with academic performance. Although the direction of relationships between them was positive in all cases, the magnitude of relationship differed. The strongest relationship was between quality control and academic performance, as reflected by a significant positive correlation coefficient value of 0.844 (p <.000). On the flip side, it was surprising that training facilities had the least direct relationship with academic performance in pre-school training colleges. This was reflected by the fact that it recorded the least Pearson product moment correlation coefficient value of .290 (p<.001). However, given the p-value less than 0.001 is a quite acceptable alpha level, the correlation between training facilities and academic performance is statistically significant.

The correlation between utilization of teaching & learning resources and academic performance was the second highest in magnitude. It was positive and significant (r= .416, p<.001), implying a statistically significant linear correlation between the two variables. Equally, the study findings show that trainers' professionalism, as an aspect of preparedness of pre-primary teacher education program, had a statistically significant correlation with academic performance among the pre-school teacher trainees (r=.401, p<.001).

However, when all the four selected aspects of preparedness of pre-primary teacher education program were bundled together, they exhibited a stronger association with academic performance among the pre-school teacher trainees as opposed to when they were treated individually. The coefficient value of their correlation was established to be R=.862, suggesting that there is a stronger positive association between the two variables. The subsequent impression given is that high preparedness of pre-primary teacher education program in the pre-school teacher training colleges leads to higher academic performance among the trainees.

The model summary reveals that the four selected aspects of preparedness in the model explains 74% of the variation in academic performance among the trainees in pre-school teacher training colleges in Kisumu County, as indicated by the Adjusted R^2=.740. Disparity in academic performance among the pre-school teacher training colleges can be explained by the differences in their level of preparedness. However, the ANOVA output results demonstrate that preparedness of pre-primary teacher education program is a significant predictor to academic performance, F (4, 279) =202.197, p=.000 <.001. Therefore, the knowledge of the level of preparedness of pre-primary teacher education program is important in predicting trainees' academic performance in pre-school teacher training colleges. On the other hand, to establish which of the aspects of preparedness of pre-primary teacher education program accounts for most of the academic performance of teacher trainees in Kisumu County, both unstandardized and standardized coefficient values were interpreted.

Suffice; it is evident that the four aspects of preparedness of pre-primary teacher education program had different levels of influence on academic performance of teacher trainees among the pre-primary teacher colleges. Nonetheless, all of the four aspects of preparedness had significant positive unstandardized coefficients; training facilities (B=1.313; t=2.153, p=.032), trainers' professionalism (B=1.479; t=1.998, p=.048), utilization of teaching and learning resources (B=1.369, t= 2.336, p=.020) and quality control (B=11.619; t=23.758, p<.001). Therefore, given that all the four of aspects of preparedness of pre-primary teacher education program had significant unstandardized co-efficient values, there is sufficient evidence to conclude that preparedness of pre-primary teacher education program has statistically significant influence on academic performance among the pre-primary teacher trainees.

To compare the level of influence of the four aspects of preparedness of pre-primary teacher education program on academic performance among the pre-school trainee teachers in Kisumu County, standardized coefficient values were explored. In order of influence, it emerged that quality control (*Beta*=.777) had the highest influence on academic performance. When quality control improves by one standard deviation there is subsequent improvement in academic performance by .777 standard deviations. Equally, it had an unstandardized value of 11.619 within a 95% *CI* (10.656, 12.581), suggesting that a unit rise in quality control, as an aspect of

preparedness of pre-primary teacher education program, results into a subsequent rise in academic performance among the pre-school trainee teachers by 11.619 units.

The second aspect of preparedness of pre-primary teacher education program, in terms of influence, on academic performance is utilization of teaching & learning resources which had a standardized coefficient value of .087. This implies that when ways of utilization of teaching & learning resources is improved up by one standard deviation there would be subsequent improvement in academic performance by .087 standard deviations. Correspondingly, utilization of teaching & learning resources had an unstandardized value of 1.369 within a 95% CI (1.215, 2.522), suggesting that a unit rise in utilization of teaching & learning resources, as an aspect of preparedness, would result into a subsequent improvement in academic performance by 2.336 units.

The third aspect of preparedness, in terms of influence, is trainers' professionalism (*Beta*=.075). When trainers' professionalism goes up by one standard deviation there would be subsequent improvement in academic performance by .075 standard deviations. Likewise, it had an unstandardized value of 1.479 within a 95% *CI* (1.116, 2.965), signifying that a unit rise in trainers' professionalism, as an aspect of preparedness of pre-primary teacher education program, would result into an ensuing improvement in pre-school teacher trainees' academic performance by 1.479 units.

Lastly, the fourth aspect in terms of influence, was training facilities with an unstandardized coefficient value of 1.313 within a 95% CI (1.112, 2.513), implying that for each one unit improvement in training facilities there would be a corresponding improvement in academic performance by 1.313 units, when other factors are held constant. Equally, one standard deviation improvement in training facilities in pre-school teacher trainee colleges would result into improvement in academic performance by only .073 standard deviations.

