MANAGEMENT OF INSTITUTION-BASED CO-CURRICULAR ACTIVITIES AND STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC PRIMARY TEACHERS TRAINING COLLEGES, KENYA

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DECLARATION

I declare that this thesis report is my original work and has not been presented elsewhere for a degree or any other award.

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I dedicate this thesis report to my family.

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ABSTRACT

Students' academic success is a function of several factors that affect one's ability to stay connected, motivated and thrive in college. Attempts to address the place of co-curricular activities in colleges and schools have failed to isolate or explore on the implications of institution-based co-curricular factors on student academic performance. The study sought to investigate the influence of institution-based co-curricular factors on students' academic performance. Specifically, the study focused on the types of co-curricular activities offered in colleges; the extent to which college co-curricular policies influence students' performance; determine the influence of co-curricular facilities and equipment on students' academic performance; assess the influence of motivational strategies used by college administration on students' academic performance; determine the predictive power of the institution based co-curricular factors on students' academic performance. The study adopted Astin's involvement theory, Zero-Sum theory and Threshold theories for its theoretical framework. The study employed correlational research design with a target population of 9,731 second year students in 25 public Primary Teachers Training Colleges that had presented students for Primary Teacher examinations for at least two years. Using multi-stage cluster random sampling techniques, systematic and purposive sampling methods, a sample of 11 colleges, 370 students, 11 principals and 11 games tutors were selected. Data was collected using three research instruments namely; a semi-structured questionnaire, focus group discussion guide, and an interview guide that were validated and adjustments made after the pilot study conducted in one public PTTC that was later excluded from the main study. Reliability was determined using the test re-test method with the reliability coefficient calculated using Pearson correlation coefficient that yielded a score of 0.83. The data was analysed with the aid of IBM Statistical Package for Social Sciences (SPSS) version 23.0. Chi square distribution, ANOVA and multiple regression techniques were used to test the significance levels of the stated hypothesis. Results showed that policy on number of co-curricular activities had strong negative influence on students' academic performance (ß = -.71, p =0.05); Policy on time spent on co-curricular activities had strong negative influence on academic performance (ß = -.18, p =0.05);Policy on types of co-curricular activities had a strong positive influence on academic performance (ß =.054, p =0.05); Availability, adequacy and condition of co-curricular facilities and equipment had positive influence on academic performance (ß =.12, p =0.05). Motivational strategies used by college administrators had a positive influence on students' academic performance (β = .24, $p<0.05$). Overall, two institution-based co-curricular factors highly predicted students' academic performance; time spent on co-curricular activities (ß = -.316, p = 0.05) and types of co-curricular activities (ß = .054, p = 0.05). It was concluded that co-curricular activities are an important facet in students' academic performance. The study recommended a balanced approach on the modalities of offering co-curricular activities to students for optimal benefits of the learner. College administrators need to consider mechanisms of enhancing the types of co-curricular activities offered in their institutions.

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LIST OF ABBREVIATIONS AND ACRONYMS

CATs	Continuous Assessment Tests
CEQ	Course Experience Questionnaire
CLASSE	Classroom Survey of Student Engagement
DEO	District Education Officer
GoK	Government of Kenya
KNEC	Kenya National Examinations Council
KNUT	Kenya National Union of Teachers
MOE	Ministry of Education
NACOSTI	National Council for Research and Technology
NSSE	National Survey of Student Engagement
PTTC	Primary Teachers Training Colleges
PTE	Primary Teachers Examinations
SASSE	South African Survey of Student Engagement
SPSS	Statistical Package for Social Sciences
TTC	Teacher Training College
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter presents background to the study, problem statement and purpose of the study. It also outlines objectives of the study, research questions, null hypothesis and significance of the study. The other sections covered in the chapter include limitations, delimitations and assumptions of the study. Finally, the chapter provides operational definition of terms and organization of the study.

1.1 Background to the Study

Students enter college at a critical transition period in their lives when responsibility shifts from parents to individuals. They have to balance academics, challenges in the new environment and forge new friendships. Memorable moments are created during college life; and it is a life lesson learning period. Memories and lessons are developed while participating in formal curricular as well as co-curricular activities (Haensly, Lupkowski, & Edlind, 1985). Research demonstrates that students success is greatly determined by what they do during their stay in college than who they are or what schools they attended (Astin, Korn & Green, 1987; Kinzie, Schu, Whitt et al, 2010). Co-curricular activities are, therefore, an important facet of education as a whole and participation in such activities provides students with opportunity for academic success (Singer, Hausenblas & Janelle, 2001). Indeed studies have shown that administrators of educational institutions are interested in finding out the relationship between academic performance and participation in co-curricular activities. This implies that to some extent, students' academic

performance is related with their participation in co-curricular activities (Stephens & Schaben, 2002).

Colleges are obliged to avail opportunities for students to engage in co-curricular activities (UNESCO, 2005). College administrators must therefore plan for different co-curricular activities throughout the year (Coven, 2015). They should introduce innovative and exciting co-curricular activities so that students experience optimal benefits (Haliimah, 2010). Consequently, principals are expected to play key roles that include directing, recording, evaluating, managing, making decisions, motivating, and coordinating students so that they acquire optimal benefits from co-curricular activities (Chalageri & Yarriswami, 2018).

Haliimah (2010), classified curriculum into two; core subjects taught in class and co-curricular activities. On the other hand, Haensly et al. (1985), orders curriculum into three levels such that curriculum being taught and the elective courses offered in a particular college take the first and second levels respectively while co-curricular activities occupy level three. Other scholars suggest that co-curricular activities make educational experiences whole. For example, Haensly et al. (1985), referred to co-curricular as the second half of education.

Co-curricular activities are generally carried on outside of the class and may or may not have a direct relationship with the core curriculum. Such activities include; games and sports, clubs and societies and other hobbies designed to help the learner adjust socially and physically (Acquah & Anti Partey, 2014). They are also regarded as academic or non-academic activities carried on under the guidance of the school but happen after class hours

since they do not form part of the formal curriculum. Some researchers differentiate co-curricular from extra-curricular activities. On one hand, co-curricular is more learning oriented and all students are required to attend.

The idea behind the activities is to develop strong character and personality in students and their minds in order to enhance academic performance Kisango (2016), On the other hand, co-curricular activities are an appendage to formal curricular and lean more to leisure than learning. Students do not earn academic grades or scores because of participating in co-curricular or extra-curricular activities and such participation is voluntary (Bartkus, Nemelka, Nemelka, Phil Gardner, 2012). Emmer (2010), opines that the terms extra-curricular, co-curricular, non-classroom activities are used interchangeably to refer to out-of-class activities; this is the meaning adopted for this study. The term co-curricular activities encompasses all non-formal curricular activities.

Most students, parents and guardians show little regard to co-curricular activities. Educational administrators, at times persuade parents to allow their children to participate in co-curricular activities. Most parents feel that the after-school activities divert children's attention from books and make them arrive late at home. Students also feel that all that matters in order to be successful in life is academic work (Shulruf , 2010). However, overtime students and their families have come to recognise that academic education alone is not adequate for one to succeed in the 21st century workplace .To be successful in life, college graduates require intellectual resilience, cross-cultural, scientific and technology literacy, ethics, and have a readiness for continuous, cross-disciplinary learning (American

Association of Colleges and Universities [AAC&U], 2007). Such qualities are inculcated through involvement in both formal curricular and co-curricular activities.

Much research on co-curricular activities is indicative of positive impacts on students. Greater impacts have been realised among students from marginalised ethnic communities, students with physical challenges, and at-risk students (Brown, 2000). Participation in co-curricular activities aids student who are at risk of dropping out of school by strengthening their student-college connection (Holloway, 1999). Research further shows that students who engage in co-curricular easily integrate in society, build college connections, and attain higher academic grades (Mahoney, Larson & Eccles, 2005; Astin, 2001; Brown, 2001; Holloway, 1999). Such students also easily engage with their teachers, non-teaching staff, and friends away from classrooms. In that process, they develop intelligent views, attitudes, values and aspirations. Additionally, they create personal identity and high level of independence (Pascarella & Terenzini, 2001).

Indeed college impact research suggests that the best way to enhance student success is to focus on what they do in class and how they spend after-class hours (Pascallera & Terenzini, 2005; Whitt, 2006). Through involvement in co-curricular activities, students learn skills in communication, professional development, and group dynamics. Klesse (2004), adds that co-curricular activities have potential of providing students with a wide range of opportunities to hone their skills necessary for strategizing themselves for future careers.) Adeyemo (2010), carried out a study in USA and found a positive correlation between involvement in co-curricular activities and learner performance. Marsh and Kleitman (2002), also concluded that co-curricular activities promote school identification

and commitment that in turn boosts academic performance. Similarly, Kariyana, Maphosa and Mapuranga (2012), in a study conducted in South Africa reported that educators felt that taking part in co-curricular activities enhanced students' academic achievement. A Kenyan study conducted by Anyango (2012), affirms these views. Anyango further maintains that co-curricular activities correlate positively among primary school pupils' academic attainments (ibid). Additionally, Nyabero and Ngeywo (2018), averred that students' academic performance was a function of participation in athletics, music and soccer among secondary school students in Uasin Gishu County. The current study however, sought to investigate whether or not participation and management of co-curricular activities had any influence on academic performance among students in public primary teachers training colleges in Kenya. This was significant because students graduating from these colleges were expected to facilitate learning and mentor the pupils.

However, Allensworth and Easton (2007), and King (2006), warn that students should take caution because spending too much time on co-curricular activities can make one lose focus on the core purpose of education; academic success for a more contented life and career. Some study findings have shown negative relationship between participation in co-curricular activities and academic performance (Melnick, Miller, Sabo, Barnes, & Farrell, 2010). Similar results were reported in Hong Kong by Leung, Ng and Chan (2011), who found negative effects between involvement in co-curricular activities and academic performance. Previous researchers being in cognizant with the fact that students normally draw more benefits by engaging in co-curricular activities, motivated the undertaking of the current study to investigate the possible influence of co-curricular activities on

academic performance of college students. Generally, researchers attribute the undesirable student attainments to little time left for assignments and a lot of time spent on leisure activities (Melnick et al. 2010).

Most college policies encourage students fairly share their time between academic and co-curricular activities. Cleveland, Powell, Saddler and Tyler (2011), and Klose (2008), opine that administrators should provide co-curricular activities that add value to the learning process. Pascarella and Terenzini (2005), recommended that administrators should ensure that the co-curricular activities they provide to students are educationally effective and worth students' time and effort in order to foster their learning and development.

Availability of different co-curricular activities is crucial for students' participation (Cohen, (2009). College policies may indicate the number of co-curricular activities to offer but they are encouraged to offer a variety of activities. As Chudgar, Chandra, Iyengar & Shanker (2015), found, children performed better especially in mathematics in schools that had more co-curricular activities. College policies may further state the number of co-curricular activities a student may participate in per term including the time the activities should take place. Some colleges discourage students from involving themselves in more than two co-curricular activities in a college term while others require a student to maintain a minimum academic standard in order to take part in co-curricular activities. However, research shows that students who participate in many co-curricular activities gain positive academic results. For instance, Storey (2010), found that students who participated in six out of fifteen co-curricular activities surveyed had better educational learning outcomes.

Mostly, co-curricular activities take place before or after school (Vermaas, Willigenburg-van Dijl, Houdt, 2009).

Administrators are required to provide adequate and appropriate co-curricular services, facilities and equipment to ensure students participate in high impact co-curricular activities. Panigrahi & Geleta (2012), found that lack of specialised expert, inadequate physical facilities, equipments and supplies; and inadequate supervision practices affected implementation of co-curricular activities. Panigrahi & Geleta (2012), singled out insufficient financial support as one of the most important reasons that affected the ability of students to engage in co-curricular. Muthike, Mwaruvie & Mbugua (2017), found that increase in support by school administration enhance learner participation in co-curricular activities.

The Kenyan Government aspires to transform the country into an industrialized middle-income economy via Vision 2030. This vision will be realised through availing high standard of life to all Kenyan nationals by 2030. One of the strategies towards this goal is to facilitate Kenyans to acquire a quality education that will make them competitive globally. To be able to attain quality education, there is need to develop well-rounded students by integrating co-curricular activities in teachers training curricular. In addition, the new competency-based curriculum (CBC) has considered talent development as an important component that will enable learners to realise holistic education by developing skills, values and knowledge that will make them relevant in the global job market.

Student teachers in TTCs are an important target group because upon graduation, they interact with young pupils at primary school level who are in the formative stages of intellectual and character development. Teachers are the most powerful adults in the world of children besides the family members with whom young people interact. As sources of information, their academic performance is a concern to the society. Teachers need to be seen as credible by the society and the pupils. Otherwise, if their performance in college is low, the society will doubt their ability to effectively deliver the school curriculum. Table 1.1 below illustrates Primary Teacher Education (PTE) examination results in Kenya for the last five years.

Table 1.1
Students National Performance in PTE Examinations – 2014 to 2018

Scoring		Year				
		2014	**2015**	**2016**	**2017**	**2018**
Distinction	**F**	45	12	1	5	16
	%	0.49	0.15	0.01	0.71	0.16
Credit	**F**	7,682	7,327	6,333	5,355	7,306
	%	84.71	89.0	86.54	75.69	71.86
Pass	**F**	1,191	742	759	1,288	2,485
	%	13.13	9.01	10.37	18.20	24.44
Fail	**F**	37	19	49	156	97
	%	0.41	0.23	0.67	2.20	0.95
Absent	**F**	113	128	165	256	256
	%	1.25	1.60	2.25	3.61	2.52
Cancelled	**F**	1	5	11	15	7
	%	0.01	0.06	0.15	0.21	0.7
TOTAL	**F**	**9,069**	**8,233**	**7,318**	**7,075**	**10,167**
	%	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Kenya National Examinations Council Reports (2019)

While students are expected to demonstrate excellent and progressive academic performance, the situation in public PTTCs is different according to data in Table 1.1 above. The ranking from Distinction (1) to Fail (4) shows that in the past five years, students scoring high quality grades (distinction) have been less than 1 percent for all the years. Of concern is that in 2016, only 1 (0.01%) out of 7,318 (100.0%) candidates scored a Distinction; and the situation has not improved in subsequent years. Additionally, there has been a steady decline on percentage of students scoring the Credit grade form 2015 (89.0%) to 2018 (71.86%) and at the same time, a steady increase in students acquiring a mere Pass from 13.13% in 2014 to 24.44% in 2018. This shows that year after year, performance of the students in public PTTCs has been pathetic and this raises a lot of concern.

While evidence exists in other countries that co-curricular activities influence academic performance, there are limited studies that quantify such association in Kenyan educational institutions, more so among college students. Further, research available in Kenya is not conclusive on the contribution of co-curricular activities on academic success (Okero, 2014). Given the increased emphasis on student excellence and the wide variety of co-curricular activities available in colleges, understanding the significance of co-curricular activities on academic performance and its influencers is a good area of research. Accordingly, this study endeavoured to investigate the institution-based co-curricular factors that influence students' academic performance in PTTCs in Kenya.

1.2 Problem Statement

The performance of students in academics is determined by several factors. These factors can either positively or negatively affect a student's ability to stay be connected, motivated and successful in a college. The education system endeavours to develop desirable changes in students through formal curricular and co-curricular activities. These educational activities are expected to present to learners alternative opportunities and pathways in life. College administrators face the challenge of dwindling funds against increased emphasis on student academic performance. This reality makes them hesitant to allocate funds and personnel to co-curricular activities. However, if they are knowledgeable about the benefits of involvement in co-curricular activities they would be less hesitant. Such information is especially crucial in the context where allocations are competing for a strained budget. Research based information on how co-curricular facilities and equipment contribute to students' academic success will help to secure funding and justify their procurement. Additionally, understanding how availability and utilisation of quality and adequate facilities and equipment contribute to rich co-curricular experiences and eventual student academic outcomes can demonstrate the value of students spending time and efforts on co-curricular activities.

The underachievement of teacher trainees (Table 1.1) is a major discourse among education stakeholders in Kenya. The progressive decline in performance in PTTCs persists yet the government has provided adequate material and human resources to colleges. Numerous studies have demonstrated that students' participation in co-curricular activities correlates positively with improvement in academic performance. Some problems encountered by

PTTCs arise from inability of the colleges to innovate or implement programmes that can mitigate poor performance and ensure academic success in the institutions. Co-curricular programmes provide learners with a safe and conducive learning environment; stimulate interaction; comprise enriching activities and allow networking with caring adults, who are the most significant educational innovators. Thus, co-curricular activities can potentially improve students' academic success.

Despite these facts, Kenya's education system still lays more emphasis on formal curricular aspects of education and neglects co-curricular activities. In an environment where grades are emphasised, co-curricular activities are scrutinized in terms of cost effectiveness. College administrators end up reducing or eliminating co-curricular programmes. Generally, co-curricular activities are considered secondary to the goal of academic achievement.

While some studies done in Kenya have attempted to address the place of co-curricular activities in colleges and schools, the researchers did not isolate or explore the implications of the management of institution-based co-curricular activities on students' academic performance at PTTCs. Owing to this gap, the researcher endeavoured to study the management of institution-based co-curricular activities that may have implications on students' academic performance at Public Primary Teacher Training Colleges in Kenya. Specifically, the objective of the current study was to highlight other determinants from the general education literature which may affect students' academic performance.

1.3 Purpose of the Study

The present study sought to explore the influence of management of institution-based co-curricular factors on students' academic performance in public primary teachers training colleges in Kenya.

1.4 Objectives of the Study

The objectives of this study were;

a) To establish the types of co-curricular activities college administration offer to students in public Primary Teacher Training Colleges in Kenya.
b) To determine the extent to which college co-curricular policies influence students' academic performance in public Primary Teachers Training Colleges in Kenya.
c) To determine the influence of co-curricular facilities and equipment on students' academic performance in public Primary Teachers Training Colleges in Kenya.
d) To assess the influence of motivational strategies used by college administration on students' academic performance in public Primary Teachers Training Colleges in Kenya.
e) To determine the predictive power of the institution-based co-curricular factors on students' academic performance in public Primary Teachers Training Colleges in Kenya.

1.5 Research Question

The researcher attempted to answer the following research question:

a. What institution-based co-curricular management factors influence students' academic performance in public Primary Teachers Training Colleges in Kenya?

1.6 Null Hypotheses

The following null hypotheses were tested in this study.

a) There is no significant influence of the types of co-curricular activities offered by a college on students' academic performance in Public Primary Teacher Training Colleges in Kenya.
b) There is no significant influence of co-curricular policies on students' academic performance in Public Primary Teacher Training Colleges in Kenya.
c) There is no significant influence of co-curricular facilities and equipment on students' academic performance in public Primary Teachers Training Colleges in Kenya.
d) There is no significant influence of motivational strategies used by college administrators on students' academic performance in public Primary Teachers Training Colleges in Kenya.
e) There is no significant influence of the predictive power of the institutional based co-curricular factors on students' academic performance in public Primary Teachers Training Colleges in Kenya.

1.7 Significance of the Study

The findings of this study may be significant to a number of people and organizations, including: education policy makers, college administrators, students, researchers, Kenya national examination council, teachers service commission among others. Since the focus of education is to develop an all-round student and to examine factors that facilitate such development; this study endeavoured to investigate the influence of the management of institution-based co-curricular activities on students' academic performance. The findings

of this study contribute to the understanding of students' academic performance, which may help in identifying students who are at risk of academic failure. The findings may also assist college administrators in making better policies in implementing co-curricular activities in terms of time allocation, number of co-curricular activities a student may participate in per term and the number of hours students may get involved in co-curricular activities.

This study may also help policy makers at national level to think of setting up mentor co-curricular activities programmes to bring all students on board including those with physical challenges and other disabilities. The Ministry of education may also see the need to fund co-curricular at this level, as a motivational strategy of encouraging students who participate in co-curricular activities.

The current study provided information that might help students decide on how to use their time outside the classroom because of the likely accrued academic benefits. Students may make better decisions on types of co-curricular activities to engage in, the number and duration. The information may assist them to make wise decisions when striking a balance between time to devote on co-curricular and core curricular activities.

Researchers and academicians may find this study useful because of its contribution to the concept of experiential learning. This is because the study focuses on students' involvement in co-curricular activities and associated academic outcomes. This focus is consistent with the literature on experiential learning and education. The field of experiential learning places strong importance on experiences as a means of student learning and development (Chickering, 2007). Therefore, the present study adds to the

literature on co-curricular experiences, which is a form of experiential learning. Finally, the present study is given essence by the fact that it is anchored on the philosophy of student success as well as the concepts of learning outcomes and availability of experiential learning opportunities for students. All these are current and growing issues of importance.

1.8 Limitations of the Study

The researcher encountered a number of challenges during the conduct of the study which he tried to mitigate. One of the study limitations concerned the topic. There is paucity of data on co-curricular activities in relation to college students' academic performance in Kenya. Specifically, available literature has not provided Kenyan studies that has followed this line concerning college students. To ensure that scarcity of data did not compromise interpretation of results, related literature from other countries and regions was utilized. This study involved self-reported CAT performance scores, the accuracy of which could be doubted. In order to overcome this limitation, the respondents were asked to be honest as much as possible and were assured that the results were not to portray them as individuals or colleges.

1.9 Delimitations of the Study

Delimitation of the study refers to instances where the researchers impose boundaries to themselves in relation to purpose and scope of their studies (Lunenburg and Irby, 2008). In the present study, the researcher delimited the study in a number of ways. First, due to the large number of potential participants in the study, the target population involved only second year students in public teacher training colleges, the games masters and college principals. The second years had taken CAT I and CAT II (Mock Examinations) by second

term that were used to measure academic performance in this study. The college principals and games masters participated in the study for they possessed critical information on the study title.

Second, the study focused on selected factors as variables that are generally used to determine participation in co-curricular activities, that is, college policies, facilities and equipment, and motivational strategies. The study confined itself to observing how these selected factors influenced academic achievement and no reverse influence was measured. Finally, the study was conducted in all the PTTCs in the Republic of Kenya to capture the environmental contexts that play an important role in mediating involvement decisions and choice of co-curricular activities.

1.10 Assumptions of the Study

The present study was conducted under the following assumptions;

i. That all public teachers training colleges had implemented co-curricular activities according to Ministry of Education guidelines.
ii. That recall bias or deliberate omission of sensitive information related to co-curricular activities did not affect results of the study.
iii. That the respondents who completed instruments in this study understood each item before answering it.
iv. That the co-curricular activities studied would continue to be important to the students in colleges.

1.11 Operational definition of terms

While there are many conceptualizations of the following terms, the definitions provided best present the meaning of the terms as used in the context of this study.

Academic performance refers to a student's score in Continuous Assessment Test. The CATs that are administered by the colleges and they constitute 30% of the final Kenya National Examinations grade. The mean score in the college designed CAT and the Mock examinations was used to measure students' academic performance.

Co-curricular activities refer to those activities that do not entail formal academic classwork and included sports, athletics, societies, clubs and movements to bring social and physical adjustments in the student. These activities are also referred to extracurricular activities.

Co-curricular implementation refers to carrying out co-curricular activities after pre-planning, and resource allocation.

Games master is a college tutor who is in charge of co-curricular activities in a college and provides support to students' clubs, movements, or societies.

Involvement refers to spending time and efforts on selected activities of college programme.

Institution based co-curricular factors the activities here included sports, athletics, societies, clubs and movements

Core curricular activities refers to a set of courses that are considered basic and essential to the public primary teachers training colleges in Kenya.

1.12 Organization of the Study

The study is organized into five chapters. The initial chapter of the thesis, introduction, outlines the background to the study, statement of the problem, study purpose, objectives of the study, research question, hypotheses and significance of the study. In addition, the chapter includes limitations and delimitations of the study, basic assumptions of the study and defines significant concepts and terms as used in the study. Chapter two presents a detailed thematic presentation of empirical overview of relevant literature on the study variables, summary of reviewed literature and the study gap, theoretical framework and the conceptual frameworks of the study.

Chapter three is descriptive. It presents the methodology of the study. It comprises of research design, study population, sample size and sampling procedures. Additionally, research instruments are described in details, their validity, reliability and administration procedures. The chapter ends by presenting data analyses techniques employed in the study and the ethical issues that were observed throughout the study. Chapter four focused on data analysis, interpretation and discussion. Finally, chapter five presents summary of the study, conclusions made, recommendations to the study and suggestions for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The literature presented in this chapter provides a context for exploring the influence of institutional related co-curricular factors and academic performance among students in public Primary Teachers Training Colleges. The literature is thematically organised under various sub-themes. They include the concept of co-curricular activities and related concepts, policy on co-curricular activities in Kenya; and the concept of involvement in co-curricular activities and academic performance. In addition, the chapter reviews literature on college policies and student performance; influence of facilities and equipment on students' academic performance; motivation strategies used by college administrators as well as students' academic performance. Finally, the last three sections present theoretical, conceptual frameworks and study gap respectively.

2.2 Concepts of Co-curricular Activities and Extra-curricular activities

The term curriculum refers to the aggregate experiences a learner undergoes under the auspices of a school including the course of study. Semantic delineation of the prefix of extra-curricular, 'extra'-, means outside or beyond. In the same vein, the prefix 'co-' in co-curricular means together, jointly, or partnership. Co-curricular activities are, therefore, integral parts of the education system. Students of all ages and at all levels of education participate in these activities. Co-curricular activities are those that are consistent with educational objectives but are not offered for credit toward students' graduation or grade achievement.

Co-curricular activities are defined as the educational activities that happen outside the regular school curriculum. They include sports, games, clubs, movements, athletics, music and drama festivals, and symposiums that students are involved in. The activities may occur inside or outside the educational institution, however, they all have common features including regular meetings, emphasis on skill development, goal orientation, positive interaction with peers, supervision and leadership of a competent adult (Darling, Caldwell & Smith, 2005). The term involvement is viewed as actual participation in actions and events outside the formal curriculum. Such involvement contributes to realisation of institution's educational goals.

A close look at the meaning of the prefix "extra" brings out the meaning of something "more than or beyond what is usual, normal, expected, or necessary" (http://www.thefreedictionary.com/extra). Hence, extracurricular is defined as "Being outside the regular curriculum of a school or college" (http://www.thefreedictionary.com/extracurricular). This definition is however quite basic since it provides a general meaning. As such, it allowing nearly any activity that falls outside the regular curriculum, for instance reading a magazine, to be considered as extra curriculum.

Shulruf (2010), opines that extra-curricular activities are those that take place outside the main curriculum. A definition by Bartkus et al. (2012) alludes to a similar opinion: that co-curricular activities are the academic or non-academic activities that are conducted under the auspices of the training or educational institution but occur outside of ordinary classroom time and are not part of the curriculum. Bartkus et al. (2012) further explains

that students are not awarded a grade or academic credit when they engage in extra-curricular activities; indeed, participation is voluntary on the side of the student (ibid).

Authors hold different opinions on regarding the concept extra-curricular activity. Some feel that extra-curricular activities may happen in-school or out-of-school. Examples of activities that may take place outside educational institutions include pro-social activities, dances, sports, and hiking, among others. In-school activities on the other hand may include journaling, intramurals and academic clubs. Students who participate in extra-curricular activities should also consider the levels of participation. This is because research has indicated that both the type of extra-curricular activity and level of involvement impacts on individual's development (Eccles, 2006).

There seems to be consensus that any co-curricular activity occurs outside the confines of a classroom. These activities provide learners opportunity to discover, display and perfect specific non-academic skills and abilities. In this regard, co-curricular activities actually enrich the curricular activities as well as cultivate in students the ability to live and work together. It is also notable that these activities represent the authentic and hands-on experiences that students gain largely on their own (Arora, n.d).

2.3 Government Policy on Co-curricular Activities in Kenya

The educational curriculum in Kenya comprise of three dimensions; the formal non-formal and informal (Shiundu & Omulando, 1992). The formal dimension entails subjects like English, Kiswahili, Mathematics, Geography that are contained in the school syllabus. The non-formal dimension consists of co-curricular activities such as sports, athletics, games, clubs, societies, movements, excursions, symposiums, contests. Although these co-

curricular activities are not written in the syllabus, they are, nevertheless, well organised and are included in schools' timetables.

The co-curricular activities take students time and contribute significantly to attainment of educational objectives. Shindu and Omulando (1992), defined the informal dimension of the curriculum as the implicit, unplanned and spontaneous experiences at school that influence learners' behaviour and are a product of the entire school environment. This dimension is also referred to as the 'hidden' curriculum'. It too is significant in achievement of educational objectives. Researchers use the terms co-curricular activities, extra-curricular activities and non-classroom activities interchangeably in literature to mean the non-formal experiences that happen outside the formal curriculum.

Co-curricular activities programmes are an important part of the education system in Kenya. All educational institutions are obliged to initiate programmes that identify, nature and develop the affective and psychomotor domains of the learners by providing co-curricular opportunities to all learners irrespective of their abilities. The actual choice of the co-curricular activities depends on availability of facilities, the actual interest of the students and the staff, and the time available. The School Management Guide states that co-curricular activities are featured in annual budgets for schools and colleges to facilitate their implementation.

The Kenya education curriculum has undergone several reviews since independence. The 8-4-4 system of education (eight years of primary school cycle, four years of secondary school cycle and at least four years of university cycle that is currently being phased out, was introduced in 1985 following recommendations of the 'Presidential Working Party on

the Establishment of the Second University in Kenya' (GoK, 1981) also referred to as Mackay Report. Several other Task Forces in 1992, 1995, 2002 2009 and 2012 have been conducted to address overloads and overlaps in the curriculum. The implementation of Competency Based Curriculum gives emphasis to co-curricular activities as it positively contributes to the social development of students (Wanjohi, 2016)

All the reviews emphasize the importance of co-curricular activities. Specifically, in the Mackay Report, two educational objectives that relate to co-curricular activities state that education should assist learners in the acquisition of knowledge, skills and attitudes to develop the self and Kenyan society. The other objective states that education should support promotion of care for environment and health. The objectives are meant to make learning fun, nature individual's talents and mould learners to self-disciplined individuals who have respect for work and can manage time efficiently.

These objectives are further articulated in the Kenya Institute of Education (KIE) strategic plan 2006 – 2010 (KIE, 2010). This plan stated that when psychological and social needs of children and youth are not addressed adequately, they become maladjusted. Maladjusted children and youth may engage in such vices as alcohol, drug and substance abuse, irresponsible sex that may lead to teenage pregnancies, abortions and worse still, HIV and AIDS, criminal activities like burning of schools, violence and general indiscipline. To reduce incidences of these vices, co-curricular activities are essential. Indeed, in the KIE strategic plan, schools are urged to emphasise the non-formal and informal dimensions of the curriculum.

Additionally, the Handbook for Inspection of Educational Institutions 2000 (Ministry of Education and Technology, 2000), in Schedule 5 Section 2.5 emphasise the need for schools to develop a whole child by encouraging involvement in co-curricular activities. The National Education Sector Plan 2013 -2018 [NESP] (MoE, 2015), further enlists the co-curricular activities that best expose students' abilities as; games and sports, martial arts, drama and music festivals, science and engineering fares, essay competitions, athletics, art, home science, clubs, movements and societies. Since co-curricular activities are programmed in the school timetable, they are compulsory to all learners. All learners participate in co-curricular activities through Physical Education that is a mandatory subject in primary schools, secondary schools and teacher training colleges. Despite the ministerial co-curricular policies, the 8-4-4 system of education has been criticized for discriminating against co-curricular dimension of the school curriculum (Aduda, 2003).

Such criticisms like those of Aduda (2003), have made the Kenyan government to revise the heavily examination oriented 8-4-4 system and come up with a more holistic curriculum. In the revised 2-6-6-3 education system that the government is currently implementing at pre-school and primary school levels, the government has committed to provision of co-curricular activities. In the Basic Education Curriculum Framework (BECF), the government proposes three pathways in education; Arts and Sports Science, Social Sciences and Science, Technical, Engineering and Mathematics (STEM) to facilitate early identification, nurturing and development of full potential in learners (MoE, 2015). In the Arts and Sports pathway, there are three tracks for learners to chose from; Performing Arts, Visual Arts and Sports according to their talents. It is hoped that the tracks will

provide the learner with opportunities for self-realization, expression, individual development and fulfillment (MoE, 2015). This track hosts the co-curricular activities.

2.4 Benefits of Co-curricular Activities in performance prediction

The benefits of co-curricular activities are widely acclaimed in education literature. Learners acquire both academic and developmental benefits from participating in co-curricular (Feldman & Matjasko, 2012; Mahoney et al., 2005; Marsh & Kleitman, 2002; Shulruf, 2010). Gilman (2004), in his work stated that structured extra-curricular activities are a strategy that schools use to build in students' resilience, support desirable social-behaviour, avail opportunities for involvement in school-related activities, and enhance academic performance. In addition, structured co-curricular activities assist in creating a sense of belonging in and with the school. A similar opinion was advanced by (Aduda 2003,). Mahoney et al. (2005), found that during adolescence, pupils who got involved in structured extra-curricular activities had opportunities for social, emotional, and civic development (ibid). Moreover, Larson, Hansen, and Moneta (2006), observe that school-related co-curriculum activities such as sports for leisure enabled students to mould aspects of character such as initiative, emotional growth, setting a vision, resilience, problem solving and efficient time management among others.

In another study, Ludden (2011), stated that adolescents who took part in in-school and community-based civic activities were found to be more religious, were more academically engaged, and possessed better perceptions towards parents and peers than youth who were not involved in such activities. Additionally, findings reported by Fredricks & Eccles (2012), stated that although co-curricular benefits differed by type of activity and context,

participation in organized activities was nevertheless correlated with higher grades, school engagement, high self-esteem, resilience, and pro-social peers. The study by Kariyana, Maposa and Mapuranga, (2012), revealed that educators supported the idea of learners' involvement in co-curricular activities. Further, Ludden (2011) established that students' academic engagement was associated with their feeling of belonging to school while guidance from parents and teachers indirectly affected performance of the students.

Theory and research conducted on co-curricular has shown that constructive youth development results from involvement in co-curricular activities. Participation avails opportunities for students to create social ties and communication links. With this regard, engagement in organized co-curricular activities leads to strong character development. This is due to support and opportunities presented in schools unlike when young adults engage in out-of-school extra-curricular activities. Learners who engage in these in-college structured activities tend to respect diversity more, are more disciplined and give more to charity either in material or in kind (Wilson, 2009).

Bloomfield & Barber (2011), assert that student participation in extracurricular activities is an important aspect of the education experience. Evidence from research suggests that participation in extra-curricular activities provide a useful base for developing competence and success in future career in business. For instance, a survey by Bloomfield & Barber (2011), among CEOs from large U.S. industrial corporations revealed that these CEO involvement themselves in extra-curricular activities during their college years much more compared with other students. Similarly, Rubin, Bloomfield, et al. (2011), found that business students who participated in extra-curricular displayed better interpersonal

competency skills. Likewise, Vinoski, Graybill & Roach (2016), surveyed recruiters and found that business student participation in co-curricular was viewed as an effective way to instill leadership and interpersonal skills. Finally, Aguado et al. (2015), found that accounting student participation in co-curricular was associated with the number of initial interviews obtained by graduating seniors.

2.5 Student Involvement in Co-curricular Activities and Academic Performance

Students can choose different ways in which they can spend their free time. Consequently, such choices could have a positive or negative effect on their studies more so depending on which activities they choose. Most students decide to engage in co-curricular activities during their free time. In line with this, many studies have explored the relationship between student involvement in co-curricular activities and academic performance. A study by Marsh & Kleitman (2002) for example, avers that in the beginning, co-curricular activities were regarded as recreational activities and were discouraged in educational institutions. However, of late, educationists and administrators of educational institutions have realised that co-curricular activities have positive influence on skill enhancement and academic performance of students (Marsh & Kleitman, 2002).

Performance is normally defined as "the outcomes that indicate the extent to which a learner has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university" (Ford, Lumsden & Lulgjuarj, 2009). Performance refers to one's attainment of educational objectives corresponding to a particular level. However, according to Ford, et al. (2009), performance is the outcome of education; to the extent which students have achieved their educational goals.

Performance is focused on attitude, knowledge, and skills acquisition. Elias & Drea (2013), opines that performance is characterised by subject mastery.

According to Elias et al. (2013), students' performance refers to knowledge acquisition which includes getting facts, understanding concepts and applying them. Knowledge acquisition is measured by the end of term or end of year final examinations. Therefore, performance can be viewed as scores, cumulative grade point average (GPA) as well as test grades. As Elias *et al* (2013), pointed out, knowledge acquisition is expressed as academic performance focusing on tests and final examinations results in percentage form or learning participation. Attitude is the affective domain which is one of the three domains in Bloom's taxonomy, with the other two being the cognitive and psychomotor.

According to Buckley, Doyle & Doyle (2016), attitude falls under the affective domain and it refers to the manner in which human beings react to situations and things emotionally. These reactions may include feelings elicited, values attached, appreciation, enthusiasms and motivations. According to Buckley et al. (2016), attitude is classified into five categories. The first one is receiving and it refers to awareness, willingness to hear and selected attention. Responding is the second category and it refers to the learner's attention to stimuli and his or her motivation to learn. Willingness to respond and feeling of satisfaction fall under responding category. Thirdly is valuing, which refers to feeling of worth and preference that a person attaches to a particular object, phenomena or behaviour. The fourth category is termed Organization. This category comprises a learners' internalization of values and beliefs; the conceptualization of values and the organization of value system. As values or beliefs become internalized, the learner organizes them

according to priority. The last category is characterization and it refers to working without supervision while at the same time cooperating during group activities thus displaying teamwork (Bloomfield, 2011).

Wiggins (2016), states that performance is conceptualized as skills acquisition, knowledge acquisition (cumulative grade point average) and attitude. In this study, students' performance which is the dependent variable of the study, focused on knowledge acquisition characterized as students performance in CATs.

Student academic performance has been at the forefront of research for many years with researchers linking it to many variables including co-curricular activities. Indeed most of early research focused on relationship between co-curricular activities and grade point average (GPA). However, later research has expanded to include relationship of co-curricular activities to attendance, retention, dropout, discipline, and character development. For instance, Wanjohi (2016), found that over a 180 days school year, students who did not participants in athletics missed school twice as many days (12.97 days) per year than those who participated in athletes (6.62 days). A study by Steeves (2014), found that on average non-participants in co-curricular activities missed 19.4 days a year while co-curricular participants missed an average of 9.5 days.

Research provides evidence that there are many benefits for students who participate in co-curricular activities (Holloway, 1999); posits that involvement in co-curricular activities is advantageous to students' overall educational experience. Miller Sadker & Zittleman (2010), adds that co-curricular activities provide learners with 'a less formal setting' than the classroom that may provide opportunities for learners to develop personal and social

skills. The personal and social skills thus developed help in developing positive relationships with peers, teachers and school to become 'lifelong learners. When students bond with the school environment, the bonding influences their academic accomplishments; (Marsh,2002).

Similarly, Acquah et al. (2014), posits that involvement in co-curricular activities links students to college life, engages them to a level of comfort that maintain their interest, provides greater access to mentors, and allows students to identify their peers. Through involvement with the campus activities, students learn not only about the activity itself but also about communication skills, professional development issues, and group dynamics (Pascarella & Terenzini, 2001). Other benefits to co-curricular involvement include reducing dropout rates, building college connections, supporting at risk students, and promoting higher levels of academic achievement (Brown, 2018; Holloway, 1999).

Massive literature provides evidence that students' involvement in co-curricular activities improves academic work. A research conducted by Simon (2001), revealed that regardless of the region where a student came from, past academic achievements or home background factors, involvement in positive activities, positively improved their GPA. Another study by the Education Department of the United States of America revealed that students who were actively involved in co-curricular activities were more likely to have a Grade Point Average (GPA) of 3.0 or more compared to those who did not participate in co-curricular activities (Stephens & Schaben, 2002). Reeve (2008), conducted a study in Woodstock High School in Woodstock, Illinois. The school had more than 2,000 students with 20 percent minority and 25 percent eligible for free or reduced lunch. Reeve found that when

student involvement increased (at 400%), failure rates among ninth graders decreased in mathematics, science, social studies, English and Physical Education. Notably, mathematics failure rates decreased at 40 percent in one year, graduation rate increased to 88 percent, which was a record in the past ten years, and administrators reported improved discipline. Reeve (2008), concluded that although one could not categorically state that the improvements were solely caused by co-curricular itself, spending time on the activities nevertheless positively influenced academic grades. Reeves opines that participation in co-curricular activities enhances adult-peer relations, organisation, discipline and learner expectations; that are determinants of academic performance (Tanner & Tanner, 2007).

A similar study conducted in India examined which school resources beyond infrastructure were important to learning. The findings revealed that in schools that had more co-curricular activities, children performed better, especially in mathematics (Chudgar, Chandra, Iyengar & Shanker, 2015). Corbett (2007), also found that involvement in co-curricular activities had positive effects in students' performance in mathematics and reading among students in grades 8, 10 and 11 at Olathe District School in Olathe Kansas. Several other studies demonstrate that students who participate in co-curricular activities outperform those who do not. Chudgar et al. (2015), found that the GPA of athletes was 2.67 compared to 2.12 of the non-athletes. McCarthy (2000) reported an average GPA of 3.06 for co-curricular participants against an average GPA of 2.43 of non-participants.

Early works also demonstrate importance of co-curricular activities. Lunnenburg (2010), asserted that the quality of college life determined whether the undergraduates will achieve effective experience. He adds that such experience is also directly linked to the time

students spend on campus, and the quality of involvement in activities. Similarly, Buckley et al. (2016), posit the both formal and personal development outcomes are indicators of a quality educational experience for college students. In this regard, college administrators must establish ways of making the setting of their institutions more relevant to their students in order to ensure that the students succeed.

According to Moore and Mendez (2014), the single most common trait among students who, after college, considered their college time a success was involvement in co-curricular activities while in college. Students can be encouraged to maintain high grades to continue participating in the desired co-curricular activities. Student involvement in co-curricular activities may be the vehicle to provide the necessary motivation for students to achieve higher academic success. Klesse (2004), argues that college "activities provide students with a plethora of opportunities to learn and refine the skills necessary to positively affect students' current academic careers and become successful citizens after graduation". Co-curricular activities can support classroom–based learning while at the same time provide students with opportunities for college involvement and personal development outside of the classroom. For some students, college education may be the end of any other formal learning. Therefore, involvement in co-curricular activities in college can help in preparing students for future personal, professional and career success.

Students in colleges can develop by engaging in in-class learning experiences especially those that allow project work, oral presentations and facilitate personal reflection. Indeed, some college administration may perceive co-curricular activities as not necessary because they tend to focus more on social issues rather than academics. However, students usually

yearn for out-of-class activities that add additional growth and opportunities. Colleges have departments dedicated to facilitation of out-of-class activities that are headed usually by a professional. The professionals can observe, understand and influence patterns of students' change in behaviour, capabilities, and pre-occupations (Arnold & King, 1997).

Moore et al. (2014), argue that issues like graduation rates and students' academic outcomes are not just related to classroom activities but also to quality of student life and student satisfaction with the college, which are aligned with co-curricular activities in the institutions (Feldman & Matjasko, 2005; Pascarella & Terenzini, 2001). Storey (2010), found that students who participated in 6 out of the 15 co-curricular activities surveyed were statistically significant to the institutional education learning outcomes. The co-curricular activities examined were internship, multicultural, professional/career, service and awareness, creative arts and leadership. Although extensive studies have been conducted to measure the benefits of involvement in co-curricular activities on educational outcomes, little research has been done in Kenya thus justifying the need for this study.

2.6 Students' Socio-demographic Characteristics and Participation in Co-curricular Activities

According to Aud, et al. (2012), sports were the most popular type of extra-curriculum activities among college students. Their study established that 44% of college students said that they participated in a particular type of sport. This compared to 21% of those who participated in music activities such as band, orchestra or choir; 21% in academia related clubs; 12% in hobby based activities like chess and photography and 16% in vocational clubs such as DECA, Future Farmers of America and Skills USA. The study concluded

that extracurricular activities were positively correlated with a number of positive educational outcomes that included higher grades and test scores, lower school dropout, and higher educational success.

Similarly, other studies have established a positive association between sports activities and academic performance in the US. For instance, Klesse (2004), proposes that participation in sports enables students to develop their social skills. These skills able them to develop social bonds with their peers, parents and the school. Remarkably, these are the factors, which produce positive impact on their performance in their studies.

According to Peterson and Miller, (2004) "Longitudinal studies on school sports have suggested that participation in sports raises students' grades and test scores". Globally, research has shown although involvement in sports activities does not guarantee good marks in the examination, students who engage in sports and other extra-curricular are generally considered good. In this regard, recent studies have demonstrated that the said good students are favoured during selection and recruitment drives (Miller et al., 2004).

The college student population today is more diverse than it was several decades ago. In USA, Pascarella &Terenzini (2005), argue that research can no longer be based on the assumption that college students are a homogeneous group comprising of White students from middle- or lower-class homes of ages 18 to 22, attending four years full time, living on campus and unemployed. The changing student population presents new challenges to faculty and staff since students respond differently to their environments; negating the notion of one-size-fits–all approach. This calls for new conversations to address the increasing needs of academic success of the diverse student populations. The college

population in Kenya today is equally diverse. With the introduction of Self Sponsored Programmes (SSP), the college population has changed. Most students live off campus. The population comprise of older students of between 18 - 32 years, some married and others employed (Aguado, Laguador & Deligero, 2015).

Research on participation in co-curricular activities shows that several background factors influence students' decisions on whether to participate or not, choice of co-curricular activities and extent of involvement. To understand why some students fail to take part in co-curricular activities, an analysis of socio demographic characteristics is important. Socio demographic characteristics are the quantifiable statistics of a given population and are used to identify and characterize that population at a specific point in time. Commonly examined demographics include gender, age, ethnicity, marital status, educational levels, disabilities, mobility, area of residence/location, employment status, and religion.

In one study, Cohen, (2007), found that students from disadvantaged and low-income neighborhoods rarely participated in co-curricular activities. Other factors may have accounted for this; insecurity in the neighbourhood where they lived, transport problems, taking care of younger siblings, and working that made them not to stay in school after class hours. Cohen et al.(2009), further established that students whose parents had college degrees and higher incomes had greater involvement in co-curricular activities. This was probably because such students had access to sporting equipment and could meet the related costs and their parents knew the importance of sports. These finding are collaborated by Moore et al. (2014), who all opined that students of lower economic status

failed to participate in co-curricular activities due to lack of financial support and transport issues.

In another study, Brown (2000), found different levels of involvement in co-curricular activities based on ethnicity. The European-American students participated more than Hispanic-Americans. Other factors that influenced involvement included family issues like single parenthood where children of such parents with low income were found to participate in fewer co-curricular activities (Harrison & Narayan, 2003).

Gender determines how individuals and society perceive what it means to be male or female. This may influence one's roles, attitudes, behaviours and relationships. These aspects influence one's personal identity that may have a direct bearing in co-curricular decision-making. Research in US indicates that females are more likely to participate in more extra-curricular activities than males (Feldman & Matjasko, 2005). He reported higher percentages of involvement among females than males. Similarly, Miller et al. (2010), reported that in grade 9 through 12, girls participated in more co-curricular activities than boys; and for both gender involvement was low for at-risk learners such as the mentally or physically challenged learners. Girls also showed more consistent involvement than boys did. In another study conducted in Pennsylvania by Vermaas et al. (2009), among grade 9 through 12 students, girls participated in more co-curricular activities than boys. On average, students participated in three co-curricular activities.

Attraction to co-curricular activities is also dependent on gender. Vermaas et al. (2009), found that girls were more attracted to Arts and Craft, dance, community and religion activities while boys were more attracted to games and team sports. Research across

nations show that male students are attracted more to athletics than the female students (Asaba, 2015; Feldman & Matjasko, 2005). Similarly, Reva (2012), found that secondary male school of Trinidadian and Tobago participated in more athletic activities (t (1350) = 8.82, $p < 0.001$, $d = 0.49$) than females who participated in more artistic activities t(1350) = 8.34, $p < 0.001$, $d = 0.46$).

A handful studies have correlated age, involvement in co-curricular activities and academic achievement. Tanner (2007), in an analysis of research and studies conducted on involvement in co-curricular activities since 2010 opined that most studies focus on one age group or fail to distinguish ages in the analysis. Reva, (2012), examined involvement in co-curricular activities as determined by age among Trinidadian secondary school adolescents. They reported that participant's age was not associated with athletics, intellectual or religious activities although older students were more likely to participate in athletics t(1374) = 3.83, $p < 0.001$, $d = 0.30$ (Non-participants' $M = 14.01$, $SD = 1.67$; Participants' $M = 14.51$, $SD = 1.70$). Similarly, Singh Annu 1 & mishra sunita2 (2015); found that age had no effects on the co-curricular activities that children were involved. However Wiggins (2016), suggests a negative correlation between physical education and middle school Dutch adolescents. He recommended that future research should measure the relationship between physical education and involvement in physical education as a function of age; one of the aspects the current research endeavoured to establish.

Researchers have also measured three way interaction among variables. Steeves (2014), conducted a two-factor analysis of variance (ANOVA) to determine if the mean GPA of Hispanic students who participated and did not participate in Kansas State High School

Activities Association (KSHSA) sponsored co-curricular and extra-curricular activities was influenced by gender. The results were not statistically significant (F = 1.246, df = 1, 554, p = .233) indicating that the mean GPA of participants and non-participants in KSHSA-sponsored activities was not influenced by gender. However, a loglinear analysis revealed that the odds of a student graduating from high school were 12 times higher if a student participated in KSHSA-sponsored activities and an additional 1.5 if the student was female. In contrast, some studies show that males have higher involvement rates than females (Klesse, 2004). Klesse found that males participated in extra-curricular activities 66 percent of the time compared to 46 percent of the time for females.