Furthermore, the study explored part correlation coefficients which reflected the contribution of each aspect of preparedness of pre-primary teacher education program to the total *R* squared of the model. The results revealed that each of the aspects contributes uniquely to the model. For example, whereas preparedness of pre-primary teacher education program in terms of quality control had a part correlation

coefficient of .720 which translates to 51.8% of the unique contribution to R-Squared, training facilities reflected almost a negligible (< 0.1%) contribution to the model.

Utilization of teaching & learning resources uniquely explains about 0.5% and trainers' professionalism explains about 0.3% of the variance in academic performance among the pre-school teacher trainees. Nonetheless, it was concluded that preparedness of pre-primary teacher education program regression model was adequate to predict academic performance in pre-primary teacher training colleges. The model was statistically significant, accounting for 74.0% (Adjusted R^2=.740) of the variation in academic performance among the pre-school trainees in ECDE teacher trainee colleges in Kisumu County. These findings were in agreement with that of Gopang (2016), who also found that improving the quality of education depends on improving training facilities, quality of trainers, teaching and learning resources and adherence to learning environment as outlined by quality assurance guidelines. Although educational inputs like training facilities (Amsterdam, 2010), professionalism of trainers (Glewwe, Hanushek and Ravina, 2011; Hanushek,2011), utilization of teaching and learning resources (Bizimana and Orodho, 2014) have been linked with sufficient delivery of training services among colleges for primary, secondary, and higher education teachers, Pre-Primary teachers training colleges seem to have been overlooked.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This section presents summary of data findings, conclusions and research recommendations. It also provides suggestions for further studies. The study sought to establish the relationship between training facilities used, trainer's professionalism, utilization of teaching and learning resources and quality control as predictors of academic performance among diploma pre-primary teacher trainees in Kisumu County. It was anticipated that preparedness would manifest in a verity of ways as indicated from both quantitative and qualitative data as generated from the results of the study.

5.1 Summary of the findings

The major findings are summarized based on study objectives as follows:

5.1.1 Relationship between training facilities used and academic performance

The first objective sought to establish the relationship between training facilities used and the performance of trainee teachers in ECDE training centers. The results of the study established that ECDE training centers have moderately adequate training facilities. The study findings revealed that; in many of the ECDE training centers the classrooms were not very spacious, college playgrounds are not conducive for sporting activities, the latrines in the colleges were not enough nor clean, the computer labs were not well equipped and dormitories were found to be moderately adequate but lacked enough bedding for teacher trainees in boarding institutions. Likewise, most of the college libraries were found not equipped with relevant materials and use of computers by the students was found to be limited. The findings also revealed that whereas many of the institutions had water and electricity connections, their supply was unstable. Pearson product moment correlation analysis revealed that availability of training facilities positively correlated with academic performance among the ECDE trainees. Regression analysis also revealed that availability of training facilities is a significant predictor to academic performance of the ECDE trainees.

5.1.2 Relationship between trainer‘s professionalism and academic performance

The second objective sought to establish the relationship between trainers' professionalism and the performance of trainee teachers in ECDE training centers. The finding of the study was that most of the trainers were competent in their subject areas and pedagogical skills, the trainers were able to utilize the available teaching resources and most of them were able to use a variety of teaching methods. On new curriculum, the findings indicate that not all trainers were conversant with the new curriculum, but it was established that many of the trainers prepared their instructional materials. The results showed that the teacher trainees were not always trained on co-curriculum activities because the trainers were ill prepared in co-curriculum activities. Equally, the study established that trainers did not always complete the syllabus at the right time. However, Pearson product moment correlation analysis revealed that trainers' professionalism positively correlates with academic performance among the ECDE trainees. Regression analysis also revealed that trainers' professionalism was a significant predictor to academic performance of the ECDE trainees. Trainer professionalism was found to significantly influence academic performance of trainee teachers

5.1.3 Utilization of teaching and learning resources and academic performance

The third objective sought to establish the relationship between utilization of teaching/learning resources and the performance of trainee teachers in ECDE training centers. Based on this objective, the study found that not all teacher trainees were able to use computer technology on their own while studying, that only some of the teacher trainees were familiar with the new technology of writing materials and the study established that most of the teacher trainees did not get enough materials from their college. Equally, the findings established that most of the trainee teachers were not familiar with screening tools for early identification of children with special needs and disabilities. However, correlation analysis established that utilization of teaching/learning resources positively correlates with academic performance among the ECDE trainees. Regression analysis also revealed that utilization of teaching/learning resources was a significant predictor to academic performance of the ECDE trainees. Utilization of teaching/learning resources was found to significantly influence academic performance of trainee teachers.

5.1.4 Relationship between quality control and academic performance

The fourth objective sought to establish the relationship between quality control and

the performance of trainee teachers in ECDE training centers. The finding of the study established that most of the trainers follow government policies and regulations concerning their training and follow the contents of the programs while training. It came out from the results of the study that county governments only occasionally carried out internal audit on the training of preschool teachers, but the ministry of education always carryout formal audit of the existence of the colleges. In fact, the study found out that the county government hardly handled effectively the challenges facing pre- primary teacher training colleges. Similarly, the study established that the Kenyan government had not put a lot of concentration and focus on the development or progress of pre-primary teaching colleges. On the role of the college administration, the finding of the study revealed that some of the college administrations did not carry out their mandate and duties satisfactorily. On the relationship between quality control and academic performance of trainee teachers, correlation analysis established that the two variables significantly and positively correlate with each other. Regression analysis also revealed that quality control is a significant predictor to academic performance of the ECDE trainees. The study established that quality control significantly directly influence academic performance of trainee teachers.

5.2 Conclusions of the Study

From the findings, the study concludes that; classrooms of significant number of pre-primary school colleges in Kisumu County were not spacious enough to make trainee teachers learn comfortably. From the study findings many ECDE training centers did not have adequate training facilities, it is concluded that appropriate physical facilities such as playing ground, latrines, computer laboratories and dormitories are only moderately adequately prepared, serviced or furnished to facilitate effective learning of the preschool teacher trainees. It was therefore concluded that college libraries were not adequately equipped with relevant materials. From the study findings, it was concluded that most of the preschool colleges in Kisumu County were ill prepared in terms of teaching facilities to enhance effective learning and good academic performance among the trainees. However, from the finding that availability of training facilities was positively correlated to academic performance among the ECDE trainees, and that it was a significant predictor to academic performance of the ECDE trainees, it was concluded that availability and use of training facilities is

important in enhancing academic performance.

The study concludes that most of the trainers of preschool trainee teachers were competent enough to carry out their duties, and that they were also competent in pedagogical skills. Secondly, from the findings, it was concluded that the trainers were able to make good use of the available teaching resources and practice a variety of methods in their teaching to tackle new curriculum. The findings indicated that not all trainers were conversant with the new curriculum, but it was established that many of the trainers prepared their instructional materials. On the flip flop, it also concluded from the study finding that teacher trainees were not properly trained on co-curriculum activities because their trainers were ill prepared in co-curriculum activities. Equally, the study concluded that although ECDE trainers never complete syllabus in time, they generally uphold professionalism. However, from the finding that trainer‘s professionalism was positively correlated to academic performance among the ECDE trainees, and that it was a significant predictor to academic performance of the ECDE trainees, it was concluded that trainer‘s professionalism was important in enhancing academic performance.

From the findings of the study, it can be concluded that most of the teacher trainees were not able to use computer technology on their own while studying. Only a few of trainees were familiar with the new technology of writing materials screening facilities and they did not get enough materials from their college, it was concluded that many college lack these facilities. However, cognizant to the fact that correlation analysis established that utilization of teaching/learning resources positively correlates with academic performance among the ECDE trainees and the fact it predicts academic performance, it was concluded that utilization of teaching/learning resources is very important in enhancing academic performance of the ECDE trainees.

From findings of the study which sought to establish the relationship between quality control and the performance of trainee teachers in ECDE training centers, it was concluded that most of the trainers adhere to government policies and regulations concerning their training with regard to contents of the teaching programs during training. From the findings of the role of county governments, it was concluded that county governments were not very effective in implementation of their role such

carrying out internal audit on the training of preschool teachers. Similarly, it was also concluded that both the governments have not been so keen on revamping and facilitating the pre-primary teacher training colleges. From the results of the correlation analysis results, it was concluded that quality control standards had direct bearing on academic performance of the ECDE trainees in pre-school colleges.

5.3 Study Recommendations

The following recommendations were made based on the findings and conclusions of the study:

The study found that most of the pre-primary school colleges in Kisumu County were not adequately prepared in terms of availability and adequacy of teaching facilities, this consequently impede good academic performance among the trainees. The study therefore recommended that both the national and county governments should put aside enough financial resources for revamping and furnishing the preschool colleges with the appropriate teaching facilities such as playing ground, latrines, computer laboratories and dormitories to enhance good academic performance.

The study found that there was a positive correlation between teacher's professionalism and academic performance of the trainees. Therefore, the ministry of education through various policies should uphold teacher professionalism through organizing various in-service training, career workshops and symposiums to increase competency of teachers especially in the new CBC curriculum.

The study established that optimal utilization of teaching and learning materials encourage good academic performance of the teacher trainees. Therefore, the government through the ministry of education should ensure that every pre-school college were not only well equipped with enough appropriate teaching and learning materials, but should strengthen quality and standard departments in the county to supervise on their effective utilization by the trainers.

Adherence to quality control standards among the pre-primary school colleges was the hallmark of preparedness for good academic outcome for the trainees. Therefore, both the national and the county governments should ensure that these colleges and their administration uphold quality standards at all time. This can be done through regular monitoring of the adherence of the laid down quality controls in the

institutions by quality and standard officers at the county and national government.

5.4 Suggestion for Further Studies

Based on the study findings, a further study is recommended to investigate the availability and adequacy of teaching and learning resources in pre-primary school colleges. Equally, the study recommends a study to investigate the effectiveness of implementation of national preschool education policy guidelines on teaching of the teacher trainees in preschool colleges. Lastly, a comparative study on adequacy of preparedness for good academic outcome among the trainees between public and private preschool college.