In one of the earliest studies conducted in America on ethnicity, gender and involvement in extra-curricular activities, Sabo et al. (2010), found that Hispanic females from rural schools and White females from suburban schools recorded increase in achievement tests, retention rate, popularity and general college success. However, when Melnick et al. (2005), conducted a later study, the results negated the first findings. They found that involvement in sports was not related to increased test scores or college academic performance.

Students also engage in activities depending on their personal interest that fit within their individual strengths. Gilman (2004), avers that student participation in structured extra-curricular activity provides them an avenue to express their talents while at the same time mastering skills that are in line with the school value system. For instance, core values can be applied in the classroom setting, and the challenges that students might face on the field may lead into problem solving not only in the classroom but also in the student's lives. This

explains the purpose of promoting student engagement in structured extracurricular activities.

Social context also influence the choice of co-curricular activities. Students considered to be ‘at risk’ of graduating from school mostly come from minority races and low social economic backgrounds. Vinoski, et al. (2016), found that for girls aged 9 to 13 years, it was their parents who decided the co-curricular activities that their daughters engaged in. For ethnically diverse students, church activities gave high school students a safe place after the class hours. Therefore, educators must continue to address the issues of academic performance of students regardless of their socio demographic differences, that is, continue providing students with equal chances of success in colleges.

2.7 College Policies on Participation in Co-curricular Activities and Student Academic Performance

Almost all of Kenyan students have ever participated in some kind of organized co-curricular activities (Okero, 2014). Organized activities include clubs, movements, societies, games and sports, athletics, cheer teams and student councils. Today, there is substantial concern on how young adults spend their leisure time inside and outside educational institutions and types of activities that are important to their development. Studies support either, involvement, over-involvement, or not being involved in co-curricular activities.

Colleges are in a unique position to promote social, psychological, physical, and intellectual development of young adults and help them establish lifelong healthy

behaviour patterns. The Physical Education Guidelines for Kenyan schools and TTCs recommend children and young adults to engage in at least one Physical Education lesson in a week. In addition to physical education, colleges provide other opportunities for students to participate in co-curricular activities. Colleges can provide opportunities for co-curricular activities before and after school hours. These activities may include drama, music, debate clubs, St. Johns Ambulance; movements like scouting, girl guides; societies such as Young Women Christian Associations, Young Men Christian Associations, subject-based clubs like journalism, mathematics, Kiswahili, History among others; athletics, games and sports. Colleges can also encourage participation in co-curricular activities by allowing students, their families and others in the community to use school facilities such as the track, gym, or fields.

2.7.1 Policy on number of co-curricular activities students participate in and student academic performance

Most students from primary through university engage in co-curricular activities during their school life. Some colleges restrict students to the number of activities one can engage in per term/season while others just state the minimum requirements. In some colleges, students can choose to participate or not. According to Kuh *et al.* (1991), about 80 percent of college students engage in at least one of the several types of co-curricular activities: cultural, social, political, communication, athletics, religious, academic. Indeed one out of four students participate academic clubs. Acquah and Anti Partey (2014), also found that in Africa, 51.3 percent of Ghanaian senior high school students in Ashanti region taking economics engaged in co-curricular activities. As indicated by Marsh (1992) and Thinguri

(2013), the number of co-curricular activities a student participates in impacts on their academic success.

Vinoski et al. (2016), provided insight as to why some students chose not to participate in co-curricular activities. The students stated that they found the activities irrelevant (76%), the activities ate into their time of completing assignments (47%), and others felt that they would rather work (38%) while a 26 percent others had social reservations. Stephen & Schaben (2002), measured whether the number of co-curricular activities students were involved in influenced their academic performance. They found that students who participated in at least one sport each year performed better than their classmates who did not in terms of class position, overall grade point average (GPA) and in mathematics. In addition, students who had participated in many sports in several seasons had higher scholarship than those who participated in few sports or only once in a year. Other researchers have separately found similar findings. Ayan, Carral & Montero (2014), and Pellicer-Chenoll, Garcia-Masso, Morales, Serra-Ano, Solana Tramunt, Gonzalez & Toca-Herrera (2015), all found that the more physical activities students participated in, the more fit they were and the more likely they were to get good grades. Steeves (2014), add that students who engage in physical activities during their adolescence years tend to achieve higher levels of education and better socio-economic status later in life.

Morita, Nakajima, Okita, Ishihara, Sagawa & Yamatsu (2016), examined multiple sport athletes against single sport athletes and found that multiple sport athletes had the highest grade point averages. In another study, Ritchie (2018), found that the number of co-curricular activities a student participated in had positive effects on GPA. The regression

model for predicting GPA (GPA = 3.313 + 0.054) showed that a unit increase in co-curricular activities would result in a GPA increase of 0.054 grade points.

On the contrary, some studies report multiple involvement as antithetical to the benefits of involvement. Brown (2000), found that students who participated in three activity categories experienced a decline in grades and self-esteem. In addition, Steeves (2014), opined that at the highest point of involvement, students' grades dropped sharply. Winter, Sterling and Cotton (2015), argue that participation in co-curricular may become detrimental where identity with the activity becomes too strong such that it displaces school identity or when time invested is too much that a student is left with little time for academic work. These studies indicated that in situations where students were involved in many activities, positive impacts decreased and deleterious effects surface.

2.7.2 Policy on types of co-curricular activities and students' academic performance

College administration chose on types of co-curricular activities to avail to students depending on a number of factors such as availability of resources. Most types of co-curricular activities fall into two groups; formal and informal. The formal activities include the relatively structured activities such as ballgames, athletics and music festivals while informal are the less structured including watching television. Literature suggests that the two types of co-curricular activities have different effects on students' motivation and feelings of competence; the two factors that greatly influence academic performance (Winter *et al*., 2015). Other researchers categorise out-of –class activities as co-curricular (formal) and extra-curricular (informal). Darling, *et al* (2005), concluded that students who

participated in co-curricular activities outperformed those who participated in extra-curricular activities.

Co-curricular activities are regarded as an important ingredient of a student's college life and many students engage in it. Bartkus et al. (2012) and Shulruf, (2010), aver that educational institutions invest reasonable amounts of resources on co-curricular. They are required to support many activities so as to present students with a balanced education (Shulruf et al., 2010). Students participate in types of co-curricular activities available in their colleges; and the type of co-curricular activity affects their academic outcomes. A study by Massoni (2011), revealed that students get more benefits that are academic from activities that promote cardio respiratory capacity and motor ability than those that promote muscular strength. Massoni (2011), also found that fundamental movements such as stretching, throwing, kicking and running predicted academic performance among 9th graders. They concluded that this was because some physical activities also stimulate neural pathways that lead to better cognitive functioning. Chickering (2007), argue that such co-curricular activities are closely connected to classroom learning.

McCarthy (2000), asserts that students who participate in regular, organised activities are less absent from school, which translates to higher GPA. Darling et al (2005), in a longitudinal study involving American high school students found that students who participated in school-based co-curricular activities scored higher grades, had higher academic aspirations, and better academic attitudes. Organised sports provided students with opportunity for initiative, emotional regulation, goal setting, persistence, problem-solving and time management (Larson, Hansen & Moneta, 2006). Such qualities may help

to explain the relationship between co-curricular activities and academic performance (Marsh & Kleitman, 2002). Additionally, Flowers and Whitt (2010), studied 23 colleges using National Study and Student Learning tool and revealed that students who interacted more with their colleagues in both course-related and course-unrelated activities had more cognitive gains. In addition, peers interaction on non-course related matters had substantial net effect gains in understanding the arts and humanities (Pascarella et al., 2001).

Often times, involvement in informal extra-curricular activities is associated with decreased learner performance. Massoni (2011), concluded that students who watched television for more than 30 hours in a week had negative attitudes towards school and experienced a decrease in their academic work. The findings were corroborated by Bashir (2012), who found that adolescent students who spent more time on Facebook had lower GPA and spent less time on schoolwork. However, a study conducted on K–12 students in Israel by Bashir (2012), investigated the impact of various informal science-learning opportunities on the science education of compulsory school students. This study found that students' participation in science clubs aroused in learners interest to learn science. The research also found that studying science outside classrooms made it more likely for students to attain higher levels of science related literacy as well as acquire inquiry related skills. The study conclude that engagement in both classroom and outside classroom resulted to higher mental development among students.

Several studies have examined how specific co-curricular activities affects students' performance. Results have shown that academic outcomes may vary depending on an activity (Asaba, 2015). Involvement in art-based or social activities produces positive

effects. A study conducted by Marais (2011), showed that students who participated in dance reported that they learnt skills like patience, problem identification, strategy building and other ways of expressing oneself other than verbal. Marais (2011), also found that debates promoted critical thinking skills and theatre provided learners with social skills such as cooperation, teamwork and group building. A study conducted at Stanford University demonstrated that students who participated in art based clubs that had activities like singing, dancing and painting were more likely to achieve higher and win academic awards. This was probably because learners participating in arts use linguistic and cognitive thinking skills.

Contrary results were found in a study conducted by Pascarella et al. (2005). Using data from the National Study and Student Learning (NSSL), Pascarella et al. (2005) further measured the impact of Greek affiliation to critical thinking skills during the first year of college. Controlling for potentially confounding influences, they found that men who belonged to social fraternities scored lower in critical thinking, reading and mathematics as well as in composite achievement compared with those with no affiliation. In addition, sorority membership was found to have a statistically significant negative relationship with reading skill and composite measure of achievement (ibid).

Many researchers have explored the potential benefits of participating in music and academic performance. Studies indicate positive influence between the two. For instance, Schaben (2002), found positive relationship between involvement in music and academic performance. Similarly, Harrison (2003), found that academic scores were higher in students who studied music, especially in mathematics. Results in Harrison's study

suggested that arts are central to the learning experience for they add depth and quality to the learning process; and this has ripple effects to the rest of the students' academic life. Marais (2011), in Ohio State also found that students who played musical instruments in schools outperformed others who did not play in subjects like mathematics, citizenship, science and reading. In an earlier study conducted in 17 countries to analyse scientific achievement, Mungai (2012), found that top performing schools had music as an integral part of their co-curricular. Indeed Mungai (2012), opined that concentration and hardwork required for one to succeed in music develops self-discipline and influences success both in school and out of school. Massoni (2011), adds that involvement in music and drama help in development of problem-solving and analytical skills among learners.

College administration usually encourages students to participate in service-based clubs that give back to the community. These activities include community oriented services (visiting the elderly, community clean-up); church oriented (Christian Union, Catholic Action, Church choir); and movements like scouting, girl guides, young farmers; societies like Young Men Christian Associations, Young Women Christian Association, St. Johns Ambulance, Red Cross and Red Crescent among others. Such activities inculcate values like creating involved and caring citizens. Involvement in service clubs has been linked with increased student engagement, increased student achievement, increased sense of self-worth and reduced discipline problems (Massoni, 2011).

Researchers in a study that examined five success factors of high achieving among Puerto Rican High School students concluded that involvement in community-based extra-curricular activities had positive effects on academic achievements. In addition, students

developed a positive self-concept that discourages involvement in oppositional youth culture like gang life (Gonzalez,et al., 2015). Research conducted by Mungai (2012), in Walnut Creek Christian Academy showed that students who participated in community service, played sports and watched television improved in academic performance while those who played a musical instrument did not. He concluded that involvement in co-curricular activities affects academic performance but the effect was dependent on the type of activity the student was involved in. Zhao (2005), added that students who volunteered in social activities related to the community or their institution had more academic gains than those who did not.

Mungai (2012), opines that educational experiences that involve physical activities improve "student learning and motivation, enhances brain function, improves recall and engages students in the learning process". Students who participate in physical activities undoubtedly improve in their academic performance. Besides improving academic performance, involvement in physical activities helps to improve students' self-confidence, increases self-esteem, enhances social and cognitive development, and provides an opportunity for students to express emotions that they would otherwise not express in the regular curricular settings (ibid).

There is considerable research evidence that involvement in sports is positively correlated to academic achievement. This is because sports provide an environment where students are able to develop strong identifications with school (Thinguri, 2013). Sports help students to establish a sense of belonging, generate self-motivation and responsibility and institutes self-discipline through commitment and hardwork ethics (ibid) .In a cross-sectional study

found that students who participated in sports reported stronger feelings of belonging than those who were involved in arts and academic clubs. Earlier studies also demonstrated that involvement in sports resulted to meaningful positive impacts. Chudgar et al. (2015), found that students who participated in sports were more likely to have an average GPA of 3.0 or higher out of a scale of 4.00 compared to non-participants. Similarly, Marsh & Kleitman (2002), found that students who spent more time on sports and other structured activities and less time on television watching scored higher grades in their studies.

Contrary to these findings, Thinguri (2013), found that students who participated in sports were more likely to be involved in delinquency than the non-participants. Broh (2002), also posits that while involvement in some co-curricular activities increases academic performance, involvement in some others decreases learner's academic achievement. Broh further conducted a longitudinal study sponsored by National Centre for Education Statistics (NCES) of the United States Education Department among 8th graders from public, private and parochial schools. Follow-up studies were conducted after two and four years after the baseline survey when the cohorts were in 10th and 12th grade respectively. The results indicated that involvement in interscholastic sports created a small but consistent improvement in students' scores. Involvement was positively associated with students Mathematics grades ($b = +.230$, $p < .001$) and English ($b = +.219$, $p < .001$).

Almost all educational institutions provide students with opportunity to participate in athletics. Asaba (2015), conducted a study alongside North Carolina High School Athletic Association and found a marked difference in performance between athletes and non-athletes with athletes scoring a higher GPA. A follow-up longitudinal study conducted

between 1993-1996 that included high schools across North Carolina found that athletes had a mean GPA of 2.86 against non-athletes with an average GPA of 1.96 (ibid). According to Thinguri (2013), students who participated in athletics were 1.7 times less likely to drop from school than the non-participants were. Yaacob, & Haron (2013), reported that athletes were more likely to hold higher educational aspirations and social higher standing than non-athletes were.

Some studies report negative results on students who engage in athletics. In one study, it was reported that student athletes had issues with behaviour and were indisciplined. Yaacob et al. (2013), observed that involvement in athletics was associated with higher levels of sexual activity for boys and higher levels of aggressive behaviour than other types of involvement. Other studies report no association between involvement in athletics and academic achievement (Brown, 2000). In his doctoral thesis Brown used three groups of students to measure influence of co-curricular activities on academic performance: athletics participants, students who participated in other activities but not athletics and students who did not part in any co-curricular (ibid). Those who were not taking part in athletics registered the highest average GPA of 3.22 followed by athletic participants with 3.02 while non-participants had an average GPA of 2.72. Overall, all students had a mean GPA of 2.88. It is clear that those who did not take part in athletics, on average attained a .20 GPA point higher than athletic participants did.

From the literature, one can deduce that the type of co-curricular colleges offer and students engage are many and vary across nations. Although most researches show that almost all co-curricular activities positively influences students' academic performance, it is

imperative to find out which co-curricular activities have greatest positive impacts on students so that college administrators can make informed choices (Mungai , 2012). In the United States, most studies centre on athletics and sports while in the European countries students mostly engage in music. There are limited studies in African countries for one to conclusively state the kinds of co-curricular activities that are prevalent among students. This research endeavoured to explore the relationship between types of co-curricular activities college policies advocate for and academic performance among college students.

2.7.3 Policy on time on co-curricular activities and students academic performance

Schools and colleges usually set time for co-curricular activities. Apart from Physical Education lessons that are scheduled within the school hours, other co-curricular activities are conducted before class hours, after class hours or over the weekends with time to spend in the activities clearly specified. Available literature suggests that intensity of a physical activity plays a role in academic outcomes. The level of involvement, which is operationalised in terms of hours spent on an activity or the number of activities one is engaged in, is frequently cited as a mediating factor for involvement that affects students' academic performance (Thinguri, 2013; Brown, 2000). The initial study conducted by Pace in 1970s investigated whether students engage in extra-curricular as well as how college environment influenced learning. The study found that learning is determined by both amount of time and quality of efforts that learners devoted to educational experiences.

The study laid a basis for Astin (1984; 1996), work on student involvement. Astin explained that involvement entails both quantity and quality of physical and psychological energy that a student devotes to college experiences. He believed that involvement was the

link between students' inputs and college consequences. Astin (1996), further clarified that a student's involvement in academic activities is measured in terms of hours spent on the reading activity (quantity) and in terms of comprehension of the reading assignments (quality). Therefore, time spent on co-curricular activities can be used to predict the academic benefits a student would draw from involvement. Darling et al (2005), agrees with Astin when he argues that some co-curricular activities such as sports and music require more time for practice, honing skills, synchronizing with teammates while others may just be tense and require little time. Astin (1999), in the theory of involvement urges administrators to ensure that the co-curricular activities provided to students are worth their time, that is, they are educationally beneficial.

Research provides evidence that the more involved a student is, in co-curricular activities, the more benefits he or she reaps. A number of studies posit that high intensity activities correlate with increased academic performance Phillips, Hannon & Castelli, 2015). A study conducted at Purdue University by Yaacob et al. (2013), using datasets that contained information about Purdue students in general and students engaged in sports demonstrated effects of intensive involvement in co-curricular activities and academic performance. The co-curricular programmes examined were those typified by intensive student involvement including frequent lengthy practice sessions and occasional absence from campus. Results showed that students who were heavily engaged in sports were the most satisfied and had higher GPA (3.5) than the other students (3.1) on a scale of 4.

Similarly, Ritchie (2018), conducted a regression analysis to test the conditional hypothesis that 'improvement on GPA score was dependent on how much time a student spent on co-

curricular activities'. He concluded that although the effect of intensity (time) was not significant, that of interaction was ($t = 3.370$, $p<.001$). The positive beta suggested that the effect of the number of co-curricular activities on the GPA was positively associated with the length of time a student participated in those activities. That is, the more time students spent on co-curricular activities, the more they were likely to improve in GPA by 0.13. Other studies that have demonstrated positive correlations include that by Storey (2010), who found that males who spent more time on co-curricular activities exhibited fewer delinquent behaviours than those with low involvement. The relationship was stronger for males from low socio-economic status families and those of low academic abilities at The Islamia University of Bahawalpur, Pakistan found a strong association between watching television and the academic performance of students. Students, who had obtained marks between 61% and 71%, watched television for 1 to 2 hours daily (ibid).

Students who spend considerable time and effort on co-curricular activities gain more penetrating experiences; sharpen their abilities, meet their goals, make sacrifices and become invested in a more meaningful way. However, some studies show that involvement in co-curricular activities is useful up to a certain point after which the returns diminish. Storey (2010), sought to establish how the amount of time students spent at work influenced their GPA. To achieve this, the study used data from National Survey on Student Engagement. The time the student spent at work was divided into four categories namely: zero hours, under 20 hours within campus, between one and 20 hours off campus, and over 20 hours. The study established that students who worked between one and 20 hours on campus had the best GPA amongst the four groups. Students who worked off campus

between 1 and 20 hours had a slightly lower mean GPA than students who did not work at all and students who worked more than 20 hours a week had a much lower GPA than the other three groups.

Other studies have clearly shown that participation in co-curricular activities is only beneficial to a certain point after which benefits diminish. An early study by Cooper, Valentine, Nye & Lindsay (1999), on amount of time a student spent on co-curricular activities and achievement in standardized achievement test scores revealed a curvilinear trend between involvement in co-curricular and academic achievements. There was a positive correlation between the amount of time spent on co-curricular activities and test scores. However, at the optimum participation, achievement scores declined greatly. These findings corroborated those of Knifsend & Graham (2012), who too found a curvilinear relationship between co-curricular participation and academic performance. Moderate participation in co-curricular activities presented students with a number of contexts to foster relationships with peers and promote a greater sense of school belonging (ibid). Conversely, students who spent a lot of time on co-curricular activities may have difficulties fitting with other students and determining where they belong with their peers. Randall and Bohnert (2012), reported a threshold effect between participation in co-curricular activities and students' psychological and social development.

A major study conducted by Kuh, Kinzie, Cruce, Shoup & Gonyea (2008), using data on National Survey on Student Engagement provided evidence that involvement in co-curricular activities may cause a decrease in academic performance. Analyzing data from the 18 institutions that participated in the study, Kuh et al. (2008), found that first year

minority students who participated for more than five hours in co-curricular activities recorded a decrease in GPA (Center for Postsecondary Research, 2007). In another study involving scholarship athletes, Miller, Melnick, Barnes, Farrell & Sabo (2005),. examined the impact of devoting a large volume of time to athletics on academic and social experiences. They found that scholarship athletes had less developed social identities outside of their teams. It was theorized that athletes miss a crucial part of their identity development because of their limited interaction with students outside of their sports. However, Stephen & Schaben (2002), argue that principals are interested in the relationship between academic performance and interscholastic sports, therefore, sports impact on academic performance and are necessary.

2.8 Co-curricular Facilities, Participation in Co- Curricular Activities and Students Academic Performance

An effective college facility supports educational delivery. At a minimum, the college administration should provide a physical environment that is comfortable, safe, secure, accessible, well illuminated, well ventilated, and aesthetically pleasing. On the one hand he term 'facilities' refers to areas or spaces that are either inside a building including TV rooms, gymnasiums, auditoriums or out-doors like football pitch, volley ball court (Chege , 2013). On the other hand, 'equipment' are the non-expendables which may be part of the permanent construction such as a goal post whereas ‘supplies’ refers to the expendable materials/items that are replenished from time to time like hockey sticks, nets, and tennis ball.

A college consists of the physical structure, variety of buildings, furnishings, materials, supplies, equipment and information technology. Depending on the quality of the facilities, a college can contribute to a sense of ownership, safety and security, personalization and control, privacy as well as sociality. When planning, designing or managing college facilities, these facets should be taken into consideration. Research shows that students' academic achievements correlate with better co-curricular facilities (Chege, 2013). For this reason, principals should oversee coordination of both curricular and extra-curricular programmes. The aim of such coordination is to ensure that the two programmes support each other in order to realise holistic development of the learner. As the instructional leader responsible for all learning experiences that take place at the school, the principal needs to arrange all educational facilities.

One of the major factors affecting student participation in co-curricular activities is the provision of adequate facilities, equipment and supplies. Wilson (2009), revealed that school boards and administrators decide what educational activities will be maintained in a school. Many times, the school administration dismisses co-curricular activities. This affects students' participation, teachers as sponsors or coaches. Keeping these activities requires funding and some schools do not have the resources to employ coaches, purchase equipment, and maintain the necessities to enable these activities to continue.

Chege (2013), found that students who were in schools that had newer buildings performed better than students in whose schools had old structures. The students also had better health records, low absenteeism and less indiscipline cases. Ogoch & Thinguri (2013), concluded that high academic results resonated with quality facilities in modern educational

institutions. A study conducted in Kisii County, by Omae, Onderi & Mwebi (2017), found that inadequate playgrounds were a hindrance to students from participating in co-curricular activities. Omae et al. noted that slightly over a half (53.7%) of the principals who participated in the study indicated that inadequate playgrounds caused students not to engage in co-curricular activities, while other principals who accounted for 62.5%affirmed that some of the available facilities were dilapidated and not fit for use. Overall, most participants felt that the insufficient and dilapidated co-curricular facilities could not support development of co-curricular talents and skills in the students.

These findings agree with Mwisukha, Njororai & Onywera (2003), findings who noted that one of the major factors affecting operations of successful development of co-curricular talents among students in Goa was provision of adequate facilities, equipment and supplies. Majority of the schools reported that they did not have the necessary equipment to conduct various indoor games. Most schools did not have out-door games equipment such as basketball, softball, hockey, handball, throw ball and croquet. The authors reported that most schools did not have adequate funds, had inadequate infrastructure facilities, lacked necessary equipment; and school management, principals, teachers and parents lacked interest and held indifferent attitudes towards co-curricular activities. Improper scheduling of co-curricular activities in the school timetable, shortage of trained teachers in co-curricular activities; use of leisure time for study by students due to academic pressure and lack of adequate incentives and rewards also contributed to low engagement (Mwisukha et al. 2003).

Ogoch & Thinguri (2013), carried out a study to find out factors affecting participation in co-curricular activities and development of students' talent in Addis Ababa. About 73% of teachers of three schools said that they lacked proper expertise to train students while Addis Ababa Education Bureau said such trainings were irregular. Students and teachers agreed that there was a very high shortage of co-curricular facilities and an overwhelming majority of teachers (85%) explained that Woreda Education Office did not pay attention to co-curricular activities. In Addis Ababa practice of co-curricular activities was also affected by presence of inactive clubs in school compounds, and unavailability of adequate budget for co-curricular activities.

A study conducted in Busia Sub-County by Abisaki, Mutsotso & Poipoi (2013), focused on Non-Formal Curricular Activities (NFCAs). Among the NFCAs identified by the study included different games and sports, clubs and societies as well as performing arts. The most popular games, according to the study, football, netball and volleyball while basketball was the least preferred. Overall, the study established that students were unable to participate fully in NFCAs due to inadequate facilities and time constrains. Similarly, Ogoch and Thinguri (2013), singled out insufficient sports facilities in Turkey, and the need to review the policies with respect to such facilities. Moreover, when sports facilities were taken into account on a provincial basis, Otaala, et al. (2013) found that the sports fields and sports facilities in central Cankiri Province were insufficient.

In yet another study by Ogoch et al, (2013), sports facilities in Kayseri province were found inadequate. The participating teachers singled out specific areas in which the facilities were inadequate. About 51.0% of them said they lacking on health basis; 40% identified

inadequacy in relation to ventilation, lighting and number of staff and 48.5% expressed that they were insufficient in terms of tools-equipment. Regarding the level of competence of sports facilities of Turkish sports, Otaala et al. (2013), concluded that the sports facilities of universities were insufficient in terms of their quality.

Research has revealed that schools that possess modern facilities that facilitate engagement in co-curricular activities post high academic performances. Naz et al. (2013), illustrated that physical facilities nature students' behavioural development. He argued that physical facilities in educational institutions help to reduce depression and pessimism. Appealing facilities and equipment are instrumental in increasing self-esteem that is related to students' behaviours including academic performance. Findings demonstrated that sufficient physical facilities did not only reduce anxiety but also increased students' confidence that resulted to high students' outcomes in education. In addition, results revealed that physical facilities facilitated change in behaviours among students. With reference to the hypothetical statements, availability of transport, recreation facilities and sufficient accommodation supported development of desirable behaviours among students. When the hypothesis was tested using chi-square test at .05 probability level, results showed a significant relationship among variables related to infrastructural facilities ($\chi 2 = 56.89$, d.f. = 9).

In other places, researchers reported adequate co-curricular facilities for some activities and inadequacy for others. Okero (2014), found that most schools had the needed facilities except for athletics. They also observed that schools did not have sufficient items of musical instrument but they hired the needed instruments. Some schools had well-

furnished auditorium, where most of the district level workshops and seminars were conducted. However, co-curricular programmes in most schools had remained unattractive chiefly because of inadequacy of facilities. In fact, amount and variety of facilities, equipment and supplies needed depended upon several factors including the type and extent of programme, the number of students to be served, and budgetary considerations. It was observed that although good leadership is the most important ingredient in conduct of schools, a proficient teacher can do a better job by the use and mobilization of resources and material (Pascarella, & Terenzini, 2005).

In government institutions, it is the responsibility of the government to provide funds for co-curricular related facilities and equipments. Inadequate sporting materials hinder many students from being involved in co-curricular activities. Eventually, such institutions they give up or shift the burden of provision to parents (Pejić-Papak & Vidulin, 2011). Students in such institutions miss the benefits of co-curricular activities especially its contribution to academic performance. In conclusion, it is evident that the scopes of curricular activities that are practised in institutions differ depending on the availability of co-curricular facilities and other resources in a particular institution.

2.9 Motivation Strategies, Participation and Students Academic Performance

Motivation plays a major role in achieving goals and objectives (Pejić-Papak & Vidulin,2011). Increased motivation, commitment and engagement levels are important to what students do contribute high levels of performance .Motivation is the driver of people's actions, desires, needs, or what makes a person to desire to re-do a certain behaviour .Students motivation, therefore, is the process whereby their desire to engage in

co-curricular is energized, sustained and directed in order to meet individual needs and achieve academic objectives. Steeves (2014),(opines that an achievement is something, which someone has succeeded in doing, especially after exerting a lot of efforts.

Motivation correlates with leadership. Effective leaders set examples, provide guidance, encourage those they lead and provide unambiguous instructions. Studies have shown that school administrators use a variety of strategies to support co-curricular activities. Administrators in public and private schools used motivation as catalyst to encourage students and teachers to participate in co-curricular activities at school level and other levels such as inter-district and provincial tournament. Through motivation, individuals willingly engage in some behaviour (Steeves, 2014).

Rewarding students is an important factor in motivation. Most educational institutions retained high student participation in co-curricular activities and consequently high academic success through well-balanced reward and recognition programmes for students. Motivation of students and their productivity is enhanced through effective recognition which ultimately results in improved academic performance. At times, students initially get involved with a co-curricular activity lured by the rewards associated with it then they start liking the co-curricular activity when they start pursuing it. School administrators can include different competitions to reward winners at school level. UNESCO (2005), report recommended that rewards should be given to the most active participants. Therefore, the more students are rewarded, the more they participate in co-curricular activities hence improved grades.

College principals can motivate students into participating in co-curricular activities by selecting interesting activities. In such cases, students get involve willingly in the activities on the basis of their own interests and preferences. The principals should also understand the limitations of students and provide options to choose. Pejić-Papak & Vidulin (2011), adds that co-curricular schedules should be arranged in such a way to accommodate learners optimally; and teachers need to be assigned extracurricular responsibilities according to their competencies and interests. Pejić-Papak & Vidulin (2011), further states that all of these need to be steered by the school principal who is accountable for initiating, coordinating and motivating both learners and teachers to participate enthusiastically. This way, students learn things in the natural way and this boost their academic performance.

The school principal is also accountable for ensuring a safe environment for learner participation in extracurricular activities. As a basic prerequisite, learners should be physically fit to participate in sport; team coaches should supervise and monitor learners constantly to prevent the performing of any dangerous acts that may be harmful bearing in mind that the school principal is accountable for such safety measures. Similarly, Yaacob & Haron (2013), felt that directors and teachers accountability is important for students to build and strengthen their spirit in co-curricular activities that lead to individual success. When experts coach students they feel motivated for they have trust in them. The college administrators should ensure that only experts coach and judge students co-curricular activities. An indicator of a well designed co-curricular programme is that students enjoy getting involved in it and like identifying with it. They feel like they are special group of a

special something. They experience opportunities to create relationships with their coaches, tutors and peers.

Lazaro & Anney (2016), note that schools in Tanzania held t competitions that included welcoming form one students, farewell parties for form four students, competitions among dorms and classes among others. Focusing on competitions, winners were awarded variously. Competitions, according to Muhammad et al. (2012), can induce a liking for a particular subject, as well as inculcate problem solving skills resilience and inquisitiveness. They further argued that competitions and exhibitions provided a rich environment where students interacted with their peers drawn from various schools while at the same time they were objectively assessed by competent academicians and experts in various areas of competitions. While materials such as books, stationery and uniforms were commonly used to reward winners, it was also customary to issue certificates of excellence to students during graduation ceremonies. These certificates were meant to enrich the Curriculum Vitae especially for finalist students.

Lazaro & Anney (2016), further found that most of the time, students were rewarded academic materials such as exercise books, pens, pencils to motivate them to participate in co-curricular activities in addition to certificates of excellence for their achievements either in academics or co-curricular activities. The findings concur with those in Muhammad (2012), who pointed out three reasons why students should participate in co-curricular activities as: "(a) prepare learners for the future life; (b) expose learners to wide range of experiences where they will study, live and work once they leave school and (c) can be an excellent opportunity to discover new meaning of life". Muhammad et al. (2012), further

argue that some forms of motivational rewards that administrators gave students did not directly promote development of the extra-curricular talent envisaged by the extra-curricular activity. This argument is qualified by the observation that during ball games competitions like volleyball and football, the winning teams were awarded with classroom learning materials like books and pencils rather than sports oriented materials such as balls, boots and tracksuits. The implication is that the institutions and their managers played more emphasis on developing students academically than sporting talents. Effectively, such rewards were likely to increase students' academic performance (Muhammad et al., 2012).

Extra-curricular activities can also be promoted in schools by assigning teachers as the supervisors of the activities. Lazaro and Anney (2016), remarked that while interviewing teachers and head teachers, one head teacher asserted that teachers were part of school management and as implementers, supervisors and monitors of co-curricular activities, they were involved in the planning stage of co-curricular activities. When teachers were asked if the management involved them in planning and executing co-curricular activities, majority answered in the affirmative. This is in line with what was reported by UNESCO (2005), that school administration should be inviting and creating conducive environment for voluntary participation of students and teachers. Since successful implementation of co-curricular activities and subsequent benefits such as improved academic performance is dependent on teacher efforts, there is a need for strong collaboration between school administrators, teachers and students.

Other studies have reported low motivation efforts from school administrators towards co-curricular activities. Kiriyana, Maphosa & Mapurunga (2014), found that head teachers

and teachers hindered students' involvement in co-curricular activities and this hindered them from exploiting their creativity on types of activities they interested in. In addition, Kiriyana et al. (2014), reported that laissez faire attitude towards co-curricular activities by school administrators led to exclusion of many students from whole college experiences. Lazaro and Anney (2016), also found that co-curricular activities were not taken seriously by teachers and headteachers; the playgrounds were in a poor condition. These findings corroborates those of Abisaki et al. (2013), who found that many teachers considered extra-curricular activities as an onerous task and they were less interested and motivated to carry them out.

2.10 Theoretical Framework

Literature on students' participation in co-curricular activities is awash with many theories. Four interrelated theories that complement each other guided the current study in explaining the relationship among institutional co-curricular factors, participation in co-curricular activities and students' academic performance. They include Astin's Involvement Theory, Zero-Sum Theory and Threshold Theory.

Astin (1999), in his 'Student Involvement Theory' states that students learn more when they get involved in all aspects of college life. He describes an involved student as one who devotes his energy to academics, spends a lot of time on campus, participates in student organizations and activities, and interacts with his or her faculty. The theory is premised on 5 tenets: (a) involvement refers to the investment of physical and psychological energy in various objects; (b) involvement is unique to each student with each student putting different degrees of effort; (c) and involvement can be measured qualitatively and

quantitatively. In addition, in the theory it is further assumed that (d) students' academic or personal outcomes are directly proportional to the quality and quantity of their involvement in that activity; (e) and that effectiveness of any educational policy or practice is directly associated with the capacity of that policy or practice to increase student involvement.

This theory emphasizes student effort and investment of energy in the achievement of the desired learning and development (Astin, 1999). The theory provides strong evidence for the value of co-curricular activities. According to Astin, academic performance is associated with student involvement. Astin takes into account student demographics, background, experiences, and environment when explaining this association. More involvement in activities results in better performance (ibid).

Critics of co-curricular activities advocate for schools to focus their time and energy on academics. They believe that involvement in co-curricular activities is a distraction from the schools core business; the academic work. This is generally referred to as the 'Zero-Sum Theory' that arose from Abisaki et al. (2013), seminal work. Ritchie (2018) avers that participation in co-curricular produces negative effects on academic work since students are tempted to spend a lot of time on co-curricular activities and spend little time on academics. Fortune (2013), argues that there is finite time for schools and students, therefore, academics and co-curricular activities are in competition for the limited time. Applying the zero-sum theory would mean that students would not have enough time to complete their academic work, thereby dropping in their academic performance due to time demands.

Researchers support Abisaki et al. (2013), argument in the theory. They posit that participation on co-curricular activities does not influence academic performance or have negative relationship. They argue that time spent on co-curricular should be used in academic endeavours; Marsh & Kleitman, 2002. Indeed Fortune (2013), observed that involvement in musical activities had no effect on students' academic performance. Steeves (2014), also concluded that extra-curricular activities add no value to academic pursuits and argues that co-curricular may be harmful to learning achievements.

Other theorists in the 'Threshold Theory' posit that involvement in co-curricular activities is academically beneficial to a student upto a certain point after which the benefits start diminishing Marsh & Kleitman (2002). The theory hypothesises that the relationship between involvement in co-curricular activities and academic outcomes resembles an inverted U-shaped function. The proponents of the theory argue that at low and moderate levels of involvement in co-curricular activities, a student's academic outcomes increases, levels off and then decreases at highest involvement levels. Academic outcomes diminish when a student becomes excessively committed to co-curricular activities leaving little time to academic pursuits.

In support of the theory, Vermaas et al. (2009), argued that both positive and negative effects of involvement are dependent on the nature of the activity and the background of the student involved. These assertions also find evidence in several studies conducted in different places.

The three theories provided a framework for understanding how involvement in co-curricular activities influences academic outcomes. Students choose the types and number of co-curricular activities to engage in (quantitative dimension) that require different time commitments (qualitative dimension). Such involvement is beneficial to academic work upto a certain point. If students choose to concentrate on co-curricular activities and ignore academic pursuits, academic performance decreases.

2.11 Conceptual Framework

A conceptual framework is a diagrammatical representation of the relationship between the independent, process and dependent variables. The independent variables in this study are the institutional co-curricular factors including; college co-curricular policies on number of co-curricular activities, types of co-curricular activities and time on co-curricular activities; co-curricular facilities and equipment; and motivation strategies used by college administration. Students' academic performance is the dependent variable measured by internal CATs provided by colleges and the Mock Examinations that is standardized across zones. Figure 1 presents a diagrammatic representation on the interaction of the study variables.

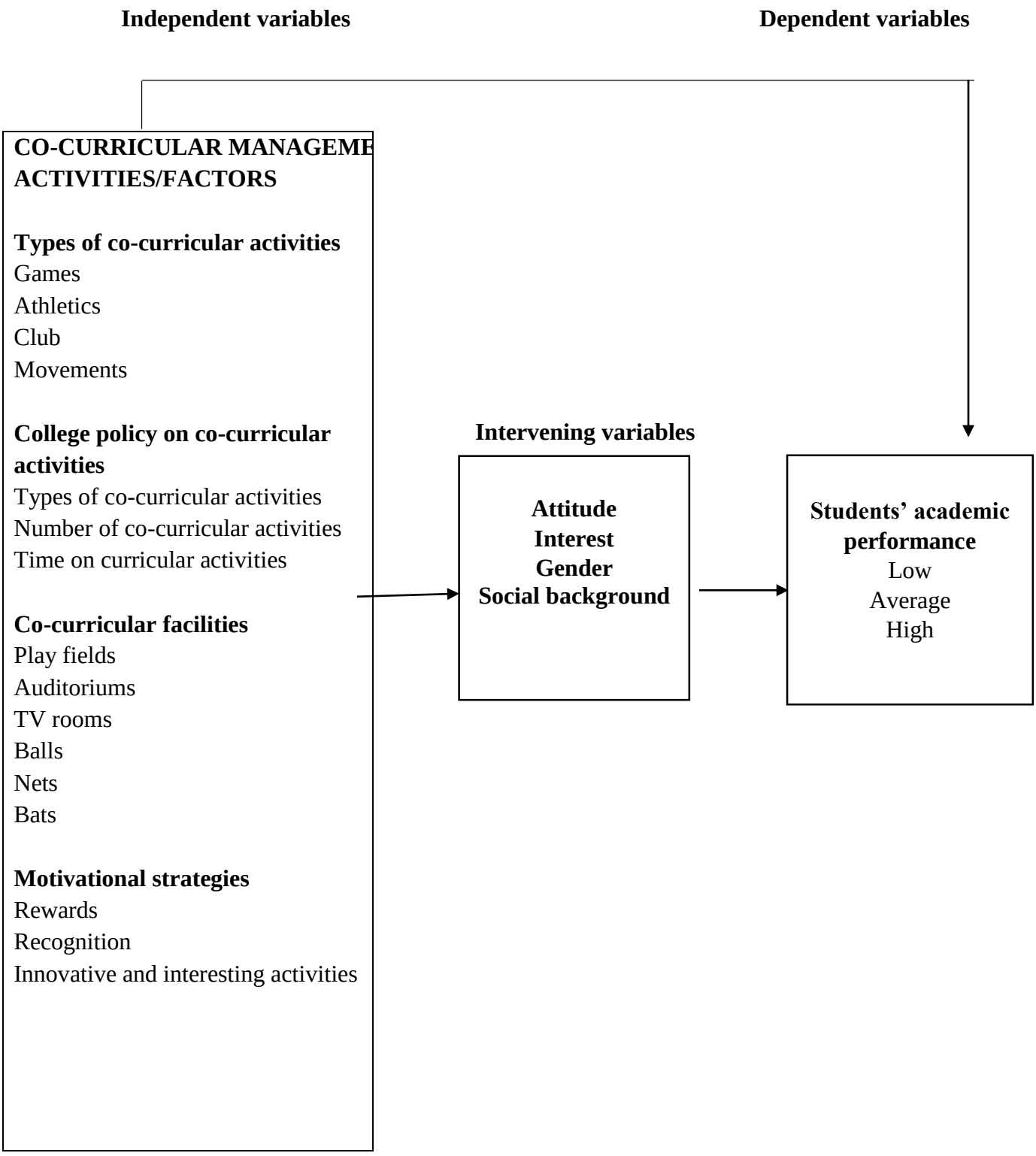

Figure 1: Interrelatedness of study variables

In analyzing the interrelatedness among the study variables, it is important to understand the conceptual relationship among independent, process, dependent and intervening variables. In the study, the independent variables; types of co-curricular activities offered by a college, college policies on co-curricular activities, co-curricular facilities, motivational strategies used by the college administration constitute the input variables. They are significant in that acting on and operating through students' decisions to choose and participate in a co-curricular activity (process), they influence the dependent variable; students' academic performance (output variable). The decision to participate in co-curricular activities constitutes the cognitive and behavioural context within which a student makes choices. The choices are a function of a student's attitude, aptitude or interest (intervening variables).

2.12 Summary of Reviewed Literature and Study Gaps

Reviewed literature shows mixed results on influence of institutional factors on academic performance. Where educational institutions had modern and adequate co-curricular facilities and equipment, students' academic performance was better Tanner, 2007; Naz et al. 2013); while inadequate and dilapidated facilities impacted negatively on academic performance (Pejić-Papak & Vidulin, 2011; Omae et al. 2017). Motivation strategies enhance participation in co-curricular activities that leads to improved academic performance (Lazaro & Anney, 2016). In cases where administrators were disinterested in co-curricular activities, students missed out from whole college experiences (Fortune, 2013).

College policies on co-curricular activities ensure students benefit from participation in the activities. Some of the benefits include having better grades and test scores, higher educational attainment, less absenteeism, and increased connectedness to the school (Ayan et al. 2014; Chudgar, et al. 2015; Johnson, 2013; Muhammad et al. 2012; Phillips, et al. 2015; and Ritchie, 2018). Besides academic success, participation in co-curricular activities correlated positively with social success. Students gain skills in teamwork, leadership, communication, group dynamics; and are less likely to get involved with problem behaviours (Anderman, 2008; Gardner et al. 2008; Gilman, 2004; Morrissey, 2005; Pascarella & Terenzini, 2005).

However, over-participation may take too much of students free time resulting to low academic performance (Knifsend & Graham, 2012). In the literature, it was found that over-involved students had a higher likelihood of indulging in vices such as abuse of alcohol and drugs depending on the college climate. To the negative effects that take place from being over-involved in extracurricular activities. Some studies have reported discipline problems among students who participate in some types of co-curricular activities like athletics and football (Yaacob et al., 2013). Other studies report that there is no statistically significant relationship between involvement in co-curricular activities and academic performance. The authors argue that co-curricular activities add no value to academic pursuits; such activities are detrimental to students' academic achievements and that such time requirements should be used in academic endeavours (Brown, 2000; Marsh & Kleitman, 2002.

As revealed, most literature linking co-curricular related factors to student performance has been conducted in the developed states and nations. Very few studies have been conducted among developing nations and Kenya in particular. According to Okero (2014), almost all Kenyan students have experienced co-curricular activities but besides athletics, research on the other types is scanty. In addition, most studies concentrate on one co-curricular activity and a few on multiple activities; some focus on only extra-curricular activities leaving out co-curricular activities and the inverse is the same. The available literature is not conclusive as it does not suggest whether involvement in co-curricular activities influences students' academic performance positively or negatively. This needs to be corrected through research. Additionally, the few studies conducted in Kenya are on adolescents in primary and secondary school levels leaving out young adults at colleges. The current study focused on all the co-curricular activities provided in public Primary Teachers Training Colleges.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a description of research methodology that was used in carrying out the study. It gives a description of the research design, target population, sample size and sampling procedures, description of research instruments, pilot study, instrument validity and reliability. In addition, methods of data collection, data analysis techniques and ethical considerations are presented.

3.2 Research Design

The study adopted correlational survey designs. A correlational survey research design was appropriate to the study. It enabled the researcher to find relationships between variables using a single study population and to find patterns that existed between the variables. Fortune (2013), opines that "a correlational design allows the researcher to analyze relationships among a large number of variables within the context of a single study and to investigate how the variables either individually or in combination influence another variable or variables". In addition, the design allows the researcher to provide information concerning the degree of relationship between the variables studied.

Within the correlational survey design, the researcher quantified, described and characterized the phenomenon under study. Additionally, the researcher was able to examine the relationships between and among the variables and to determine the strength of the existing relationships. The study fitted within the designs because the researcher collected data once across all the participants in the PTTCS in Kenya to determine the

association between institutional related co-curricular activities factors and students' academic performance. Quantitative and qualitative data were collected using questionnaires, interview guides and focus group discussion guides. The qualitative and quantitative data were analysed using content analysis methods, descriptive and inferential statistics.

3.3 Target Population

Fortune (2013), state that target population is the aggregation of respondents that meets the defined set of criteria and to whom the researcher wishes to generalize the study findings.Creswell (2008), also agree that target population is the group of individuals, participants or objects with the specific attributes of interest and relevance. In this study, the target population was the students in public Teacher Training Colleges, the college Principals and Games tutors.

3.3.1 Public Primary Teachers Training Colleges

The study population was drawn from 25 public PTTCs that had presented students for Primary Teacher Examinations (PTE) for at least two years (Zahida , 2012).The colleges were spread in eight administrative regions in Kenya; Central (5), Coast (1), Eastern (5), North Eastern (1), Nyanza (4), North Rift (4), South Rift (2) and Western (3).

3.3.2 College Students

The total student population in the 25 public teachers training colleges was 20,700 students. Out of these, the study focused on Second Year students who were 9,731 (Zahida, 2012). The study targeted students in their second year as they had stayed in the college long enough and had at least sat for two examinations that were used in the study to measure

students' performance. First year students were left out because they were still familiarizing themselves with college life and may not had settled on co-curricular activities they wanted to participate in. Second year students had been in college long enough for them to be familiar with co-curricular activities offered by their colleges.

3.3.3 College Principals and Games Tutors

The study targeted 25 games tutors in-charge of Games Department who form part of college administration. They are usually responsible for the implementation of co-curricular activities. There were 25 College Principals. College principals make policies on co-curricular activities and decide on what activities the college funds.

3.4 Sample Size and Sampling Procedures

Using the Sample Size Calculator Wasal and Mohammad (2014), to determine the number of people you need to interview in a target population. Limit the amount of data you can use at a time and allow answers from up to 20 people in a data file. In this study a sample size of 370 students was arrived at. To obtain the 370 Second year students, multi-stage cluster random sampling techniques were employed. An equal number of students were sampled from each selected college. In each selected college, 20 students were randomly selected from a class. The students were divided into two categories. The first category was student in Option A (Science subjects) and another 20 from a class taking Option B (Arts subjects). Eight other students (4 from each option) were purposively selected to participate in focus group discussion. The sampling techniques employed at each stage are discussed in the subsequent sub-sections.

3.4.1 Selection of Colleges

In stage one, probability proportional to size technique was employed to select nine PTTCs (370/40 students = 9.25) out of the 25 PTTCs from eight administrative regions. The stratification variable was administrative region. This ensured representativeness with reference to national education sub-regions, ethnic communities and the various religious affiliations. Table 1 presents the number of public PTTCs sampled from each region.

Table 1: Distribution of sampled colleges according to administrative regions

Region	No. of PTTCs	Sampling fraction	Sample size
Central	5	0.36	2
Coast	1	0.36	1
Eastern	5	0.36	2
North Eastern	1	0.36	1
Nyanza	5	0.36	2
North Rift	4	0.36	1
South Rift	1	0.36	1
Western	3	0.36	1
Total	25		*11

*The total increased due to rounding off of the fractions. In addition, in a region where only one college existed, the college was picked to ensure representativeness of all regions. The formula used to arrive at the sample size per region was:

(i) Sampling fraction = n/N (9/25 = 0.36)

Where n = desired sample size; and N = the target population

(ii) Sample size (n) = regions PTTC population (N) × sampling fraction

For example, $5 \times 0.36 = 1.8 \approx 2$ colleges

3.4.2 Selection of Principals and Games Tutors

In stage two, the 11 college principals and 11 games tutors of the sampled colleges became automatic participants in the study.

3.4.3 Selection of Students

In stage three, sampling of students was done at two levels: those who filled out the questionnaires; and those who participated in Focus Group Discussions (FGDs). Simple random sampling method with replacement was utilised to pick two intact second year classes making sure areas of specialisation were considered from each college; then 20 students were selected from each class.

After sampling the 40 students in each college, a further eight students were systematically drawn from the second year students who had not participated in filling out the questionnaires to participate in focus group discussions (FGDs). Using class registers or class lists of about 40 students per class, the students' names were serialized from 1 to 40. Then interval size was calculated (40/8 = 5). A random integer between one and five was selected; in this case, three. Starting with the third unit in the class register or class list, every other fifth student was picked to make a sample of eight discussants. In total, 528 students participated in the study, that is, (40 x 11* = 440) + (8 x 11* = 88) = 528 students. Marks for all the students who were selected were obtained from the principal.