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APPENDICES

Appendix I: Letter of Introduction

Dear Sir/Madam,

My name is Dolphine Atieno Ondiek, a PhD student at Jaramogi Oginga Odinga University of Science and Technology undertaking a Doctor of Philosophy degree in Early Childhood Development and Education. Am conducting a study on the topic "*preparedness of pre-primary diploma teacher education program and academic performance of Teacher trainees in Kisumu County, Kenya"*. **There are no wrong or right answers**.

Since the study will be carried out in Kisumu County, I would be extremely grateful if you allow me to use your college as one of the sampled teacher training colleges. Kindly accord me necessary support as I seek to gather data that will enable me complete my course. Thank you in advance.

Yours faithfully,

Dolphine Atieno Ondiek (Student)

PARTICIPANT AGREEMENT:

I have read and am well informed about this study and my participation. I therefore voluntarily consent to respond to the survey.

Signature_____Date_____

Appendix II: Trainees Consent Form

This study is designed to investigate on "preparedness of pre-primary teacher education program and academic performance of teacher trainees in Kisumu County, Kenya. The findings might help in enhancing and improving the teaching and learning in the pre- primary teacher training colleges. I would like to request you to complete this research questionnaire and help on this noble task. Remember that all the information that you give will be treated with ultimate confidentiality kindly sign in the space provided if you agree to participate in the study.

Sign…… Date……..

Thank you for agreeing to participate in the study.

Yours faithfully,

Dolphine Atieno Ondiek

PhD student, Jaramogi Oginga Odinga University of Science and Technology

Appendix III: Questionnaire for the Trainees

This research is meant for academic purpose only. The aim of the study is to determine the *–preparedness of pre-primary diploma teacher education program and academic performance of teacher trainees in Kisumu County, Kenya".* I will kindly appreciate if you could fill in the following questionnaire. All the information obtained in connection with this study that can be identified with you will remain confidential. You are NOT required to write your name, department or section anywhere on this questionnaire. The questionnaire will take about 20 minutes to be completed.

Section I: Background Information

Kindly place a tick (√) or cross (x) in the brackets provided in this section

Please state your gender

Male [ ] Female[ ]

Please indicate your age bracket?

15-19years [ ] 20-25years [ ] 26-30years [ ] 31-35years [ ]

36-40years [ ] 41-45years [ ] 46-50years [ ] 51-55years [ ]

Above 56 years [ ]

Please indicate the level of your qualification

Proficiency [ ] ECDE Certificate [ ] Diploma Certificate [ ] Other (Specify) ……...

Mode of study

Full time [ ] Part Time [ ]

Type of college

Boarding [ ] Day [ ] Boarding and Day [ ]

Section II: Training facilities

Please use the scale below to respond to the following statement in relation to preparedness of pre-primary teacher education programs among pre-primary teacher trainees in early childhood and education colleges.

Key:

Strongly Agree (SA) 1	**Agree (A) 2**	**Undecided (UD) 3**	**Disagree (D) 4**	**Strongly Disagree (SD) 5**

		SA 1	**A 2**	**UD 3**	**D 4**	**SD 5**
1	I feel comfortable in spacious classrooms.					
2	I like the college kitchen because it is well kept.					
3	I feel safe and secured while using the college playground.					
4.	The latrines in the my colleges are enough and clean.					
5	Computer lab is well equipped with ICT gargets.					
6	Dormitories have enough bedding for all the students.					
7	I feel that college library is equipped with relevant materials.					
8	There are enough water supplies within the college.					
9	Electricity used in college is reliable.					

Section III: Trainer's Professionalism

Please use the scale below to respond to the following statement in relation to preparedness of pre-primary teacher education programs among pre-primary teacher trainees in early childhood and education colleges.

Key:

Strongly Agree(SA) 1	**Agree (A) 2**	**Undecided (UD) 3**	**Disagree (D) 4**	**Strongly Disagree(SD) 5**

		SA 1	**A 2**	**UD 3**	**D 4**	**SD 5**
1	Trainers are competent in their subject Areas					
2	Trainers are competent in pedagogical skills					
3	Trainers utilize the available teaching resources					
4	Trainers use a variety of teaching Methods					
5.	Trainers are conversant with the new curriculum.					
6	Trainers prepare their instructional materials.					
7.	Classroom management by trainers is important to me.					
8.	Our trainers train us on co-Curriculum activities.					
9.	Trainers are well behaved					
10.	Trainers complete the syllabus at the right time.					

Section IV: Utilization of Teaching /Learning resources

Please use the scale below to respond to the following statement in relation to preparedness of pre-primary teacher education programs among pre-primary teacher trainees in early childhood and education colleges.

Strongly Agree(SA) 1	**Agree (A) 2**	**Undecided (UD) 3**	**Disagree (D) 4**	**Strongly Disagree(SD) 5**

		SA 1	**A 2**	**UD 3**	**D 4**	**SD 5**
1	I can study on my own using computer technology.					
2	I am familiar with the new technology of writing Materials					
3	Materials improve holistic development.					
4	Materials and activities improve my creativity.					
5.	I get enough materials from the college.					
6	Demonstration kits enhance intellectual ability.					
7	I am familiar with screening tools for early identification of children with special needs and disabilities.					
8.	Learning materials can boost my career.					