3.5 Research Instruments

Three sets of research tools were utilised to gather information. They included; a semi-structured questionnaire, a Focus Group Discussion (FGD) guide for students; and an

interview guide for the Principals and Games Tutors. The researcher developed all the instruments.

3.5.1 Questionnaire for Students

The students' questionnaire was self-administered. The questionnaires were developed in such a way that they consisted both open-ended and closed-ended questions. Most closed-ended questions adopted Likert scales format. The unstructured items were designed to gather demographic data of the students. They were also preferred as they allowed students to freely comment about their involvement in extra-curricular activities. Further, questionnaires are considered objective thus enhance credibility. It is also helpful in field data from a large number of respondents within a short time.

3.5.2 Focus Group Discussion Guide for Students

The researcher developed focus group discussion (FGD) Guide items through discussions with the supervisors on important themes related to the study, existing related literature and the conceptual and theoretical frameworks of the study. The FGD guide was used to solicit collective views and interpretations from the discussants. This brought out rich understandings of students' experiences in involvement in co-curricular activities and their performance in class work. Through FGDs, the researcher was able to reach out to students who could have found personal interviews intimidating (Wasal & Mohammad, 2014). The creation of multiple-lines of communications created a safer, tolerant, friendly and permissive environment in which individuals freely shared ideas, concerns and perceptions in a company of people with similar characteristics.

3.5.3 Interview Guide for College Principals and Games Tutors

Section one of the interview guide gathered demographic information of the principals and games masters and the second section probed on information on administrators facilitation in co-curricular. Pertinent issues on the extent of student engagement in co-curricular were solicited using this instrument. The semi-structured nature of the instrument guided the researcher on the core concepts to ask about and at the same time gave freedom to move the conversation in a direction of interest whenever an opportunity presented itself.

3.5.4 Student Academic Performance Data Sheet

Students entered the academic performance data sheet. They filled out their Continuous Assessment Test (CAT) CAT I and CAT II (Mocks examinations) marks. The marks were aggregated and averaged to 30 percent. The CATs constitute 30 percent of the final Kenya National Examinations grading of the students.

3.6 Piloting the Research Instruments

Wasal & Mohammad (2014), states that the term pilot study refers to a mini version of a full scale study as well as the specific testing of a particular research instrument such as a questionnaire or an interview schedule. He further states that a pilot study is conducted in order to develop and test adequacy of research instruments; assess the feasibility of a full-scale survey and assess the proposed data analysis techniques to uncover potential problems. Before the survey was conducted, a try-out of the instruments was done. According to Acquah et al. (2014), a 10% of the study sample is an acceptable sample size for a pilot study. Consequently, the researcher purposively selected one public PTTC that was later excluded from the main study, 40 students, a college principal and a games master

to respond to the instruments. Feedback from the respondents was used to further improve content, construct and face validity of the instruments and to ascertain reliability of the instruments.

3.7 Validity of the Research Instruments

Validity refers to that quality of a data-gathering instrument or procedure that enables it to measure what it is supposed to measure khan (2013) opine that instrument validity can be enhanced by expert judgement. If data collection instruments adequately cover the topics that have been defined as relevant dimensions, the instrument has good content validity (Wasal & Mohammad , 2014).

To ensure face, construct and content validity, instruments were scrutinised by three experts to ascertain if they would gather important, usable and necessary information. The experts were requested to comment on the clarity and appropriateness of the items. This was necessary in order to identify any items that would have been ambiguous or unclear to the respondents. Important responses on every item from the panellist were judged against a content validity ratio. The items that met a statistical significance values of 0.7 and above were retained (Wasal & Mohammad, 2014).

3.8 Reliability of the Research Instruments

Reliability refers to whether an instrument can consistently measure a concept and give consistent results each time it measures the same concept (Bryman, 2012). Generally, reliability refers to stability or consistency of an instrument to give similar results after repeated administration (Rahel, 2012) .In the study, test re-test method was employed to determine reliability of the questionnaire where the same questionnaire was administrated

on two occasions within a span of one week to the same students under the same conditions. This yielded two scores for each student and reliability coefficient was calculated using Pearson correlation co-efficient formulae (r);

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

r = Pearson correlation

N= number of pairs

XY= product of XY

∑XY = multiply each X times each Y, then sum the products

Using the formulae, an r = 0.83 was obtained indicating a high positive correlation (Hinkle, Wiersma & Jurs, 2003).

For the interview schedules and FGD guide, an inter-rater agreement level was established. Three raters independently interviewed principals and games tutors and conducted discussions with students in one college. The items in the College Principals' and Games Tutors' interview guides were rated at 0.81 (81%) and FGD Guide for students at 0.72 (72%). Therefore, all the three instruments met the threshold of 0.7 and above indicating that they were reliable for use in the data collection process during the main study (Rahel, 2012*).*

3.9 Data Collection Procedures

The researcher obtained a research clearance letter from Maasai Mara University and a permit from the National Commission of Science, Technology and Innovation (NACOSTI)

to facilitate data collection. Before the field study, the researcher sent introductory letters to all principals of the sampled colleges informing them of the intended visits to collect data. The researcher further made follow-up courtesy calls to all the principals to book appointments on when to collect data.

On the day of data collection, the researcher reported to respective County Directors of Education office to inform of the data collection exercise. In every college, the researcher first reported to the principal's office for assistance in the identification of games masters and selection of students who were to participate in the study. The students completed the questionnaire in a group setting after which eight student discussants who had not filled out the questionnaire were systematically sampled. The games master and the principal were interviewed in their respective offices. The researcher held a debriefing session with the principal, Games Tutors and students before leaving each college.

3.10 Data Analysis Techniques

The aim of this study was to establish the influence of institution-based co-curricular factors on students' academic performance as measured by the internal Continuous Assessment Test CAT I and CAT II (Mock PTE Examinations). The researcher first scrutinised completed data collection instruments before analysis. This was done in order to determine if a reasonable return rate was achieved. Data analysis involved developing summaries, looking for patterns and applying statistical techniques. Qualitative data were analysed by categorising and indexing responses into common themes. Verbatim excerpts from the participants were used in the analysis to support specific arguments.

Qualitative data were analysed through use of Statistical Package for Social Science (SPSS) computer programme Version 23. To summarise and charactrise the data, descriptive statistics such as frequencies, percentages, measures of central tendency, and measures of dispersion were calculated first. Following, inferential statistics like Chi-square test of goodness of fit and test of independence and multiple regression techniques were used to test hypotheses at 0.05 alpha.

3.11 Logistical and Ethical Considerations

In order to meet research ethical standards, the researcher obtained a research permit from NACOSTI. Additionally, the researcher observed the required preliminary field-work logistics including piloting the instruments and designing unbiased sampling frame to select the study participants. The researcher visited colleges to and explained the purpose of the study. The respondents were informed about their roles in the study. They were further informed that participation was voluntary and their consent was important to the study. They were assured of confidentiality of the data given and anonymity of their identities throughout the research process.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

Chapter four contains statistical analysis, interpretation and presentation of the findings as they relate to each study objective and null hypothesis. The purpose of the study was to determine the influence institutional-related co-curricular factors on students' academic performance in public PTTCs. Data are presented in sections that are aligned with the research question and null hypotheses as presented in Chapter One. Descriptive statistics are presented first followed by inferential statistics. Categorical variables were analysed using chi-square test.

All the hypotheses were analysed using chi-square and regression analysis as appropriate. According to Fortune (2013), regression analysis determines correlation between a dependent variable and two or more independent variables. The independent variable in this study was the self-reported academic performance as measured by average scores in the two Continuous Assessment Tests. The dependent variable was collapsed into three interval scale responses; high, average and low performance. The independent variables were both continuous and categorical variables. When reporting the significance findings, the three ways suggested by Rahel (2012), 'significant': $0.05 > p < 0.01$; 'highly significant': $0.01 > p < 0.001$; and 'very highly significant': $0.001 > p$ was applied. All the probabilities reported were based on two-tailed tests. The results are presented in tables and figures and their implications discussed. The chapter is guided by the following research question and hypotheses:-

Research Question

What institution¬-based co-curricular management factors influence students' academic performance in public Primary Teachers Training Colleges in Kenya?

Research Hypotheses

H_{01}: There is no significant influence of the types of co-curricular activities offered by a college on students' academic performance in Public Primary Teacher Training Colleges in Kenya.

H_{02}: There is no significant influence of co-curricular policies on students' academic performance in Public Primary Teacher Training Colleges in Kenya.

H_{03}: There is no significant influence of co-curricular facilities and equipment on students' academic performance in public Primary Teachers Training Colleges in Kenya.

H_{04}: There is no significant influence of motivational strategies used by college administrators on students' academic performance in public Primary Teachers Training Colleges in Kenya.

H_{05}: There is no significant influence of the predictive power of the institutional based co-curricular factors on students' academic performance in public Primary Teachers Training Colleges in Kenya.

4.2 Instrument Return Rate

The researcher visited all the 11 sampled public Primary Teachers Training Colleges to collect data by use of semi-structured questionnaires, focus group discussion guides and interview guides. The researcher was able to reach college Principles, games masters and students. Response rates are presented in Table 2.

Table 2: Instruments return rate

Instrument Type	Respondent Category	Sample size	Frequency	Percent
Questionnaires	Students	440	400	90.0
FGD Guides	Students	11 (groups)	11	100.0
Interview guides	Games masters	11	9	81.8
	College Principals	11	8	72.7

Out of 440 questionnaires distributed to the sampled Second Year students, 400 were found usable. This was after excluding 40 questionnaires that had more than 20 percent missing items giving a response rate of 90.0 percent. In addition, 11 focus group discussions (100.0%), 9(81.8%) and 8(72.7%) face-to-face interviews were conducted with students, games tutors and college principals in that order. The high response rate was partly due to the college context in which the instruments were administered. According to Acquah et al. (2014), a response rate of 70 percent and over is excellent. The researcher realised an excellent instruments' return rate of over 70 percent with each category of respondents; thus, the data were considered suitable for analysis.

4.3 Socio-demographic Characteristics of the Respondents

Socio-demographic data such as gender, age, marital status, and religion were collected from the respondents. Such variables help researchers to compare study populations with their cohorts and to look for possibilities of generalising results to other cohorts. The analysis helped in putting students' responses in context. Descriptive statistics on students' characteristics are presented in Table 3.

Table 3: Distribution of students in PTTCs by selected demographic characteristics

Demographic	Classification	Frequency	Percentage
Gender			
	Male	215	53.8
	Female	185	46.2
Age (years)			
	Below 18		
	18 -22	230	57.5
	23 – 25	110	27.5
	Over 25	60	15.0
Marital status			
	Single	355	88.8
	Married	45	11.2
Religion			
	Christian	356	89.0
	Muslim	44	11.0

n = 400

Table 3 indicates that among the 400 students who participated in the study, 53.8 percent and 46.2 percent of them were male and female respectively. Slightly over half (57.5%) of the students fell within the age range of 18 to 22 years with a mean age of 21.9 ± 1.55 years. Majority (88.8%) of the students were single and ascribed to Christian faith (89.0%). These findings are a typical reflection of characteristics of students in colleges as indicated in the studies by Rahel (2012), which show that more males than females participated in the study, the prevalent age was between 18 and 22, more than half percent of the participants were married and most of them were Christians.

In addition, students were requested to indicate their areas of specialisation. Majority of the students 260 (65.0%) had taken the Science option and the rest 140 (35.0%) specialised in the Arts option. With regard to college location, 6 (54.5%) of the colleges were in semi-

urban area, 3 (27.3%) were in urban areas and 2 (18.2%) were located in rural areas. The chosen areas of specialization are in agreement with the Basic Education Curriculum Framework (BECF) by the government that proposes three pathways in education; Arts and Sports Science, Social Sciences and Science, Technical, Engineering and Mathematics (STEM) to facilitate early identification, nurturing and development of full potential in learners (MoE, 2015).

4.4 Students Academic Performance

The dependent variable in the study was students' academic performance as measured by Continuous Assessment Tests. Evaluation of learning in Primary Teachers Examinations (PTE) is both internal and external and takes three forms; two continuous assessment tests (CATs), a final examination and assessment of teaching practice (TP). Continuous assessment contributes 30 percent of the total marks while the other 70 per cent comes from the final examination administered by the Kenya National Examinations Council (KNEC). The CATs are a form of formative evaluation that are marked by college tutors at college level.

In the present study, a student's overall average CAT score was calculated from the cumulative continuous assessment tests scores that were based on self-reported percentage scores in the CATs taken in all the core subjects and areas of specialisation (Option A or B). All second-year students start their specialisation at this stage and they are expected to make a choice between two options; Option A (Science) and Option B (Arts). The core learning areas taken by all students comprise of English, Kiswahili, Professional Studies, Physical Education (PE) and Information Communication and Technology (ICT). In

Option A, students take Science, Home-science, Agriculture, and Mathematics; and in Option B, students specialise in Music, Art and Craft, Social Studies, and Religious Studies. A summary of the average scores is presented in Table 4. The performance was reported as:

High performance = 75% to 100%

Average performance = 50% to 74%

Low performance = below 50%

Table 4: Self-reported average scores in Continuous Assessment Tests

Mean percentage marks in the CATs	Frequency	Percent
50% - 74%	328	82.0
75% - 100%	72	18.0
Total	**400**	**100.0**

From Table 4, majority of the students (82.1%) had an average performance of between 50 percent and 74 percent. Only 18.0 percent of the students were categorised as high performers. None of the students who participated in the study had below average scores (below 50%).

4.5 Types of Co-curricular Activities Provided by College Administration

The first objective of the study sought to identify the types of co-curricular activities supported by respective college administrations and those that were available to the students. To quantify this, students were requested to tick against a list the types of co-

curricular activities that were prevalent in their colleges and to add any other that were available but not included in the list. Table 5 presents the findings.

Table 5: Percentage of types of selected co-curricular activities as reported by college students

Co-curricular Activity	Frequency	Percent
Subject-based clubs (Maths, Science, Arts)	320	80.0
Leadership clubs (Peer programmes)	263	65.8
Movements (Scouting, CA, CU, Girl guides, YWCA)	378	94.5
Athletics/Sports/ Ball games	400	100.0
Drama, music, cultural clubs	400	100.0
Special Interest clubs (Comedy etc)	100	25.0
Student governance	400	100.0
Leisure clubs (Mountain climbing, site-seeing)	220	55.0

n = 400

As observed in Table 5 nearly all students in the PTTCs indicated that a co-curricular activity was available to them including student governance (100.0%), drama/music/cultural clubs (100.0%), movements lie scouting, Catholic Action, Christian Union, Girl Guide and Young Women Christian Associations (94.5%). All the other types of co-curricular were reported to be available in colleges by between 55.0% of students and 80.0%. Students reported that non-academic co-curricular clubs such as special interest clubs (25.0%) and leisure clubs (55.0%) were rare in the colleges. The varied presence of co-curricular activities are in line with the National Education Sector Plan 2013 -2018 [NESP] (MoE, 2015), that enlists co-curricular activities that best expose students' abilities with comprise of ; games and sports, martial arts, drama and music festivals,

science and engineering fares, essay competitions, athletics, art, home science, clubs, movements and societies.

The findings agree with those of Bashir (2012) and studies done by Kumar and Kumar (2012), noted that more than half [73 (53.7%)] of principals who took part in the study alluded that inadequate playgrounds hinder many students from being involved in co-curricular activities. Another group [85 (62.5%)] of principals insisted that some of the existing facilities are obsolete thus discouraging students from utilization. It was held by most senior teachers who took part in the survey that some of the existing facilities are obsolete thus discouraging students from utilization.

Student participation in co-curricular activities was a binary variable requiring students to indicate whether they had participated in any co-curricular activity as presented in table 6. The information was important because the number of co-curricular activities students participate in had an influence in their academic performance. Involvement in co-curricular activities affects a student's college life (Wang, 2012). The findings are congruent with views of educationists and administrators of educational institutions whose realisation is that co-curricular activities have positive influences on skill enhancement and academic performance of students (Marsh & Kleitman, 2002). The provision of organised sports provides students with opportunities for initiative, emotional regulation, goal setting, persistence, problem-solving and time management which are qualities that may help to explain the relationship between co-curricular activities and academic performance (Larson, Hansen & Moneta, 2006; Marsh & Kleitman, 2002).

Table 6: Students involved in co-curricular activities

Response	Frequency	Percent
Yes	399	99.75
No	1	0.25
Total	**400**	**100.0**

Almost all 399 (99.75%) college students said they were involved in co-curricular activities. The one student who replied in the negative probably was not aware that the various activities he/she engaged in could be classified as co-curricular. This was evidenced in subsequent responses where students indicated the co-curricular activities that they participated in. The high percentage of student involvement could be explained by the fact that all Primary One Teachers certificate students take Physical Education as a core subject and this could have raised their interest in co-curricular activities.

Students' responses were in agreement with the College Principals and games masters who, during the interview, indicated that all students participated in co-curricular activities except in instances where a physical disability hindered a student. The findings indicated that 99.0 percent of the College Principals were in favour of students' involvement in co-curricular activities in colleges. Likewise, all (100.0%) of the games masters acknowledged that co-curricular activities had major contribution in learners' performance in academic work besides developing individual talents. One of the student discussants said that students participated voluntarily in co-curricular activities. She said that students felt that they had a lot to gain from co-curricular activities. She outlined the benefits in the following statement:

> Almost all students find involvement in co-curricular activities as a great opportunity to do what they feel they consider themselves good at. Students utilise their time gainfully and learn to work as a team and meet with student from other classes and levels. … Where a student becomes the club or team leader, he or she perfects their leadership skills. We also learn subject related materials in subject-based clubs. This supplements classroom learning and boosts our academic performance.

These findings on high student engagement in co-curricular activities were in line with Kuh et al. (1991), about 80 percent of college students engage in at least one of the several types of co-curricular activities: cultural, social, political, communication, athletics, religious, academic. The findings further agree with Acquah and Anti Partey (2014), who found that more than half of students participated in co-curricular activities available in their educational institutions. Vinoski et al. (2016), provided insights as to why some students chose not to participate in co-curricular activities citing the activities irrelevant (76%), with a further 47% indicating that such activities ate into their time of completing assignments and others felt that they would rather work (38%) while a 26 percent others had social reservations.

Although 41(30.1%) of principals who took part in survey rejected the assertion that students participate in social events on daily basis, a majority of 75 (55.1%) of senior teachers were in disagreement that students participate in co- curricular on daily basis, and thus few students are involved in co-curricular activities.

4.6 Influence of Co-curricular Policies on Students' Academic Performance

The second objective of the study sought to determine the extent to which college policies influenced students' academic performance in public Primary Teachers Training Colleges in Kenya. Information was sought on policy on types of co-curricular activities college funded, number of co-curricular activities students were expected to participate in and the

time of day and duration the co-curricular activities were offered. All tests of significance were computed at coefficient alpha (α) equal to 0.05.

4.6.1 Influence of Policy on Number of Co-curricular Activities Students Participate in and Academic Performance

Influence of policy on number of co-curricular activities on students' academic performance was measured using a number of statistical procedures including cross tabulations, ANOVA and regression analysis. First, students indicated if their respective colleges had set a minimum or a maximum number of co-curricular activities that each student was supposed to get involved in. They also indicated the average number of co-curricular activities they participated in per term. The results are contained in Table 7**.**

Table 7: Number of co-curricular activities students participated in per term

No. of co-curricular activities	Frequency	Percent
1	30	7.5
2	35	8.8
3	65	16.3
4	100	25.0
5	55	13.8
6	50	12.5
7	50	12.5
8	15	3.8
Total	**400**	**100.0**

When asked on college policy on minimum and maximum number a student should participate in per term, all the students indicated that their colleges did not limit them on

the number of co-curricular activities that a student wished to engage in. This meant that students were free to exploit their various talents. Results in Table 7 shows that a quarter of the students participated in four co-curricular activities in a term. Only a low percentage (16.3%) of students participated in between one and two co-curricular activities per term. The average number of activities each student participated in were 4 (M = 4.35; SD = 1.863); with a mode of four and median of four.

To determine if the number of co-curricular activities students took in a term influenced their academic performance positively, the number of activities were collapsed into three categories as 1 -2 = "low numbers of activities"; 3 - 4 = "moderate number of activities"; 5 - 6 = "high number of activities"; 7 and above = "excessive number of activities". The distribution is contained in Table 8.

Table 8: Percentage of co-curricular activities students participated in per term

Response			**Number of co-curricular activities**			
	F	**(%)**	1 - 2	3 - 4	5 - 6	7 and above
Yes	399	(99.25)	65 (16.2)	165 (41.3)	105 (26.3)	65(16.2)
No	01	(0.25)				

n = 400

Most of the students 165(41.3%) were involved in an average number of co-curricular activities given that a student. Only a few students 65(16.2%) engaged excessively in co-curricular activities with a similar percentage participating in low activities. The interviewees concurred that students participated in more than one co-curricular activity in a term. A Games Tutor explained:

Clubs and movements run throughout the college year and students who are members of such clubs also take part in other co-curricular activities like athletics and ball games that are held in first term.

To understand the pattern of involvement in co-curricular activities, a histogram with a line graph was drawn. Figure 2 presents the pattern.

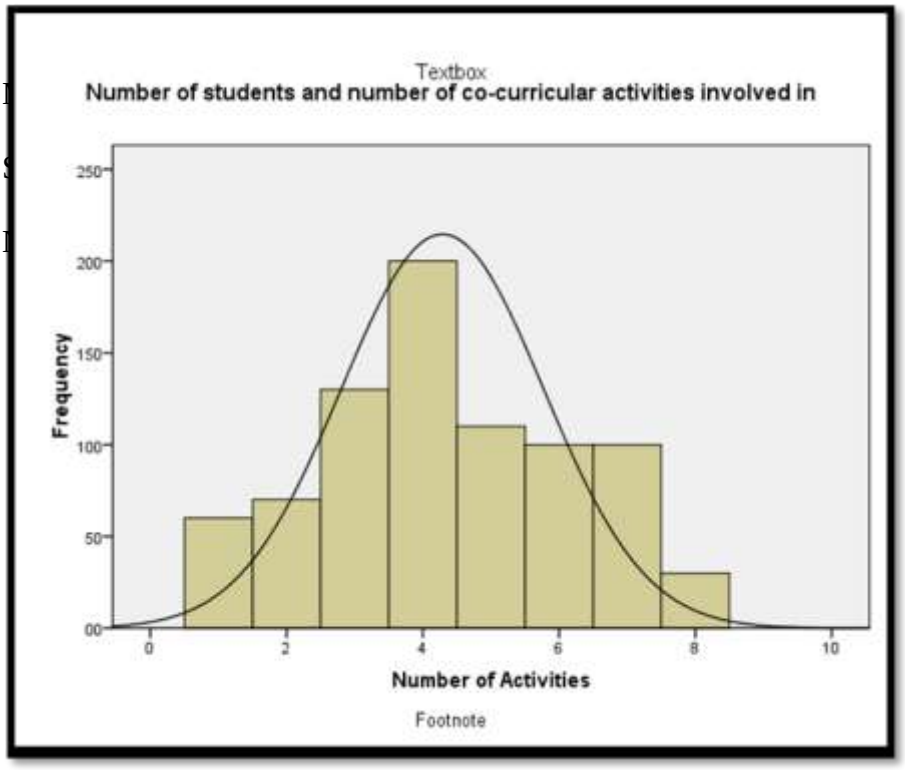

Figure 2: Number of students and co-curricular activities

Figure 2 depicts the continuum of number of activities students were involved. Data revealed that the peak number of co-curricular activities was between 4 and 5. The distribution of the scores is positively skewed (0.062) with most of the co-curricular activities on the higher ranges and the kurtosis was negative (-.720) indicating lighter tails, that is, no extreme outliers. This showed that most students were moderately involved in co-curricular activities.

The first null hypothesis stated that the number of co-curricular activities students participated in did not significantly influence their academic performance. To determine the extent to which the number of co-curricular activities influenced students' academic performance, a regression analysis was conducted. First, the assumptions of the regression analysis were checked for outliers, normality, and homoscedasticity as shown in Figure 2. The distribution of co-curricular activities was centered at 4.35 (SE = 0.532) and was asymmetrical. About 67.7 percent of the students participated in between 4 and 5 co-curricular activities with no extreme outliers. Eighty-two percent of the students fell within the category of average performers (50% -74%), with only 72 (18%) of the students reporting more than 75% average scores. The residuals for the regression model, which include average CAT scores and the number of activities, were approximately normally distributed. Thus, this assumption was not violated. Regarding homoscedasticity, the variability of the number of activities should be similar to the variability of CAT scores. Therefore, the assumption of homoscedasticity was not violated. The results are indicated in Tables 9, 10 and 11.