Section V: Quality Control and Academic Performance

Please use the scale below to respond to the following statement in relation to preparedness of pre-primary teacher education programs among pre-primary teacher trainees in early childhood and education colleges.

Key:

Strongly Agree(SA) **1**	**Agree (A)** **2**	**Undecided (UD) 3**	**Disagree (D)** **4**	**Strongly Disagree(SD)** **5**

		SA 1	**A 2**	**UD 3**	**D 4**	**SD 5**
1	Trainers follow government policies and regulations concerning my training.					
2	Trainers follow the contents of the programmes while training.					
3	The county government carryout internal audit for the pre- primary teacher training colleges.					
4	Trainers do various assessments using various methods.					
5.	The ministry of education should carryout formal audit of the existence of the colleges.					
6	The government has not been keen on the existence of my pre- primary teacher training colleges.					
7.	The administration is discharging its duties.					
8.	The county government handles the challenges facing my pre- primary teacher training colleges.					
9.	The county government accredits my pre-primary teacher education colleges.					
10.	The ministry of education evaluates pre-primary teacher training colleges.					

Section VI: First year academic performance of teacher trainees

State the extent to which you agree with the following statements with regard to the preparedness of pre-primary teacher education programs and Academic performance on a scale of 1 = Strongly Agree, 2 = Agree, 3 = Undecided, 4 = Disagree and 5 = Strongly Agree. (**Note**: Preparedness is denoted by *training facilities, teacher professionalism, utilization of teaching and learning resources, and quality control*)

		1 (SA)	2 (A)	3 (U)	4 (D)	5 (SD)
1	Adequate preparedness at the college has enabled us to attain an average of distinction pass in our year-end exams					
2	Sufficient preparedness at the college has enabled us to attain an average of credit pass in our year-end exams					
3	Our performance has improved to an average of "pass" owing to sufficient preparedness in our college					
4	"Referral" cases has drastically reduced due to adequate preparedness of the programs offered in our college					
5	Cases of "Fail" have significantly reduced in our performance owing to high level of preparedness by the college					
6	Cases of "CRNM" have significantly reduced in our performance owing to high level of preparedness by the college					

Thank you

Appendix IV: Interview guide for pre-primary College Programme Officers

This guide will aid the researcher to conduct face to face interview with the College programme Officers, in as far as academic performance to teacher trainees is concerned.

Introduction: Good morning/afternoon sir/madam. Thank you for having granted me permission to interview you. I would like to assure you that the researcher intends to use the information gathered from this interview solely for academic work. The interview will take 30 minutes. All information will be treated with strict confidentiality.

Part A: Background information

1 (a) Gender

Male ( ) Female ()

(b) For how long have you been a trainer/program officer for pre-primary teacher education?

Below 5 years ( ) 6 – 10 years () 11 – 15 years () 16 & above ()

Please tick your academic qualification.

Untrained ( ) Certificate ( ) Diploma ( ) Graduate ( ) Master & above ( )

How do you source for quality trainers to provide services in your college?

How do you ensure that the syllabus coverage for all the learning areas are covered within the stipulated time?

Comment on the preparation of other trainers within your college.

How are the facilities in your college maintained?

How do you motivate your trainers to improve academic achievement?

Comment on the relationship between the trainers and the teacher trainee.

Give your opinion on external examination done in your college.

Appendix V: Interview guide for sub county coordinator for ECDE

This guide will aid the researcher to conduct face to face interview with the sub county coordinator for ECDE, in as far as academic performance to teacher trainees is concerned.

Introduction: Good morning/afternoon sir/madam. Thank you for having granted me permission to interview you. I would like to assure you that the researcher intends to use the information gathered from this interview solely for academic work. The interview will take 30 minutes. All information will be treated with strict confidentiality.

Part A: Background information

1 (a) Gender

Male( )Female ()

For how long have you been a sub county coordinator for ECDE in the sub county?

Below 5 years () 6 – 10 years () 11 – 15 years () 16 & above ()

Please tick your academic qualification.

Untrained ( ) Certificate ( ) Diploma( ) Graduate( ) Master &above( )

Comment on the availability of training facilities for pre-primary teacher education in your sub county.

How do trainers perceive the new curriculum to be implemented in pre-primary teacher education system?

How often do you assess the pre-primary teacher education colleges in your county?

What challenges do pre-primary teacher training colleges experience in relation to service delivery?

How does the county government ensure quality training in the pre-primary teacher education in your sub county?

Conclusion: Thank you for your time, I believe your responses will contribute a lot to my research work.