Table 9: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717[a]	.514	.507	.27128

a. Predictors: (Constant), Number of activities

The model summary shows a positive relationship (R= 0.71) between the number of activities students were involved in and mean scores in CATs. The linear effects of the independent variable explained 51.4 percent variance in the average CAT scores. This implied that the number of co-curricular activities students engaged in per term largely predicted their academic performance.

Table 10: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.067	1	5.067	68.855	.000[a]
	Residual	4.784	65	.074		
	Total	9.851	66			

a. Predictors: (Constant), Number of activities

b. Dependent Variable: Average CAT score

Table 10 shows the test of significance of the model using ANOVA. There were 65 (N-1) degrees of freedom. The regression effect was statistically significant; $F(1, 65) = 68.85$, $p < 0.05$). This indicated that prediction of the dependent variable was not by mere chance. The number of co-curricular activities a student was involved in had an impact on CAT scores.

Table 11: Coefficients of regression model using number of activities

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.624	.102		25.655	.000
	Number of co-curricular activities	-.173	.021	-.717	-8.298	.000

a. Dependent Variable: CAT scores

The regression analysis results in Table 11 determines whether one can predict students CAT scores from the number of activities students were involved in. The regression model for predicting CAT scores was = 2.624 + -.173 (number of activities) indicated that a unit increase in the number of activities would result in a decrease in CAT scores = -.173 (t

(25.65) = -.829, $p < 0.05$). Therefore, as a student got involved in more co-curricular activities, his or her performance in academic work decreased. Participation in many co-curricular activities was detrimental to academic performance. There was a strong and negative influence between number of co-curricular activities and students' academic performance. Therefore, lack of proportionate balance between participation in co-curricular activities and academic work in college was detrimental to good academic performance.

The null hypothesis was rejected. This has the implication of the need for an attitude change towards co-curriculum activities as reflected by Shulruf (2010), who noted that students feel that all that matters in order to be successful in life is academic work. Studies by American Association of Colleges and Universities (2007), point out that the realization of success by students in life requires intellectual resilience, cross-cultural, scientific and technology literacy, ethics, and have a readiness for continuous, cross-disciplinary learning. Such qualities are inculcated through involvement in both formal curricular and co-curricular activities (ibid). The study findings agree with Melnick, Miller, Sabo, Barnes & Farrell (2010), and those reported in Hong Kong by Leung, Ng & Chan (2011) that found negative effects between involvement in co-curricular activities and academic performance. Researchers tend to attribute the undesirable student attainments to little time left for assignments and a lot of time spent on leisure activities (Melnick et al. 2010).

These findings contradict those of Acquah & Anti Partey (2014), who found that the odds of a student passing in economics increased by 19.1 percent as the number of co-curricular activities increased. Ritchie (2018) also found that the regression model for predicting GPA

(GPA = 3.313 + 0.054) showed that a unit increase in co-curricular activities would result in a GPA increase of 0.054 grade points. Other researchers including Ayan et al. (2014), Feldman & Matjasko (2005); Morita et al. (2016), Pellicer-Chenoll et al. (2015), all found that the more physical activities students participated in, the more fit they were and the more likely they were to get good grades. Indeed Storey (2010), found that students who participated in six out of the fifteen co-curricular activities surveyed were statistically significant to the institutional education learning outcomes.

4.6.2 Influence of policy on types of co-curricular activities on students' academic performance

The second hypothesis tested the influence of policy on types of co-curricular activities students engaged in and students' academic performance. To understand the association, students were asked a number of questions including existence of a college policy on types of co-curricular activities, the types of co-curricular activities they participated in and their favourite subjects. In addition, students were requested to rate the extent to which they felt the co-curricular activities enhanced their academic performance in their favourite subjects and the extent to which co-curricular matched with the curriculum offered in the college.

Almost all 356 students (89.0%) indicated that there was no policy restricting them on the types of co-curricular activities that they should choose. However, in the FGD, it emerged that most students participated in ball games and athletics. Ball games were commonly taught during Physical Education lessons. Table 12 presents the number of students who were involve in a particular type of co-curricular activity.

Table 12: Types of co-curricular activities students participated in

Type of co-curricular activity	Frequency	Percent
Subject-based clubs (Maths, Science, Arts)	225	56.3
Leadership clubs (Peer programmes)	110	27.5
Movements (Scouting, CA, CU, Girl guides, YWCA)	320	80.0
Athletics/Sports/ Games	370	92.5
Drama, music, cultural clubs	240	60.0
Special Interest clubs (Comedy etc)	40	10.0
Student governance	135	33.8
Leisure clubs (Mountain climbing, site-seeing)	55	13.8

n = 400

The top three co-curricular activities in which students were mostly engaged in were athletics, sports and games (92.5%), movements such as Scouting, Girl guides, Christian Union, Catholic Action, and Young Women Christian Association (80.0%) and drama, music and cultural clubs (60.0%). The three are common across most educational institutions including primary and secondary schools probably because they require least equipment and are thus cheap to provide.

To further understand the relationship between types of co-curricular activities and academic performance, students opinions were sought on the extent to which they felt that types of co-curricular activities positively affected their studies. Table 13 depicts the study findings.

Table 13: Students' opinions on effects of types of co-curricular activities on academic performance

Response	Frequency	Percent
Big effect	148	37.0
Some effect	104	26.0
Little effect	143	35.7
No effect	5	1.3
Total	**400**	**100.0**

Findings in Table 13 show that students were divided on their opinions about effects of co-curricular activities. Almost an equal number of students felt that the types of co-curricular activities they were engaged in had a big positive effect (37.0%) and little positive effect (35.7%) on academic performance. Only a paltry (1.3%) felt co-curricular activities had no effects on their college academic performance. These findings agree with the cross tabulation results that showed that involvement in many types of co-curricular activities does not necessarily result into better academic performance.

To clearly understand the students' views on the effects of types of co-curricular activities, students were requested to tick from a given list, other benefits (other than academic), which they had gained from involvement in co-curricular. Students' multiple responses appear in Table 14.

Table 14: Benefits of involvement in co-curricular activities

Benefits of co-curricular activities	Responses	
	Frequency	**Percent**
Improved communication ability	235	12.9
Confidence in class and out-of-class presentations	290	15.9
Acquired better time management skills	221	12.1
Improved socialisation skills	335	18.4
Widened horizon and increased knowledge in academics	190	10.4
Developed positive attitudes towards college	250	13.7
Developed leadership skills	230	12.6
Other (concentration, patience, endurance, humbleness)	69	3.8
Total	**1,820**	**100.0**

n= 400

Based on the number of responses in Table 14, it is evident that each student ticked about four types of benefits (1,820/400 = 4.55). Most students said that their socialisation skills had improved (18.4%); they had gained confidence in class and out-of-class presentations (15.9%); and they had developed positive attitudes towards college (13.7%) in that decreasing order of magnitude. During the interviews with College Principals and Games Tutors, it was evident that other benefits besides improvement in academic works were enjoyed by students who took part in various types of co-curricular activities. One of the College Principals said:

> Co-curricular activities assist students to hone other essential skills that may not be presented during classroom learning… For instance, members of the debating club get the opportunity to improve language skills like proper word pronunciation, learn to logically organise ideas and improve their other oratory skills. They also gain confidence to speak in front of others during morning parades. In addition, it helps them to use proper language in examinations …

In addition, a Games Tutor elaborated.

> Talents emerge from schools and colleges. In colleges students have a golden opportunity to nature their talents. We offer many sports and games and I would say our facilities are good. In the classroom, learners concentrate in growing their

> intellect while in the field an opportunity is available to learn other life skills. Co-curricular will eventually aid students to adjust in work environments and get an edge in acquiring more opportunities that are not necessarily based on academic performance.

These findings are consistent with Larson, Hansen, & Moneta (2006), who observe that school-related co-curriculum activities like sports for leisure were found to provide opportunities for initiative, emotional growth, goal setting, persistence, problem solving and time management. Gilman (2004), observes that structured extra-curricular activities are a strategy that schools use to build in students resilience, support desirable social-behaviour, avail opportunities for involvement in school-related activities, and enhance academic performance. In addition, structured co-curricular activities assist in creating a sense of belonging in and with the school (ibid). A similar opinion was advanced by Mahoney et al. (2005), found that during adolescence, pupils who got involved in structured extra-curricular activities had opportunities for social, emotional, and civic development.

To find out the relationship between the types of co-curricular activities students engaged in and their performance in academics, students ticked options from a given list of responses. This was necessary because a number of studies have shown that academic outcomes may vary depending on the type of co-curricular activity (Asaba, 2015).The analysis resulted in multiple responses. To compare types of co-curricular activities that the students were engaged in, and the academic performance, a cross tabulation was performed. The results appear in Table 15.

Table 15: Relationship between type of co-curricular activity and academic performance

Type of co-curricular		Average CAT score		
		75%-100%	50%-74%	Total
Subject-based clubs (Mathematics, Science, Arts and Craft, etc)	Count	45	180	225
	% within type co-curricular	20.0%	80.0%	
	% within CAT score	14.9%	8.1%	
	% of Total	3.0%	12.0%	15.0%
Leadership clubs (Peer programmes, etc)	Count	12	98	110
	% within type co-curricular	10.9%	89.1%	
	% within CAT score	3.9%	10.7%	
	% of Total	0.8%	6.6%	7.4%
Movements (Scouts, Guides, YMCA/YWCA etc)	Count	71	249	320
	% within type co-curricular	22.2%	77.8%	
	% within CAT score	23.4%	9.4%	
	% of Total	4.7%	16.7%	21.4%
Athletics/Sports/Games	Count	73	297	370
	% within type co-curricular	19.7%	80.3%	
	% within CAT score	24.1%	27.5%	
	% of Total	4.9%	19.8%	24.7%
Drama/Music/Cultural clubs	Count	66	174	240
	% within type co-curricular	27.5%	72.5%	
	% within CAT score	21.8%	19.5%	
	% of Total	4.4%	11.7%	16.1%
Special interest clubs (Comedy etc)	Count	6	34	40
	% within type co-curricular	15.0%	85.0%	
	% within CAT score	2.0%	4.0%	
	% of Total	0.4%	2.3%	2.7%
Student governance groups	Count	25	110	135
	% within type co-curricular	18.5%	81.5%	
	% within CAT score	8.3%	12.1%	
	% of Total	1.7%	7.3%	9.0%
Leissure clubs (Mountain climbing, site seeing, etc)	Count	5	50	55
	% within type co-curricular	9.1%	90.9%	
	% within CAT score	1.6%	6.7%	
	% of Total	0.3%	3.4%	3.7%
	Count	**303**	**1192**	**1495**
	% of Total	**20.3%**	**79.7%**	**100.0%**

Table 15 indicates that students ticked 1,495 responses which showed that on average each student participated in about 4(3.8) co-curricular activities. Most students (340/1495 = 24.7%) who participated in athletics, games and sports fell within the category of high performers (73/303 = 24.1%). The findings were in line with Mungai (2012), whose argument that educational experiences that involve physical activities improve student learning and motivation, enhances brain function, improves recall and engages students in the learning process. Thinguri (2013), also reported that athletes were more likely to hold higher educational aspirations and higher social standing than non-athletes were. In addition, Chudgar et al. (2015), found that students who participated in sports were more likely to have an average GPA of 3.0 or higher out of a scale of 4.00 compared to non-participants. Fredricks and Eccles (2008), observe that although co-curricular benefits differed by type of activity and context, participation in organized activities were nevertheless correlated with higher grades, school engagement, high self-esteem, resilience, and pro-social peers. This has the implication that co-curricular activities are indeed a critical component in enhancing desirable outcomes in terms of performance.

Following in number of high performers were the students who participated in movements (71/303 = 23.4%) and drama, music and cultural clubs (66/303 = 21.8%). These findings confirm those of Schaben (2002), who found positive relationship between involvement in music and academic performance. Similarly, Harrison (2003), found that academic scores were higher for students who studied music, especially in mathematics. Marais (2011), found that in Ohio State, students who played musical instruments in schools outperformed others who did not play in subjects like mathematics, citizenship, science and reading.

Indeed Rahel (2012), opined that concentration and hard work required for one to succeed in music develops self-discipline and influences success both in school and out of school.

Out of the total multiple responses 303(20.3%) students who had an average CAT score of between 75% and 100%, more than a half (14.0%) participated in athletics, games and sports (4.9%); movements (4.7%); and drama, music and cultural clubs (4.4%). It followed that activities that attracted more students also had more benefits that were academic related. These results show that the types of co-curricular activities offered by the college administration were positively related to student academic performance.

On the students' participation in co-curricular activities, research by Wasal and Mohammad (2014), clearly established that students are not given enough time and opportunity to take part in co-curricular activities. This was confirmed by more than three quarters of the respondents who took part in the study. On the flip side, the study show that co-curricular facilities are insufficient to facilitate proper development of co-curricular talents among the students in many of the colleges.

To test the hypothesis that "the policy on types of co-curricular activities has no influence on students' academic performance", a Chi-square test of independence was performed. The results are presented in Table 16.

Table 16: Influence of types of co-curricular activities on academic performance

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.503[a]	14	.000
Likelihood Ratio	.855	14	.000
Linear-by-Linear Association	.035	1	.000
N of Valid Cases	400		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 18.

Results in Table 16 of the chi-square test of independence showed a strong significant relationship between types of co-curricular activities a student participated in and their performance in CATs in public Primary Teachers Training Colleges (χ^2 (2) > .503, *df* = 14, $p = 0.05$). The null hypothesis that 'There is no significant influence between policy on types of co-curricular activities a student should take and academic performance' was rejected. This implied that a statistically significant relationship exists between policy on types of co-curricular activities a student should participate and academic performance. The findings agree with Astin (2001), that point out that involvement in co-curricular activities is advantageous to students' overall educational experience. Miller Sadker and Zittleman (2010), observes that co-curricular activities provide learners with 'a less formal setting' than the classroom that may provide opportunities for learners to develop personal and social skills. The personal and social skills thus developed help in developing positive relationships with peers, teachers and school to become 'lifelong learners'(ibid). A study conducted in India revealed that in schools that had more co-curricular activities, children performed better, especially in mathematics (Chudgar, Chandra, Iyengar & Shanker, 2015). The study findings are congruent with Storey (2010), which found that students who

participated in 6 out of the 15 co-curricular activities surveyed were statistically significant to the institutional education learning outcomes.

4.6.3 Influence of policy on time spent on co-curricular activities and students' academic performance

The second objective further sought to determine the influence on time spent on co-curricular and academic performance in public Primary Teachers Training Colleges in Kenya. College administrators often specify the time in terms of hours that students spend on co-curricular activities per week in addition to time of day and specific days when students engage in co-curricular activities. The duration in terms of hours a student spends at co-curricular activities is a fundamental components of Astin's Theory of Involvement. According to Astin, involvement is measured both qualitatively and quantitatively. Quantitatively, involvement is measured by calculating number of hours a student spends on an activity. In this study, time scales were labelled as "0" hours = none; "1-10" hours = moderate; "11-20" = heavy; and "over 20 hours" = excessive. This theory emphasises student effort and investment of energy in the achievement of the desired learning and development and provides strong evidence for the value of co-curricular activities (Astin, 1999).

All students (100.0%) said that they spent their free time on co-curricular activities after class on weekdays. During the FGD, students revealed that some of them engaged in sports early in the morning as they pleased. There were no restrictions on participation over the weekends. An activity like watching TV had no set time. Students visited TV rooms whenever they were free to watch news, favourite programmes or movies. The results

indicating the mean hours spent on co-curricular activities by students on weekly basis are presented in Table 17.

Table 17: Mean hours students spend on co-curricular activities per week

Number of Hours	Frequency	Percent
0 hours	9	2.25
1 to 10 hours	221	52.25
11 to 20 hours	150	37.50
<20 hours	20	5.10
Total	**400**	**100.0**

Findings in Table 17 indicated that most students 221(52.25%) spent one to ten hours in a week on co-curricular activities. Considering that co-curricular activities are scheduled to take place from 4.00 pm to 6.00 pm on weekdays, the maximum time students can get involved in co-curricular are 10 hours on weekdays. Co-curricular activities also take place over the weekends where students can take unlimited time. The time spent on co-curricular activities over the weekends explained the high number of hours indicated by the students. The findings showed that most students spent their weekends on co-curricular activities in colleges. The findings agree with a study by Abisaki, Mutsotso & Poipoi (2013), on non-formal curricular activities in Mumias Sub-County that revealed that student's access to and participation in non-formal curriculum activities was limited due to unavailability of time among other factors. Astin (1999), in the theory of involvement urges administrators to ensure that the co-curricular activities provided to students are worth their time and educationally beneficial. A follow-up question was posed to the students on how they felt after participating in co-curricular activities. A majority (80.61%) said that they felt

relaxed. Only a handful (16.36%) indicated that they felt tired and exhausted. The findings agree with Ludden (2011), who noted that adolescents who took part in in school and community-based civic activities were found to be more religious, were more academically engaged, and possessed better perceptions towards parents and peers than youth who were not involved in such activities. Ludden (2011), further observed feelings of belonging to school among students engaged in co-curricular activities which was shown to be associated with academic engagement. Cole et al. (2007), asserts that student participation in extracurricular activities is an important aspect of the education experience with research evidence suggesting that student participation in extra-curricular is indicative of competencies that are relevant to the development of a successful business career.

A cross-tabulation was performed between hours spent participating in co-curricular activities per week and performance in internal examinations. The information is indicated on Table 18.

Table 18: Cross tabulation between hours spent on co-curricular activities and performance in CATs

		Number of hours spent on co-curricular activities per week				**Total**
		0	1 -10	11 -20	>20	
Percent mean score in CATs	50% - 74%	8(2.0)	157(39.25	145(36.25)	18(4.5	**328(82.0)**
	75%- 100%	1(0.25)	64 (16.0)	5 (1.25)	2 (0.5)	**72 (18.0)**
Total	**Total**	**9 (2.25)**	**221(55.25)**	**150 (37.5)**	**20(5.0)**	**400(100.0)**

Results in Table 18 indicated that out of the 82 percent of the students who scored between 50 percent and 74 percent, almost half of them 157(39.25%) spent between 1–10 hours per

week participating in co-curricular activities. Similarly, out of the 18 percent of the students who were high performers, 16 percent spent between 1–10 hours per week on co-curricular activities. This shows that students who spent moderate hours on co-curricular activities realised the most academic benefits. Excessive involvement added no value and could even be detrimental to academic achievements. To clearly see the relationships, a multiple line graph was constructed the results of which are presented in Figure 3.

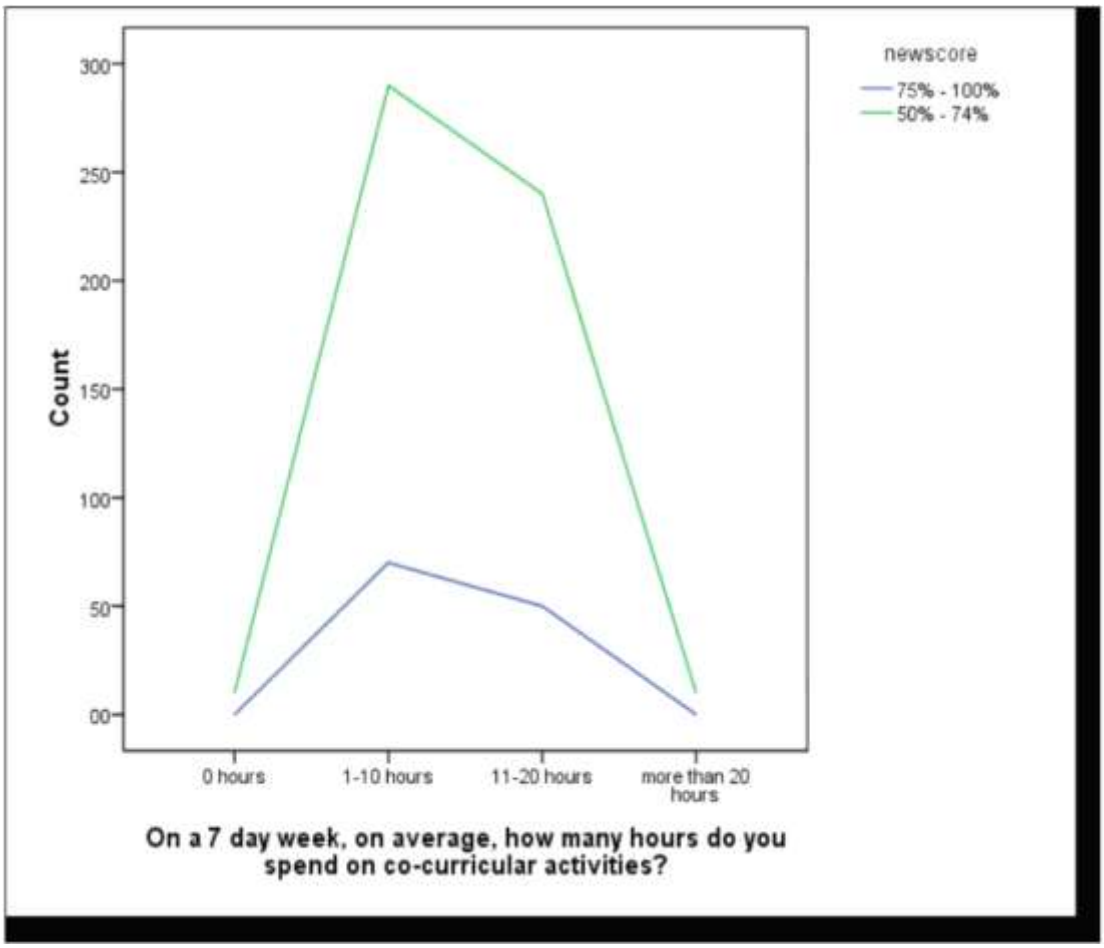

Figure 3: Hours spent on co-curricular activities and academic performance

Figure 3 demonstrates a curvilinear relationship on the trends in the relationships between hours a student spent on co-curricular activities and performance in academics as measured

by average score in CATs. The overall trend of the graph goes to two directions that appear to have a single peak. There was an initial increase in the number of students who scored between 50% - 74%; and 75% - 100% who spent between 1-10 hours on co-curricular activities per week. After this point, the trend was negative. The optimal hours of involvement seems to be between 1 and 10 hours per week. As the number of hours a student spent on co-curricular activities increased, the number of students who scored high marks decreased. The curvilinear trend observed in this study corroborated findings by Cooper *et. al.* (1999), Knifsend & Graham (2012) & Randall & Bohnert (2012), who all found that students benefited optimally from participation in co-curricular activities when they spent moderate hours. Excessive time on co-curricular tended to be detrimental to academic studies. The findings are consistent with Allensworth & Easton (2007) & King (2006), who observe the need for students to exercise caution because spending too much time on co-curricular activities can make one lose focus on the core purpose of education; academic success for a more contented life and career.

Winter et al. (2015), points out that participation in co-curricular may become detrimental where identity with the activity becomes too strong such that it displaces school identity or when time invested is too much that a student is left with little time for academic work.

Students who participated in the FGD had similar sentiments. They felt that one should spend limited time on co-curricular activities and create time for academic assignments. A student in college A precisely articulated:

> Learners should learn about balancing their time so that they can be well balanced emotionally, academically and physically. Too much concentration on co-curricular activities can make one forget about the core business in college – to pass examinations. Again, too much concentration on just books and no time for other co-curricular activities can lead to a non-holistic person.

The findings were similar to those in a number of studies where researchers aver that high intensity activities correlate with increased academic performance Phillips, Hannon & Castelli, (2015) but with excess involvement, benefits start to decrease. Ritchie (2018), found that students who worked for between 1 and 20 hours on campus had the best GPA compared to students who worked off campus between 1 and 20 hours. Students who did not work at all and students who worked for more than 20 hours a week had lower GPA. Kuh et al. (2007), also argued that first year minority students who participated for more than five hours in co-curricular activities recorded a decrease in GPA. Winter et al. (2015), observes that in situations where students were involved in many activities, positive impacts decreased and deleterious effects surface. The involvement in informal extra-curricular activities has been associated with decreased learner performance. Shin (2004), contends that students who watched television for more than 30 hours in a week had negative attitudes towards school and experienced a decrease in their academic work. The findings were corroborated by Kirschner and Bashir (2012), who found that adolescent students who spent more time on Facebook had lower GPA and spent less time on schoolwork.

To test the hypothesis that "there is no significant influence between the hours a student participated in co-curricular activities and students academic performance", a Chi-square test of independence was performed. The results are presented in Table 19.

Table 19: Relationship on hours spent on co-curricular activities and academic performance

	Value	df	Asymp Sig. (2-sided)
Pearson Chi-Square	.503[a]	8	.000
Likelihood Ratio	.855	8	.000
Linear-by-Linear Association	.045	1	.000
N of Valid Cases	400		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 18.

Results in Table 19 of the chi-square test of independence showed that the p value (0.001) was less than the chosen significant level (0.05). Therefore, a strong significant relationship was found between number of hours spent on co-curricular activities and performance in CATs among students in public Primary Teachers Training Colleges (χ^2 (2) > .503, df = 8, p = 0.05). The null hypothesis that 'there is no significant influence between policy on hours spent on co-curricular activities and academic performance' was rejected. This implied that a statistically significant influence exists between policy on time spent on co-curricular activities and students' academic performance. The level of involvement, which is operationalised in terms of hours spent on an activity or the number of activities one is engaged in, has been cited as a mediating factor for involvement that affects students' academic performance (Brown, 2000; Thinguri, 2013) The study findings are consistent with a study by Yaacob et al. (2013), conducted at Purdue University using datasets that

contained information about Purdue students in general and students engaged in sports demonstrated effects of intensive involvement in co-curricular activities and academic performance. The co-curricular programmes examined were those typified by intensive student involvement including frequent lengthy practice sessions and occasional absence from campus. Results showed that students who were heavily engaged in sports were the most satisfied and had higher GPA (3.5) than the other students (3.1) on a scale of 4 (ibid).

4.7 Influence of Co-curricular Facilities and Equipment on Students Academic Performance

The third objective of the study sought to determine the influence of co-curricular facilities and equipment on students' academic performance in public Primary Teachers Training Colleges in Kenya. College administration is cognizant with the fact that research has demonstrated that facilities and equipment have a profound impact on students' outcomes. Students' participation in co-curricular activities is largely influenced by the kind and condition of facilities and equipment available in a college. This in turn, influences the level and performance in academics by students. Colleges have departments dedicated to facilitation of out-of-class activities that are headed usually by a professional who can observe, understand and influence patterns of students' change in behaviour, capabilities, and pre-occupations (Arnold & King, 1997). In general, where resources, equipment, and facilities - trainers; laboratories, track fields, football pitch, auditoriums, music rooms, TV rooms, gymnasiums; balls, nets, pianos, among others - are inadequate, participation in co-curricular activities tends to be low. Conversely, where facilities and equipment are available, motivated students will willfully participate in a variety of co-curricular activities. The many and innovative co-curricular activities available to learners stimulate

their curiosity, imagination and critical thinking; skills that they need in their academic work. Administrators should thus provide co-curricular and facilities and equipment in adequate numbers and maintain them in shape.

4.7.1 Adequacy of co-curricular facilities and equipment

The researcher sought to know whether the requisite co-curricular facilities were available in colleges; and all study respondents answered in the affirmative. They indicated that they had track fields, football and volley pitches and entertainment rooms, balls, nets, bats. A follow up question on adequacy elicited the responses tabulated in Table 20.

Table 20: Distribution of responses on adequacy of requisite co-curricular facilities

Response	**Category of Respondent**					
	Principals		**Games Masters**		**Students**	
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Yes	5	62.5	6	66.7	240	60.0
No	3	37.5	3	33.3	160	40.0
Total	**8**	**100.0**	**9**	**100.0**	**400**	**100.0**

Data in Table 4.19 shows that a substantial percentage of principals (37.5%), games tutors (36.3%) and students (40.0%) felt that though their colleges had the requisite co-curricular facilities and equipments, they were insufficient. These findings corroborate those of Abisaki, Mutsotso and Poipoi (2013); Christopher and Gabriel (2017); Kisango (2016); Omae, Onderi and Mwebi (2017); who all found inadequate co-curricular facilities and equipment in various educational institutions.

During the face-to-face interviews with the principals and games tutors; and the students' FGD, it emerged that co-curricular facilities were inadequate. However, it was observed that these inadequacies varied from college to college based on the location of the college. The seriously lacking facilities and equipment were those related to swimming, tie kudos, rugby, softball and tug-of-war.

4.7.2 Students' Satisfaction with Condition of co-curricular facilities and equipment

The researcher presented to students a list of what he felt were the most common co-curricular facilities in colleges and requested them to indicate how satisfied they were with the condition of the facilities and equipment and their influence on academic achievement. At the minimum, college administration should provide a facilities and equipments that are comfortable to use, safe, secure, accessible, well illuminated, well ventilated, and aesthetically pleasing. Table 21 indicates the students' responses. The students used the following key to rate their feelings with regard to the condition of the facilities and equipment.

4	Very satisfied	=	Good as new, no defects, comfortable, aesthetic, performing as expected
3	Satisfied	=	Minor defects, good condition, performing as intended
2	Moderately Satisfied	=	Minor defects, moderate condition, can still be used under supervision
1	Dissatisfied	=	Major defects, not performing at expected service level, risky to use

Table 21: Students' responses on condition of co-curricular facilities and equipment

Item	5	4	3	2	1	$\bar{x}$	SD	Decision
Track field	99	152	79	70	0	2.70	1.01	Satisfied
Music room	89	179	96	36	0	2.81	0.89	Satisfied
Netball court	135	180	41	38	6	3.01	0.90	Satisfied
Volleyball court	111	177	76	36	0	2.91	0.91	Satisfied
Hockey field	138	148	35	79	0	2.86	1.18	Satisfied
Long jump pit	123	160	57	54	6	2.87	1.03	Satisfied
High jump pit	164	166	36	34	0	3.15	0.91	Satisfied
Javelin	120	190	41	49	0	2.95	0.95	Satisfied
Nets	90	154	100	56	0	2.70	0.97	Satisfied
Balls	63	200	112	25	0	2.75	0.79	Satisfied
Cluster **$\bar{x}$; SD**						**2.87**	**0.93**	**Satisfied**

Table 21 shows that students' ratings ranged from a mean of 2.70 to 3.15 with standard deviations of between 0.79 and 1.18. Overall ratings showed that students were satisfied (M = 2.87; SD 0.93) with the co-curricular facilities available in their colleges; and this improves increases participation in co-curricular, which influences students' academic performance.

The hypothesis that sought to test the level of significant between co-curricular facilities and equipment and students' academic performance was determined using chi- square test of independence at a coefficient alpha (α) equal to 0.05. Students were asked to indicate if the available facilities and equipments influenced their academic performance. The results showed that 251(62.75%) of the students agreed that co-curricular facilities have positive influence on their academic performance in college against 149(37.25%) who disagreed. The results are presented in Table 22.

Table 22: Chi-square test on influence of co-curricular facilities and academic performance

	Value	Df	Asymp. Sig (2 sided)
Pearson Chi-Square	20.464[a]	5	0.0000
Likelihood Ratio	20.507	5	0.0000
Linear-by-Linear Association	.312	2	
No. of valid cases	400		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is .20.

Chi-square test of independence showed that the p value (.01) was less than the chosen significant level (.05). Therefore, association was found between co-curricular facilities and students academic performance (χ^2 (2) > 23.320, df = 5, p = 0.05). The null hypothesis, which stated that there is no significant influence of co-curricular facilities on student academic performance in PTTCs was rejected. This implied that a statistically significant influence exists between co-curricular facilities and learners' academic achievements. They should, therefore, be supplied in the right quantity and quality. The findings are consistent with those by Omae et al. (2017), in Kisii County that observed that inadequate playgrounds were a hindrance to students from participating in co-curricular activities. Omae et al. further noted that slightly over a half (53.7%) of the principals who participated in the study indicated that inadequate playgrounds caused students not to engage in co-curricular activities, while other principals who accounted for 62.5% affirmed that some of the available facilities were dilapidated and not fit for use.

Overall, most participants felt that the insufficient and dilapidated co-curricular facilities could not support development of co-curricular talents and skills in the students (ibid). Mwisukha et al. (2003), noted that one of the major factors affecting operations of

successful development of co-curricular talents among students in Goa was provision of adequate facilities, equipment and supplies. Majority of the schools reported that they did not have the necessary equipment to conduct various indoor games (ibid). Rahel (2012), in a study on factors affecting participation in co-curricular activities and development of students' talent in Addis Ababa observed that co-curricular activities was also affected by presence of inactive clubs in school compounds, and unavailability of adequate budgets. The study findings agree with Naz et al. (2013), who illustrated that physical facilities nurture students' behavioural development and that physical facilities in educational institutions help to reduce depression and pessimism. Appealing facilities and equipments are intergral in increasing self-esteem that is related to students' behaviour including academic performance (ibid).

4.8 Influence of College Administrators Motivation Strategies on Students Academic Performance

The fourth objective of the study sought to assess the influence of motivational strategies used by college administration on students' academic performance in public Primary Teachers Training Colleges in Kenya. Co-curricular activities are implemented as per the stated educational objectives. They constitute activities oriented to learners' interests and needs. Colleges implement them according to agreed upon plans and programmes so that they enhance learners' personality. College administration is instrumental in offering such guidance. College administration use a variety of strategies to motivate students into participating in co-curricular activities. To measure the influence of motivation strategies on student academic performance, a number of items were included in students'

questionnaire and FGD guide. In addition, college principals and games masters gave their views on how motivational strategies influence academic performance.

Motivational strategies may influence learner participation in co-curricular activities. Students rated the extent to which they felt their college principals motivated students to participate in co-curricular activities using a 1–5 Likert scale: 1 = Not at all; 2 = Small extent; 3 = Moderate extent; 4 = Great extent; 5 = Very great extent. Table 23 presents these findings.

Table 23: Students rating of principals' motivation to students

Rating	**Extent college principals motivated learners in co-curricular activities**	
	Frequency	**Percent**
Very great extent	78	19.5
Great extent	200	50.0
To a moderate extent	58	14.5
Some extent	39	9.7
To a small extent	25	6.3
No extent at all	0	0.0
Total	**400**	**100.0**

Half (50%) of the students felt that their college principles motivated students to participate in co-curricular activities to a great extent and 78(19.5%) were of the opinion that they motivated students to a very great extent. Not even one student felt that their college principal did not motivate. These positive ratings showed that college principals supported co-curricular activities as a way of enhancing classroom learning. Pejić-Papak & Vidulin (2011), contends on the need for curriculum activities to be steered by the school principal who is accountable for initiating, coordinating and motivating both learners and teachers to participate enthusiastically. Lazaro & Anney (2016), observed that schools in Tanzania

held different competitions including welcoming form one students, wishing farewell to form four students, inter-dormitories and inter-classes competitions, where winners were given different rewards to motivate them. Muhammad et al .(2012), indicates that although school administrators' motivated students in different forms, some of motivation rewards had no direct impact in developing an individual talent in that particular co-curricular activity, implying that more efforts were academically oriented because most of rewards were for developing students academically. Such rewards were likely to increase students' academic performance (ibid).

During the face-to-face interviews, the College Principals stated that they normally motivated students to engage in co-curricular activities. They also said that they usually set annual budgets to support the co-curricular activities. The Games Tutors added that college administration largely motivated students into engaging in co-curricular activities. One Games Tutor contented:

> My principal challenges students to take up a variety of co-curricular activities. Indeed, he readily provides transport whenever we need to attend competitions outside the colleges. Students who excel in the activities usually get material rewards and this motivates them to participate even more.

Student discussants expressed satisfaction with the way the principals encouraged them to spend their free time on gainful co-curricular activities. students felt they stood to gain a lot from participation. The FGD participants agreed that college life was not just about passing examinations, it was about having fun and gaining new experiences. Some of the students had this to say:

> Here in college, we have a variety of co-curricular activities and the college administration does not limit us to which clubs or sports one should join. When we have athletics, I participate in long distance races. I also play handball and volley

ball. I am also a member of the Christian Union, Drama and Music clubs. This has not affected my performance because I still do well in class. (Student A)

I belong to the Mathematics Club. Last term, as the club leader, I organised a contest in mathematics. The club patron and other mathematics tutors helped us a lot. The principal encouraged us to hold inter-class contests. I would say that the commitment with which we worked translated to good knowledge in mathematics. Personally, I realised a boost in my mathematics performance last term. (Student B)

There is no point being in college and getting a good certificate and no good memories. I will not sacrifice my time. I need to have fun, make friends and create connections. This will make me feel a whole person. (Student C)

As observed by Storey (2010), the co-curricular activities that schools offer enable students to be engaged in many skillful and competitive endeavors. Such activities invite students to absorb and practice virtues necessary in their daily living. Thus, schools offering high levels of activities develop student character.

Students were further asked to indicate the kinds of motivational strategies their principals used to encourage them participate in co-curricular activities. This was a multiple response question and responses are indicated in Table 24.

Table 24: Students' responses on motivation strategies used by principals

Motivation strategy	Response		Percent of cases
	Frequency	Percent	
Introduces interesting and innovative sports/games	256	13.8	64.0
Organises competition and rewards excellence in sports	390	21.2	97.5
Supports co-curricular endeavours; meals, transport to outside college competitions	386	21.0	96.5
Involves students and tutors in planning budget for co-curricular activities	105	5.7	26.3
Arranges and funds for co-curricular facilities	338	18.4	84.5
Engages students and games masters in choosing co-curricular activities for the college	367	19.9	91.2
Total	**1,842**	**100.0**	**460.0**

n = 400

As observed in Table 24, most students ticked about five types of motivational strategies used by their college principals in encouraging participation in co-curricular activities. Most students cited competition and rewards (97.5%); and support such as provision of transport during out of college competitions (96.5%). The only motivational strategy that was rarely used by the principals was involvement students and tutors in planning budget for co-curricular activities (26.3%). Data shows that principals motivated students to participate in co-curricular activities.

Interviews with college Principals and Games Tutors revealed that college administration challenged students to take part in co-curricular activities. The administrators clearly understand academic befits that result from such engagements. As one of the College Principals said:

> In my college, we provide a lot of co-curricular activities designed to develop student talents and boost their academic grades. The students receive honors, awards and scholarships, which are sponsored by different clubs and community sectors especially if they represent the college at national levels. Many become student leaders and sometimes become proficient in music, theatre, dancing, football and athletics. The students benefited much because of the innovative and interesting activities presented to them by the college.

Another Games Tutor from another college said:

> When students are allowed to choose the games to play, they become motivated. Most students look forward even for the inter-class and inter-house competitions. I teach English to several classes and I have noted that some of my good students are also the ones who are active in the field. Maybe they exert the same energy in their books …

Additionally, a Chi-square test of goodness of fit was conducted to find out if some motivational strategies were more potent than others were. The Chi-square results are illustrated in Table 25.

Table 25: Chi-square test on potency of motivating strategies

	Motivation strategies and students participation in co-curricular activities
Chi-Square	14.217[a]
Df	2
Asymp. Sig.	.001

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 46.0.

The results of the chi-square test of goodness of fit (χ^2 (2) > 14.217, p = 0.001) showed that the p value (0.001) was less than the chosen significant level (0.05). The results, therefore, indicated that some motivation strategies were more significant than others in driving students to participate in co-curricular activities. The findings agree with Lazaro and Anney (2016), who observed that most of the time, students were rewarded academic materials such as exercise books, pens, pencils to motivate them to participate in co-curricular activities in addition to certificates of excellence for their achievements either in academics or co-curricular activities. The findings are consistent with a study by Muhammad et al. (2012), who pointed out three reasons why students should participate in co-curricular activities namely to prepare learners for the future life, expose learners to wide range of experiences where they will study, live and work once they leave school, and provide an excellent opportunity to discover new meaning of life.

Further exploration revealed that the motivation strategies used by principals were related to student academic performance. This was confirmed through a chi-square test of independence was performed. It was premised that when learners get motivated and spend

their free time on co-curricular, they exert themselves in the tasks and reap academic benefits. The findings are indicated in Table 26.

Table 26: Relationship between motivation strategies and academic performance

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson chi-square	23.320[a]	5	.04
Likelihood ratio	25.832	5	.259
Linear-by-linear association	.316	2	.574
No. of valid cases	400		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is .20.

Results of the chi-square test of independence showed that the p (.04) was not greater than the set level of significance (.05). Therefore, association was found between motivation strategies and students academic performance (χ^2 (2) > 23.320, df = 5, p = 0.04). This implied that a statistically significant influence exists between motivational strategies and learners' academic achievements.

The students were requested to indicate the reasons that greatly motivated them to participate in co-curricular activities. The type of motivation is expected to correlate with involvement in co-curricular activities because those with intrinsic motivation tend to participate more in co-curricular activities and are more committed. Students, therefore, were required to choose only one option from a given list. The responses are as indicate in Table 27.

Table 27: Reasons for students involvement in co-curricular activities

Reason	Frequency	Percent
Because of my friends/to socialise/ have fun/own interest	150	37.5
My principal/games master encourages me	115	28.8
For my future career/for my future education	63	15.7
To support my grades in current courses	72	18.0
Total	**400**	**100.0**

Most students (37.5%) indicated that they participated in co-curricular activities out of personal interest and to have fun and because their principals and games masters encouraged them (28.8%). The rest stated that they participated in co-curricular activities to improve academic work (18.0%) and to build future careers (15.7%). This shows that motivational strategies used by college administration had significant influence on student participation in co-curricular activities. Both intrinsic and extrinsic motivation factors were potent in driving students to participate in co-curricular activities. The finding agree with a report by UNESCO (2005), that recommended the use of rewards for the most active participants to enhance productivity and improved academic performance. School administration should be inviting and creating conducive environment for voluntary participation of students and teachers in co –curricular activities (ibid). Steeves (2014), reported that laissez faire attitude towards co-curricular activities by school administrators led to exclusion of many students from whole college experiences. Therefore, the more students are rewarded, the more they participate in co-curricular activities hence improved grades.

Students were further requested to provide their opinions on the extent they felt that co-curricular activities provided and supported by the college administration matched with the academic curriculum and contributed to attainment of educational objectives. It was theorized that co-curricular activities had a direct impact on students' academic performance. Students' responses are illustrated in Table 28.

Table 28: Matching of co-curricular activities with academic curriculum

Response	**Extent co-curricular activities match with curriculum**	
	Frequency	**Percent**
None match	9	2.2
A few match	83	20.3
Some match	133	33.3
Most match	108	26.8
All match	67	17.4
Total	**400**	**100.0**

As indicated in Table 28 most students (60.1%: 33.3% = some match + 26.8% = most match) were of the opinion that the types of co-curricular activities they engaged in were related to their academic subjects. Only 2.2 percent of the students said there was no relationship between the activities they engaged in and their academic subjects. This implied that, as much as possible, college administration was supporting and motivating students to engage in co-curricular activities that would boost their academic performance. Astin (1999), in his 'Student Involvement Theory' asserts that students learn more when they get involved in all aspects of college life especially when actively involved in student organizations and activities and interacting with his or her faculty. This theory emphasises

student effort and investment of energy in the achievement of the desired learning and development and provides strong evidence for the value of co-curricular activities (ibid).

Another item in the questionnaire requested students whether they felt that the co-curricular activities they were involved in enhanced performance in their favourite subjects**.** A high number answered in the affirmative 359(89.9 %) compared to those who answered in the negative (41 = 10.1%). A chi-square test of goodness of fit were calculated to determine the extent to which students felt that co-curricular activities aided them to improve their performance in their favourite subjects. Table 29 presents the Chi-square results.

Table 29: Relationship between co-curricular activities and favourite subject

	Most favourite subject	**Co-curricular activities improves performance in favourite subject**
Chi-Square	128.609[a]	199.957[b]
Df	11	2
Asymp. Sig.	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 11.5.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 46.0.

Results on chi-square test of goodness of fit (χ^2 (2) > 128.609, p = 0.001) showed that the alpha value (.001) was no more the chosen significant level (0.05). The results, therefore, indicated that the co-curricular activities that students were participating in enhanced performance in their favourite subjects. The findings are consistent with Thinguri (2013), who observed that engagement in co-curricular activities helps students establish a sense of belonging, generate self-motivation and responsibility and institutes self-discipline

through commitment and hardwork ethics. Studies by Fredrick & Eccles (2005), noted that students who participated in sports reported stronger feelings of belonging than those who were involved in arts and academic clubs. Chudgar et al. (2015), found that students who participated in sports were more likely to have an average GPA of 3.0 or higher out of a scale of 4.00 compared to non-participants. Similarly, Marsh & Kleitman (2002), found that students who spent more time on sports and other structured activities and less time on television watching scored higher grades in their studies.

During the face-to-face interviews, the College Principals stated that they had annual budgets to support co-curricular activities and they used many motivation strategies to encourage their learners to participate. The most common form of motivation across all colleges was inter-house tournaments.

4.9 Predictive Power of Institution-Based Co-Curricular Factors on Students' Academic Performance

The last hypothesis tested the relative contribution of the co-curricular factors on student academic performance. Multiple regression analysis showed the predictor variables that greatly influenced learners' academic performance. Data were presented in a model summary to show strength of correlation and percentage variability in the dependent variable as accounted for by the independent variables. Tables 30, 31 and 32 present the data.

Table 30: Model summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.702[a]	.493	.477	.272

a. Predictors: (Constant), Co-curricular activities-related factors)

The model summary shows a positive relationship, R= 0.70, between the predictor variables and CAT mean scores. The combined linear effects of the predictor variables explained 49.3 % variance in CAT mean scores. This implied that students' CAT scores were moderately predicted by the three determinants.

Table 31: ANOVA for regression model

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	4.520	5	2.260	30.637	.000[a]
	Residual	4.647	83	.074		
	Total	**9.167**	**88**			

a. Predictors: (Constant), Co-curricular policies on type, time and number, facilities and equipment, motivation strategies

b. Dependent Variable: Average CAT scores

Table 31 shows the test of significance of the model using ANOVA. There were 88 degrees of freedom with five predictor variables. The regression effect was statistically significant; F (3, 86) = 30.64, p = 0.05). This indicated that prediction of the dependent variable was not by mere chance.

Table 32: Multiple regression analysis of the predictor variables

Model	Unstandardized Coefficients		Standardized Coefficients		
1	B	Std. Error	Beta	t	Sig.
(Constant)	2.339	170		13.777	.000
Policy on time spent on co-curricular activities	-.316	.040	-.710	.7.798	.000
Policy on number of co-curricular activities	-.122	.061	-.181	-.1990	.003
Policy on type of co-curricular activities	.054	.005	.318	10.431	.000
Facilities/equipment	.021	.010	.120	1.988	0.04
College administrators' motivation strategies	.013	.004	.247	3.730	.000

a. Dependent Variable: Average CAT scores

As observed earlier in Table 32, a significant percent of the variance in CAT scores could be accounted for by the 5 independent variables together. All the predictor variables were significantly related to the CAT scores; F (5, 86) = 30.64, p = 0.05). In Table 32, number of co-curricular activities (ß = -.71, p = 0.05) and number of hours spent per week on co-curricular activities (ß = -.18, p = 0.05) had significant negative contribution to students' academic performance. This indicated that one standard deviation in increase in number of co-curricular activities and an additional one hour on co-curricular activities led to a -.71 and -.18 standard deviation decrease in CAT scores respectively.

The negative contributions were probably because when students engage in many co-curricular activities, they spend more time on them and their attention is likely to be diverted from academic work. This would be unlike when a learner were intensely involved in one co-curricular activity. However, the policy on types of co-curricular activities that students were expected to participate in had a significant positive influence on students'

academic performance (ß = .32, p = 0.05). A unit increase in a co-curricular activity related to formal curriculum would increase the CAT marks by .32 standard deviation.

Availability, adequacy and condition of the co-curricular facilities and equipment had a positive influence on academic performance (ß = .12, p =0.05). One standard deviation increase in quality and quantity of co-curricular facilities and equipment would result to a .12 standard deviation increase in CAT scores. Similarly, motivational strategies had positive and significant influence on students academic performance ($\beta = .24$, $p<0.05$). An additional motivational strategy would result to .24 standard deviation increase in students CAT scores.

Looking at the unstandardized beta, institution-related co-curricular factors that contributed most to student academic performance were time spent on co-curricular activities (ß = -.316, p = 0.05) and type of activities that students engaged in (ß = .054, p = 0.05). When students spent a lot of time on co-curricular activities, their performance in class decreased. This is probably due to little time dedicated to revision and writing of assignments. The types of co-curricular activities made positive contributions, that is, when students chose many activities related to formal curricular, a boost was realised in their academic performance.

4.10 Chapter Summary

This chapter contains the analysis of the qualitative and quantitative data collected to examine the influence of institution-based co-curricular factors on students' academic performance. The chapter contains demographics information of the study respondents. Collectively, the results revealed the variables under study had a significant influence on student academic performance. Excessive involvement in co-curricular activities was detrimental to students' performance in academics.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The aim of this study was to investigate the influence of institution-based co-curricular factors on student academic performance in public Primary Teacher Training Colleges. Data was collected using a semi-structured questionnaire, focus group discussion guide, and an interview guide targeting 11 colleges, 440 students, 11 principals and 11 games tutors. This chapter presents the findings of this study in a summary form as well as the conclusions. Recommendations for policy making and for further research also falls under this chapter. The study employed the following objectives in order to achieve the purpose of the study: -

a) To establish the types of co-curricular activities college administration offer to students in public Primary Teacher Training Colleges in Kenya.
b) To determine the extent to which college co-curricular policies influence students' academic performance in public Primary Teachers Training Colleges in Kenya..
c) To determine the influence of co-curricular facilities and equipment on students' academic performance in public Primary Teachers Training Colleges in Kenya.
d) To assess the influence of motivational strategies used by college administration on students' academic performance in public Primary Teachers Training Colleges in Kenya.
e) To determine the predictive power of the institution-based co-curricular factors on students' academic performance in public Primary Teachers Training Colleges in Kenya.