.Appendix VI : Teacher Trainees' Diploma KNEC 2021 Examination Results

Student Code	Score (%)	Grade
1	52	C
2	41	D
3	42	D
4	54	C
5	54	C
6	40	D
7	31	E
8	35	E
9	38	E
10	33	E
11	39	E
12	50	C
13	52	C
14	64	B
15	37	E
16	40	D
17	41	D
18	54	C
19	41	D
20	40	D
21	34	E
22	35	E
23	30	E
24	39	E
25	70	A
26	50	C
27	63	B
28	64	B
29	49	D
30	56	C
Student Code	Score (%)	Grade

31	60	B
32	50	C
33	74	A
34	71	A
35	52	C
36	56	C
37	29	E
38	38	E
39	87	A
40	27	E
41	50	C
42	57	C
43	58	C
44	22	E
45	74	A
46	59	C
47	32	E
48	42	D
49	82	A
50	49	D
51	62	B
52	52	C
53	37	E
54	41	D
55	56	C
56	71	A
57	66	B
58	76	A
59	28	E
60	27	E
Student Code	Score (%)	Grade
61	60	B
62	42	D

63	38	E
64	39	E
65	41	D
66	40	D
67	40	D
68	39	E
69	49	D
70	34	E
71	38	E
72	28	E
73	52	C
74	75	A
75	38	E
76	64	B
77	42	D
78	56	C
79	69	B
80	45	D
81	36	E
82	68	B
83	67	B
84	43	D
85	47	D
86	44	D
87	59	C
88	49	D
89	37	E
90	71	A
91	77	A
92	40	D
93	40	D
94	70	A
95	52	C

96	47	D
97	37	E
98	47	D
99	38	E
100	46	D
101	62	B
102	31	E
103	37	E
104	46	D
105	36	E
106	74	A
107	51	C
108	47	D
109	38	E
110	43	D
111	44	D
112	68	B
113	34	E
114	75	A
115	43	D
116	45	D
117	35	E
118	32	E
119	44	D
120	43	D
121	39	E
122	44	D
123	40	D
124	42	D
125	44	D
126	44	D
127	38	E
128	72	A

129	43	D
130	42	D
131	39	E
132	23	E
133	31	E
134	45	D
135	47	D
136	35	E
137	46	D
138	40	D
139	40	D
140	61	B
141	75	A
142	26	E
143	70	A
144	43	D
145	61	B
146	63	B
147	70	A
148	46	D
149	45	D
150	38	E
151	45	D
152	35	E
153	68	B
154	88	A
155	73	A
156	47	D
157	45	D
158	35	E
159	30	E
160	73	A
161	40	D

162	39	E
163	35	E
164	60	B
165	72	A
166	60	B
167	59	C
168	68	B
169	76	A
170	67	B
171	55	C
172	40	D
173	47	D
174	53	C
175	64	B
176	40	D
177	39	E
178	39	E
179	46	D
180	51	C
181	47	D
182	38	E
183	63	B
184	51	C
185	69	B
186	53	C
187	65	B
188	68	B
189	68	B
190	40	D
191	43	D
192	46	D
193	29	E
194	77	A

195	65	B
196	36	E
197	66	B
198	36	E
199	48	D
200	38	E
201	38	E
202	31	E
203	46	D
204	38	E
205	48	D
206	46	D
207	55	C
208	48	D
209	35	E
210	35	E
211	47	D
212	55	C
213	48	D
214	39	E
215	46	D
216	33	E
217	23	E
218	51	C
219	36	E
220	35	E
221	27	E
222	46	D
223	66	B
224	62	B
225	36	E
226	40	D
227	49	D

228	40	D
229	26	E
230	78	A
231	64	B
232	40	D
233	40	D
234	71	A
235	42	D
236	55	C
237	65	B
238	46	D
239	58	C
240	67	B
241	34	E
242	40	D
243	83	A
244	69	B
245	57	C
246	24	E
247	31	E
248	81	A
249	64	B
250	84	A
251	46	D
252	66	B
253	70	A
254	74	A
255	21	E
256	57	C
257	57	C
258	72	A
259	61	B
260	79	A

261	41	D
262	38	E
263	35	E
264	42	D
265	66	B
266	63	B
267	70	A
268	41	D
269	62	B
270	18	E
271	34	E
272	82	A
273	67	B
274	62	B
275	55	C
276	40	D
277	71	A
278	38	E
279	34	E
280	62	B
281	62	B
282	85	A
283	86	A

APPENDIX: VII. 2021 Pre-School Performance In KNEC Diploma

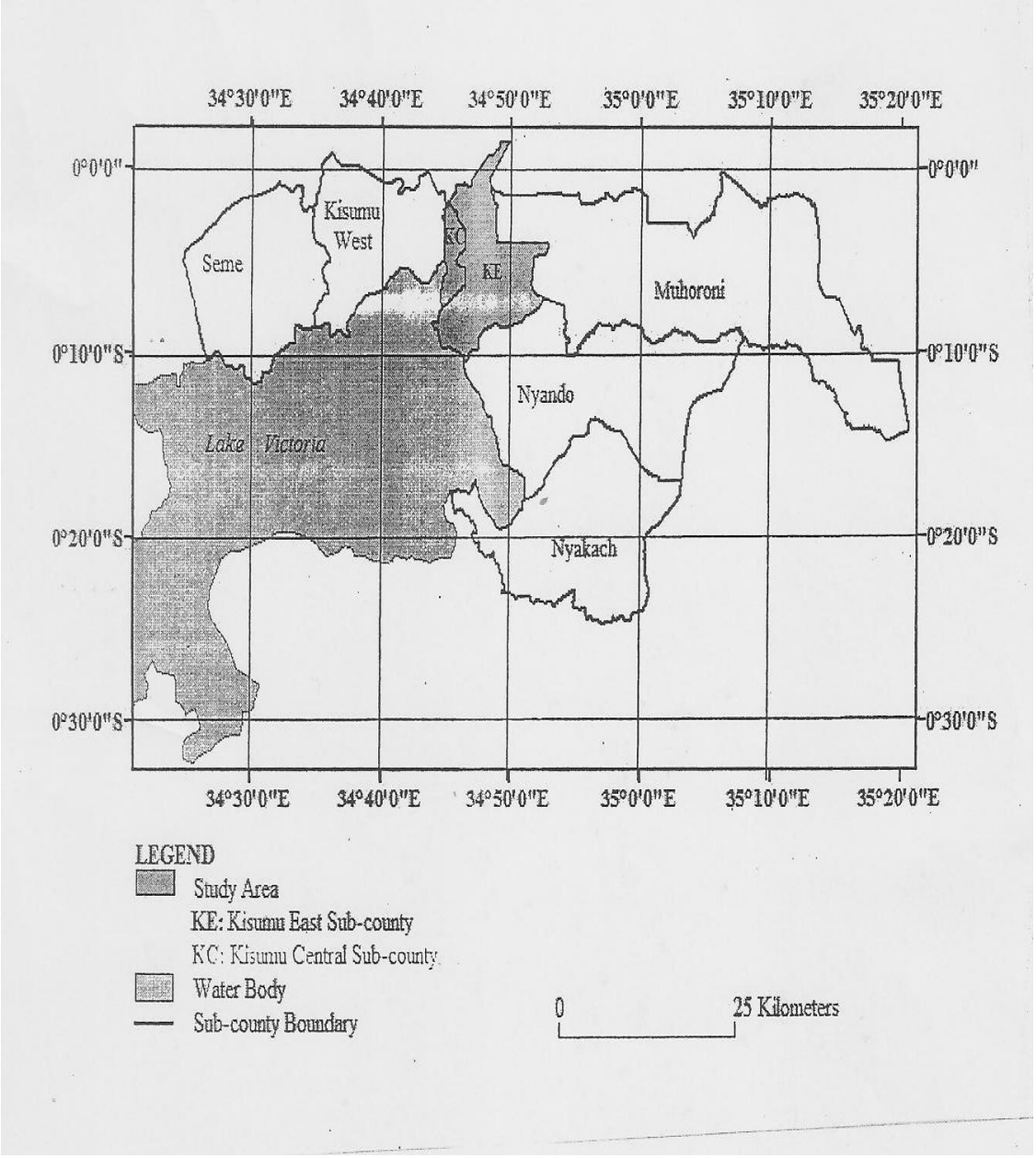
COLLEGE NAME: _____
INDEX NUMBER:_____

Tick as appropriate

Grade	Tick
Distinction (A)	**[ ]**
Credit (B)	**[ ]**
Pass (C)	**[ ]**
Referral (D)	**[ ]**
Fail (E)	**[ ]**
(CRNM) (E)	**[ ]**

Thank you.

Appendix VIII: Map of Study Area



Source: Kisumu County Integrated Development Plan 2023

Appendix IX: NACOSTI PERMIT AND APPROVAL

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **973769**

Date of Issue: **24/January/2022**

RESEARCH LICENSE

This is to Certify that Miss DOLPHINE ATIENO of Jaramogi Oginga Odinga University of Science and Technology, has been licensed to conduct research in Kisumu on the topic: PREPAREDNESS OF PRE-PRIMARY TEACHER EDUCATION PROGRAM AND ACADEMIC PERFORMANCE OF TEACHER TRAINEES IN KISUMU COUNTY for the period ending : 24/January/2023.

License No: **NACOSTI/P/22/15316**

973769

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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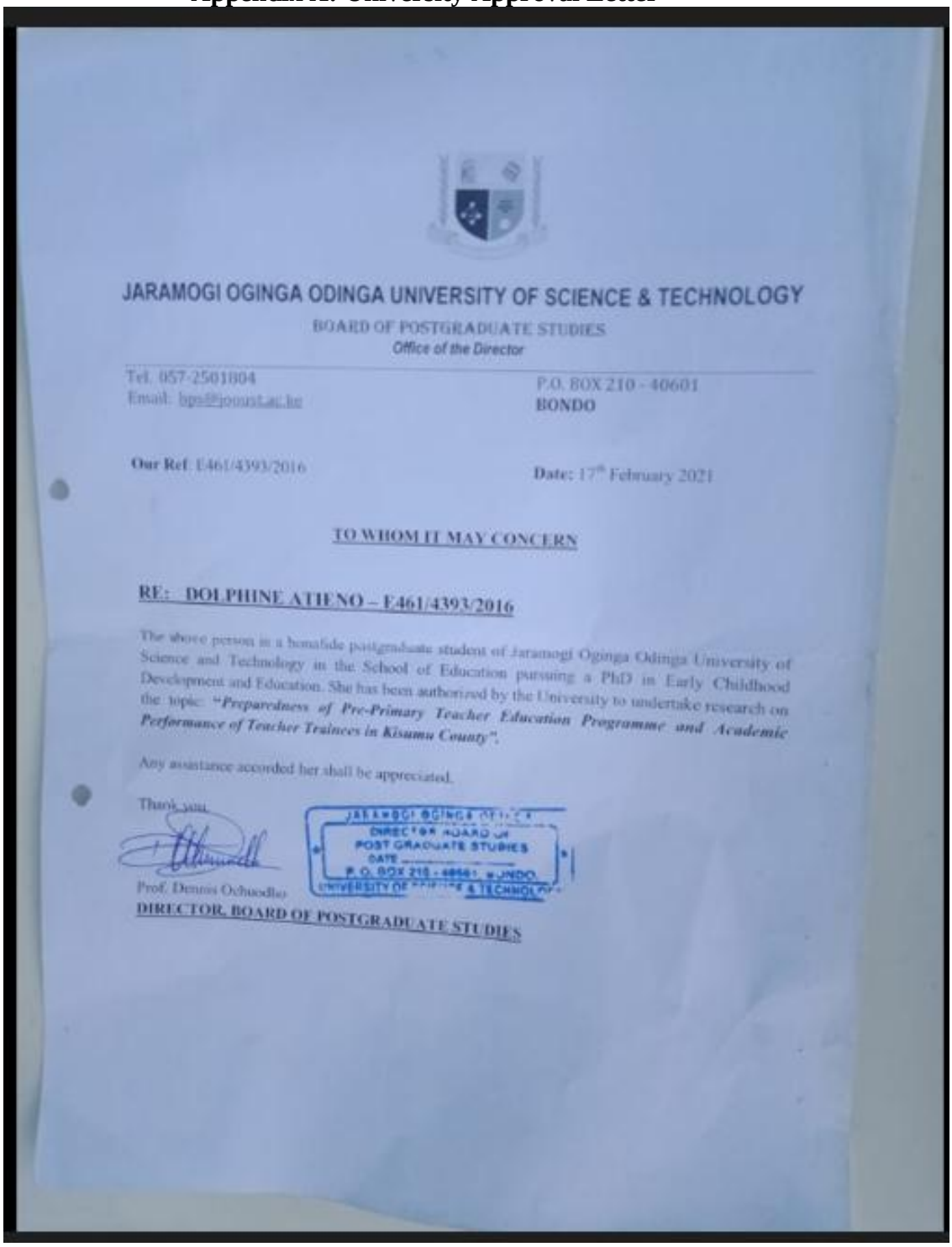
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix X: University Approval Letter



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

BOARD OF POSTGRADUATE STUDIES
Office of the Director

Tel. 057-2501804
Email: bps@joust.ac.ke

P.O. BOX 210 - 40601
BONDO

Our Ref: E461/4393/2016

Date: 17th February 2021

TO WHOM IT MAY CONCERN

RE: DOLPHINE ATIENO – E461/4393/2016

The above person is a bonafide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Education pursuing a PhD in Early Childhood Development and Education. She has been authorized by the University to undertake research on the topic: ***"Preparedness of Pre-Primary Teacher Education Programme and Academic Performance of Teacher Trainees in Kisumu County"***.

Any assistance accorded her shall be appreciated.

Thank you.

Prof. Dennis Ochuodho
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

Appendix XI: Ministry of Education Approval Letter

MINISTRY OF EDUCATION
STATE DEPARTMENT OF BASIC EDUCATION

Telegram: "*SCHOOLING*" Kisumu
Telephone: 0722518158
When replying please quote
cdekisumu@gmail.com

COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY
P.O.BOX 2738-40100
KISUMU
DATE: 4TH APRIL 2021

==========

REF: MOE/CDE/KC/ADM/11/VOL II/45

Dolphine Atieno Ondiek
Jaramogi Oginga Odinga University of Science and Technology
P.O.BOX 210 - 40601
BONDO

RE: RESEARCH AUTHORIZATION

Following your application to carry out research on ***preparedness of pre-primary teacher education program and academic performance of Trainer's Professionalism in Kisumu County***, Kenya. You are hereby authorised to undertake research in Kisumu County for the period ending 5th July 2021

Please note that as an applicant who has been licensed under the science, Technology and Innovation Act 2013 to conduct research in Kenya, you shall deposit a copy of the finale research report to County Director of education Office Kisumu, within one year of completion. Softcopy and hardcopy.

COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY
P.O.BOX 2738-40100, KISUMU
cdekisumu@gmail.com

Mr. Isaac Nyanga'u Atebe
FOR: COUNTY DIRECTOR OF EDUCATION
KISUMU
Cc

1. County Commissioner
   Kisumu County