5.2 Summary of the Study

This section is organised according to the research objectives of this study. The summary is discussed with a view of making conclusions for the study. The aim of this study was to determine the influence of the management of institution-based co-curricular activities on students' academic performance in public primary teachers training colleges in Kenya as measured by the mean grade obtained in internal Continuous Assessment Tests. The CATs contribute 30% to the final aggregate mark in the final examinations given by KNEC.

The researcher answered one research question and tested five null hypotheses. The research question was to investigate what institution-based co-curricular management factors influence students' academic performance in public Primary Teachers Training Colleges in Kenya

The five null hypotheses tested the influence of types of co-curricular activities on college students' academic performance; influence of co-curricular policies on college students' academic performance; influence of co-curricular facilities and equipment on college students' academic performance; influence of motivational strategies used by college administrators on college students' academic performance; and influence of predictive power of institutional based co-curricular factors on college students' academic performance.

Literature related to the study variables is thematically presented in Chapter Two of the study. The findings emanating from the reviewed literature provided conceptual and theoretical frameworks and directions for investigating the study. Both qualitative and quantitative research paradigms were employed in the conduct of the study. Specifically, a

cross-sectional correlation survey design was used to gain a holistic understanding on the influence of institution-related co-curricular factors on academic performance. Ethical measures for the use of human respondents were assumed by voluntary consent to participate in the study by the respondents.

The public PTTCs provided the profiles of the target population; 11 Principals, 11 Games Tutors and 440 students who filled out questionnaires and another 88 students who participated in focus group discussions. Multi-stage cluster random sampling techniques, systematic sampling and purposive sampling methods were utilised to select the study participants. Data were collected using anonymous self-administered semi-structured questionnaires, individual student data sheet, face-to-face interviews guides and focus group discussion guides.

Data collected were analysed using descriptive statistics such as percentages, frequencies, means, standard deviations, skewness, kurtosis and cross tabulations. An examination of the percentage of students who participated in the co-curricular activities offered by the colleges revealed that nearly all (99.75%) of the students participated in co-curricular activities; an indication that students understand benefits of co-curricular activities. Results revealed that some types of co-curricular activities were positively associated with academic performance while others were not. About a quarter of the students (24.7%) participated in athletics, games and sports and majority fell within the category of high academic performers.

The number of hours that students were involved in co-curricular activities provided evidence that depending on amount of time a student spent on co-curricular activities, the effects could be positive or negative. Most students (52.25%) were involved in co-curricular activities for between 1-10 hours a week. A curvilinear relationship was observed on the trends in the relationships between hours a student spent on co-curricular activities and performance in academics. The optimal hours of involvement were between 1 and 10 hours per week. As the number of hours on co-curricular activities increased, the number of students who scored high marks decreased. An increase in a number of hours was likely to result to increase in mean CAT scores up to a certain level after which further increase resulted in decrease in performance. Regression analysis affirmed the descriptive results (ß = -.71, p = 0.05). The regression model for predicting CAT scores = 2.624 + -.173 (number of hours) indicated that a unit increase in the number of hours would result in a decrease in CAT scores of -.173 ($t(25.65) = -.829$, $p < 0.05$).

5.2.1 Types of Co-curricular Activities Provided by College Administration

The first objective of the study sought to identify the types of co-curricular activities supported by respective college administrations and those that were available to the students. The study revealed on average students participated in four co-curricular activities per term. Those who participated in many activities tended to score low in CATs. Therefore, there was a strong negative relationship between number of co-curricular activities and academic performance. An increase in number of co-curricular activities (ß = -.18, p = 0.05) had significant negative contribution on students' academic performance. This indicated that one standard deviation in increase in number of co-curricular activities led to -.18 standard deviation decrease in academic performance. The findings indicated

that some types of co-curricular activities contributed more to students' academic performance than others did. Out of the total multiple responses 303(20.3%) students who were categorised as high performers (an average CAT score of 75% and 100%), 14.0 percent participated in athletics, 4.9 percent in games and sports; 4.7 percent in movements; and 4.4 percent in drama, music and cultural clubs. Regression analysis confirmed that the types of co-curricular activities students participated in had a significant positive influence on their academic performance (ß = .32, p = 0.05). A unit increase in a co-curricular activity related to formal curriculum would result in a 0.32 standard deviation increase in CAT scores. The types of co-curricular activities students chose had impact on their academic performance.

5.2.2 Influence of College Co-curricular Policies on Students' Academic Performance

The second objective was determined through two hypotheses that There is no significant influence of college co-curricular policies on students' academic performance. This first part of hypothesis was tested using the chi-square test of independence relationship between types of co-curricular activities a student participated in and their performance in CATs in public Primary Teachers Training Colleges. The findings indicated a strong significant relationship between types of co-curricular activities a student participated in and their performance in CATs in public Primary Teachers Training Colleges ($\chi 2$ (2) > .503, df = 14, p = 0.05). This resulted in the rejection of the null hypothesis. The findings therefore adopted the research hypothesis that there was a statistically significant relationship between types of co-curricular activities a student participated in and their performance in CATs in public Primary Teachers Training Colleges.

The part of the hypothesis that specified the time in terms of hours that students spend on co-curricular activities per week was tested using the chi-square test of independence relationship. The results showed that the p value (0.001) was less than the chosen significant level (0.05). Therefore, a strong significant relationship was found between number of hours spent on co-curricular activities and performance in CATs among students in public Primary Teachers Training Colleges ($\chi 2$ (2) > .503, df = 8, p = 0.05). The null hypothesis that 'there is no significant influence between policy on hours spent on co-curricular activities and academic performance' was rejected.

5.2.3 Influence of Co-curricular Facilities and Equipment on Students Academic Performance'

The third objective was tested through a hypothesis test using chi- square test of independence at a coefficient alpha (α) equal to 0.05 so as to determine the nature of the relationship between co-curricular facilities and students' academic performance. The findings established association between co-curricular facilities and students' academic performance ($\chi 2$ (2) > 23.320, df = 5, p = 0.05). The findings therefore accepted the research hypothesis that there was a significant influence of co-curricular facilities on student academic performance in PTTCs.

5.2.4 Influence of Motivational Strategies Used by College Administration on Students' Academic Performance

This hypothesis was tested using the square test of independence at a coefficient alpha (α) equal to 0.05. Association was therefore established between motivation strategies and students' academic performance ($\chi 2$ (2) > 23.320, df = 5, p = 0.04). This implied that a

statistically significant influence exists between motivational strategies and learners' academic achievements. Further investigations on the extent to which students felt that co-curricular activities aided them to improve their performance in their favourite subjects was done through the chi-square test of goodness of fit. Results on chi-square test of goodness of fit ($\chi 2$ (2) > 128.609, p = 0.001) showed that the alpha value (.001) was no more the chosen significant level (0.05). The results, therefore, indicated that the co-curricular activities that students were participating in enhanced performance in their favourite subjects.

5.2.5 Predictive Power of Institution-Based Co-Curricular Factors on Students' Academic Performance

The last objective was determined through the null hypothesis that none of the institution-based co-curricular factors has more predictive power than others on students' academic performance in public Primary Teachers Training Colleges. This hypothesis was tested using multiple regression analysis to determine the predictor variables that greatly influenced learners' academic performance. The model summary shows a positive relationship, R= 0.70, between the predictor variables and CAT mean scores. The combined linear effects of the predictor variables explained 49.3 % variance in CAT mean scores. A test of significance of the model using ANOVA indicated 88 degrees of freedom with 5 predictor variables. The regression effect was therefore statistically significant; F (3, 86) = 30.64, p = 0.05) indicating that prediction of the dependent variable was not by mere chance.

Overall, two institution-related co-curricular factors were found to contribute most to student academic performance. One of the factors was time spent on co-curricular activities (ß = -.316, p = 0.05) which when used students spent many hours beyond the optimum was detrimental to academic performance. This is probably due to little time dedicated to revision and writing of assignments. The second was type of co-curricular activity (ß = .054, p = 0.05). This implied that when students were involved in co-curricular activities that were related to the formal curricular, their academic performance improved.

5.3 Conclusions of the Study

The interactions of the study variables showed that the number of co-curricular activities, types of co-curricular activities, hours spent on co-curricular activities, co-curricular facilities, and equipment and administrators' motivational strategies influenced students' academic performance. The regression analysis showed that the number of hours spent on co-curricular activities and the number of co-curricular activities students participates in could explain the probability of a student performing well in academic work. Involvement in many co-curricular activities and spending excessive time on co-curricular activities were detrimental to academic performance. The researcher concluded that college administration offered co-curricular activities that had academic benefits to students; for learners to realise academic success in college, they should balance between involvement in co-curricular activities and academic work. These findings confirm the zero sum theory that involvement in co-curricular activities is only beneficial to a certain extent after which the benefits decrease.

5.4 Recommendations of the Study

Based on the study findings, the researcher made the following recommendations.

1. College administrators at PTTCs need to continue to incorporate co-curricular activities in college programmes. Available literature and this study showed that students who are involved in co-curricular activities are more likely to achieve higher academic scores than students that are not involved in co-curricular activities. This was not true for every student, but it is apparent that there are other benefits of involvement in co-curricular activities other than high scores. This calls for a balanced approach on the modalities of offering co-curricular activities to students for optimal benefits of the learner so as not to negatively affect their academic work.
2. It is important that college administrators consider mechanisms of enhancing the types of co-curricular activities offered in their institutions to broader reach out to the different interests of students. Similarly, policies spelling out the amount of time spent on co-curricular activities should be put in place. This is out of the realization that strong significant relationship between types of co-curricular activities a student participated in and their performance in CATs. Such engagements would help inculcate values of social interactions among students, increased sense of self-worth and reduced discipline problems.
3. College administration should create awareness among students on benefits of particular types of co-curricular activities to assist them chose activities based on not only interest and attitude but also on aptitude. In addition, colleges should

provide state of art co-curricular facilities and equipment to continue attracting learners to co-curricular activities.

4. The subject teachers should encourage students to join subject-based clubs that directly relate to college curriculum. In such clubs, students can extend classroom learning in a more relaxed environment. This would push more students into the 'high performers' bracket.
5. College administrators should draft policies that state the minimum score a student should attain in order to participate in tournaments held outside the college.
6. Colleges can look for sponsors and partnerships with the corporate organisations and business community to fund certain sporting activities while providing necessary facilities and equipments to boost co-curricular activities.
7. College administration should device appropriate motivational strategies that would make co-curricular activities popular among students and hence improve their academic performance.
8. Adequate time should be allocated to co-curricular activities owing to its relevance in improving academic performance as evidenced by the study findings. However, there ought to be logical balance between time spent on classwork and that spent on co-curricular activities.

5.5 Suggestions for Further Research

Based on limitations and delimitations of this study, the researcher suggests that:

1. Researchers may attempt to replicate this study especially in other colleges where students of the same age bracket are found. This is because the scientific community accepts findings only to the extent to which they are replicable. By

replicating this study, researchers may clarify issues raised during analysis or extend generalisability of the results.

2. Longitudinal studies including cohort, panels and tread studies should be done to track the impact of involvement in co-curricular activities on student academic achievements at various levels of education including primary, secondary and tertiary institutions in Kenya.
3. A study may be done to determine the relationship between involvement in co-curricular activities and career path progression of college students. In this, Teachers Training Colleges may consider a longitudinal process of monitoring student participation to determine how co-curricular impacts on students' future careers and opportunities for further education and scholarships. By following students after college to determine if they had career and educational success, and if they had used their skills developed through co-curricular activities, researchers may find out if participation in co-curricular activities provide social-networking opportunities for finding jobs.
4. A qualitative study to solicit information from tutors and students regarding their opinions and observations about how co-curricular activities connects students and staff to colleges would be a worthwhile endeavour.
5. A study on gender, special needs and disabilities issues pertaining to performance for students who participate in co-curricular activities may be an interesting follow-up to all of the studies that have taken place. As educational institutions become inclusive, it is important to make sure that all students are provided with equal access and opportunities in an institution.

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APPENDICES

APPENDIX I: INFORMED CONSENT FORM FOR RESEARCH PARTICIPANTS

I…… agree to participate in this research study.

The purpose and nature of the study has been explained to me in writing.

I state that I am participating voluntarily.

I give permission for my interview with...…… to be tape-recorded if need be.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity.

Signed _____ Date _____

APPENDIX II: QUESTIONNAIRE FOR STUDENTS

Instructions

This questionnaire seeks information on the influence of institution-related co-curricular factors on students academic performance in public Primary Teachers Training Colleges in Kenya. Your careful, complete and honest responses will assist in collecting valid data. The information you give will be used for research purpose only and will not reflect on you as an individual or as a college.

The questionnaire has been designed to enable you answer the items quickly and easily. In answering this questionnaire, bear in mind that this is **not a test**; the only right answers to the questions are those that best explain your situation or express your views. Please answer frankly. Where choices are given; tick the option that matches your answer or write a figure/statement as instructed.

Section One : Demographic Information

1. What is your gender?

   Male [ ] Female [ ]

2. What is your age bracket in years?

   Below 18 [ ] 18 – 22 [ ] 23 - 25 [ ] Over 25 [ ]

3. What is your marital status?

   Single [ ] Married [ ] Separated [ ] Divorced [ ]

4. Indicate your area of specialisation.

   Science option [ ] Arts option [ ]

5. Indicate your religion.

   Christian [ ] Muslim [ ] Hindu [ ] Other (specify) _____

6. Where is your college located?

   Rural [ ] Semi-urban [ ] Urban [ ]

Section Two: Participation in Co-curricular Activities

7. During your time in college, have you participated in any co-curricular activity?

Yes [ ] No [ ]

8. If 'Yes' in (7) above, when did you start participating in co-curricular activities?

During my first year [ ] During my second year [ ]

9. Indicate the co-curricular activities offered in your college.

_____

_____

_____

10. In your college, is there a school policy stating the number of co-curricular activities you should participate in per term?

Yes [ ] No [ ] Do not know [ ]

11. Indicate the average number of co-curricular activities that you participate in per term. _____ Number

12. In your college, is there a policy to guide students on choice on types of co-curricular activities?

Yes [ ] No [ ] Do not know [ ]

13. Which of the following co-curricular activities have you participated in during your college life? (Tick all that apply to you).

Subject-based clubs (Mathematics, Science, Arts and Craft, etc) [ ]

Leadership clubs (Peer programmes, etc) [ ]

Movements (Scouts, Guides, YMCA/YWCA etc) [ ]

Athletics/Sports/Games [ ]

Drama/Music/Cultural clubs [ ]

Special interest clubs (Comedy etc) [ ]

Student governance groups [ ]

Leissure clubs (Mountain climbing, site seeing, etc) [ ]

Other (specify)

_____

_____

_____

14. Indicate the reason that greatly motivates you to participate in co-curricular activities. (Tick only one option)

Motivation indicator	**Response**
Own interest/just for fun	
Because of my friends/ to socialise	
For my future career/ for my future education	
To support my grades in current courses	
My parents/teachers told me to	

15. Indicate two of your most favourite subjects.

a. _____ b. _____

16. Do co-curricular activities that you participate in enhance your performance in your favourite subjects? Yes [ ] No [ ]

17. To what extent do co-curricular activities you participate in match with the college curriculum?

None match [ ] A few match [ ] Some match [ ] Most match [ ] All match [ ]

18. Is there a policy on time and days when students should engage in co-curricular activities?

Yes [ ] No [ ] Do not know [ ]

19. What times of the day should students engage in co-curricular activities? (Tick all that apply to you)

Every day after classes [ ] Every day before classes [ ]

Over the weekend [ ] A few days set aside [ ]

Any other (specify) _____

20. On a 7 day week, on average, how many hours do you spend on co-curricular activities?

0 hours [ ] Below 10 hours [ ] 11 – 20 hours [ ] More than 20 hours [ ]

21. How do you feel after participating in a co-curricular activity?

Satisfied [ ] Relaxed [ ] Tired [ ] Nothing [ ]

22. Who organises the co-curricular activities in your college?

Activities organized by students [ ]

Activities organized by College Administration/Games Department [ ]

Activities organised by students and College Administration [ ]

23. To what extent do you think the types of co-curricular activities that you are involved in have positive effects on your studies?

Big effect [ ] Some effect [ ] Little effect [ ] No effect [ ]

24. What positive effects have you experienced from participating in the various types of co-curricular activities? (Tick all that apply)

Improved communication ability [ ]

Confidence in class and out-of-class presentations [ ]

Acquired better time management skills [ ]

Improved socialisation skills [ ]

Widened horizon and increased knowledge in academics [ ]

Developed positive attitudes towards college [ ]

Developed leadership skills [ ]

Other (specify)_____

25. In your opinion, to what extent does TOO much involvement in co-curricular activities negatively affects performance in academics.

No extent [ ] Small extent [ ] Moderate extent [ ] Large extent [ ]

26. Following are possible reasons why TOO much involvement in co-curricular activities might negatively affect students' performance in academics. Tick all that you think could be possible reasons.

Reason	**Response**
Little time left to write/complete assignments	
Skipping classes when representing college during competitions	
Tired after taking co-curricular activities	
Giving priority to co-curricular activities over academic work	

Any other reason:

_____

_____

27. To what extent does your college principal and games master motivate students to participate in co-curricular activities?

To a very large extent	[ ]	To a large extent	[ ]
To a moderate extent	[ ]	To some extent	[ ]
Not at all	[ ]		

28. What motivational strategies do the college administrators in your college use to enhance student participation in co-curricular activities? Tick all that apply.

Motivation strategy	**Response**
Introduces interesting and innovative sports and games	
Organises competition and rewards excellence in sports	
Supports co-curricular endeavours eg, transport to outside college competitions	

Involves students and tutors in planning for co-curricular activities	
Arranges and funds for co-curricular facilities	
Engages students and tutors in choosing co-curricular activities	

29. Does your college have adequate requisite co-curricular facilities and equipment (track fields, TV rooms, Football pitch, Netball pitch, Volley ball court)?

Yes [ ] No [ ]

30. Using the following key, rate your satisfaction with regard to the condition of the facilities and equipment.

4	Very satisfied	=	Good as new, no defects, comfortable, aesthetic, performing as expected
3	Satisfied	=	Minor defects, good condition, performing as intended
2	Moderately Satisfied	=	Minor defects, moderate condition, can still be used under supervision
1	Dissatisfied	=	Major defects, not performing at expected service level, risky to use

Facility/Equipment	**5**	**4**	**3**	**2**	**1**
Track field					
Music room					
Netball court					
Volleyball court					
Hockey field					
Long jump pit					
High jump pit					
Javelin					
Nets					
Balls					

THANKING YOU FOR PROVIDING USEFUL INFORMATION

APPENDIX III: STUDENT INDIVIDUAL DATA SCORE SHEET

(To be filled in by students)

In the table below, indicate your Continuous Assessment Test scores in the various subjects.

Subject	**Mid course CAT**	**Mock Exams**
Core subjects		
English		
Kiswahili		
Professional studies/Education		
Physical Education (PE)		
ICT		
Option A		
Science		
Home science		
Agriculture		
Mathematics		
Option B		
Music		
Art and Craft		
Social Studies		
Religious Education		

THANKING YOU FOR PROVIDING USEFUL INFORMATION

APPENDIX IV: FOCUS GROUP DISCUSSION GUIDE FOR STUDENTS

Introduction by facilitator

Hello, my name is […]. Thank you for coming for this discussion. I would like to hear from you how you have benefited from participating in co-curricular activities. During this FGD, I will facilitate a conversation about how involvement in co-curricular might help you achieve your academic goals. I hope you will be comfortable speaking honestly and sharing your ideas with me. Please, I would like to tape the discussion so that I capture all your thoughts, opinions, and ideas. No names will be attached to the discussions and the tapes will be destroyed as soon as they are transcribed. This discussion will last about 30 minutes. Do you have any questions before we start?

Getting started

Do a quick round of introductions. *Send the Sign-In Sheet with a few demographic questions (age, gender, and year in college) around to the group.*

Ground rules

- Everyone should participate
- All experiences are equally valid; everyone's views should be heard and be respected and information provided must be kept within this room
- Stay with the group and please do not have side conversations
- Turn off cell phones if possible
- Speak in turns, loudly and clearly

Turn on tape recorder

Make sure to give people time to think before answering questions and do not move too quickly. Use the probes to make sure that all issues are addressed, but move on when you feel you are starting to hear repetitive information.

Questions

Start the discussion by talking about what makes the college a good place.

1. What types of co-curricular activities are available in this college?
2. How many do you participate in?

For Question 1 and 2, probe for quality of co-curricular activities provided by college in the following areas:

- Relevance to college curriculum

- Relatedness to subjects specialisation
- College policy on types, time and number one should participate in

3. In your opinion, do students who participate in many co-curricular activities perform well in class?

Probes

- How many co-curricular activities would be considered ideal/excessive
- What would be done to balance curriculum and co-curricular activities
- Students' favourite co-curricular activities

4. Do you have adequate co-curricular equipment and facilities?

Probes

- Facilities/equipment for indoor games
- Facilities/equipment for outdoor games
- Their appearance – new, refurbished, neglected, dilapidated

4. What are the benefits of involving oneself in co-curricular activities?

Probes:

- Academic benefits
- Social benefits including leadership skills
- Emotional benefits

5. In general, does the college administration encourage you to participate in co-curricular activities?

- What strategies does the principal and games master use to encourage students to participate in co-curricular activities?

6. What are your overall experiences for your involvement in co-curricular activities provided in your college?

That concludes our discussion. Thank you so much for coming and sharing your thoughts and opinions with me.

APPENDIX V: INTERVIEW GUIDE FOR GAMES TUTORS

Introduction

This is a visit to familiarize with factors related to co-curricular activities that students participate in and their influence on students' academic performance. It is not an evaluation of you as the one in-charge of games and sports or for the college. I would like to get a realistic picture of the co-curricular activities offered in the college. To achieve this, I have a number of specific questions that I would like us to discuss.

Section A: Background Information

1. How long have you been a games master in this college? _____ (years)

2. Does the college have adequate space and facilities for students to carry out co-curricular activities?

Probe: *Ball games pitches*

Athletics fields

Facilities for indoor games

3. In your college, how would you describe the co-curricular facilities?

Probe: *Would you say they motivate students to participate in co-curricular?*

4. Does the college have a culture of excelling at co-curricular activities?

Probe: *Co-curricular activities the college excels at*

Recent trophies acquired and in which co-curricular activities

Section B: Involvement in Co-curricular Activities

5. How many types of co-curricular activities does your college offer to the students? Please name them.

6. Are there policies in the college to ensure that students are able to participate in co-curricular activities and at the same time succeed in academic work?

Probe: *Time set aside before/after class hours*

Specific days for co-curricular

Minimum/maximum number of activities per student in a term

Requirements for those taking part in sports, games etc like acquiring a certain grade in class work

7. How would you describe the academic performance of students who participate in co-curricular activities?

8. In your college, do you have a budget for co-curricular activities? Is it adequate? Are students required to pay for co-curricular activities?

9. Do you encourage students to participate in co-curricular activities?

Probe: *Why do you encourage them?*

What strategies do you use?

10. In your view, do you think involvement in co-curricular activities improves students' performance? What other benefits do students acquire?

THANK YOU FOR TAKING TIME TO SHARE INFORMATION WITH ME

APPENDIX VI: INTERVIEW GUIDE FOR COLLEGE PRINCIPALS

Introduction

This is a visit to familiarize with factors that influence student participation in co-curricular activities and academic performance. It is not an evaluation of you as the one in-charge of the college. I would like to get a realistic picture of the co-curricular activities offered in the college. To achieve this, I have a number of questions that I would like us to discuss.

Section A: Background Information

1. How long have you been a Principal in this college? _____ (years)

2. Does the college have adequate space, facilities and equipment for students to carry out co-curricular activities?

Probe: *Ball games pitches*
Athletics fields
Facilities for indoor games

3. In your college, how would you describe the co-curricular facilities?

Probe: *Would you say they motivate students to participate in co-curricular?*

4. Does the college have a culture of excelling at co-curricular activities?

Probe: *Co-curricular activities the college excels at*
Recent trophies acquired and at what level

Section B: Involvement in Co-curricular Activities

5. How many types of co-curricular activities does your college offer to the students? Please name them.

6. Are there policies in the college to ensure that students participate in co-curricular activities and at the same time succeed in academic work?

Probe: *Time set aside before/after class hours*
Specific days for co-curricular activities
Minimum/maximum number of activities per student in a term
Requirements for those taking part in sports, games etc like acquiring a certain grade in class work

7. How would you describe the academic performance of students who participate in co-curricular activities?

8. In your college, do you have a budget for co-curricular activities? Is it adequate? Are students required to pay for co-curricular activities?

9. Do you encourage students to participate in co-curricular activities?

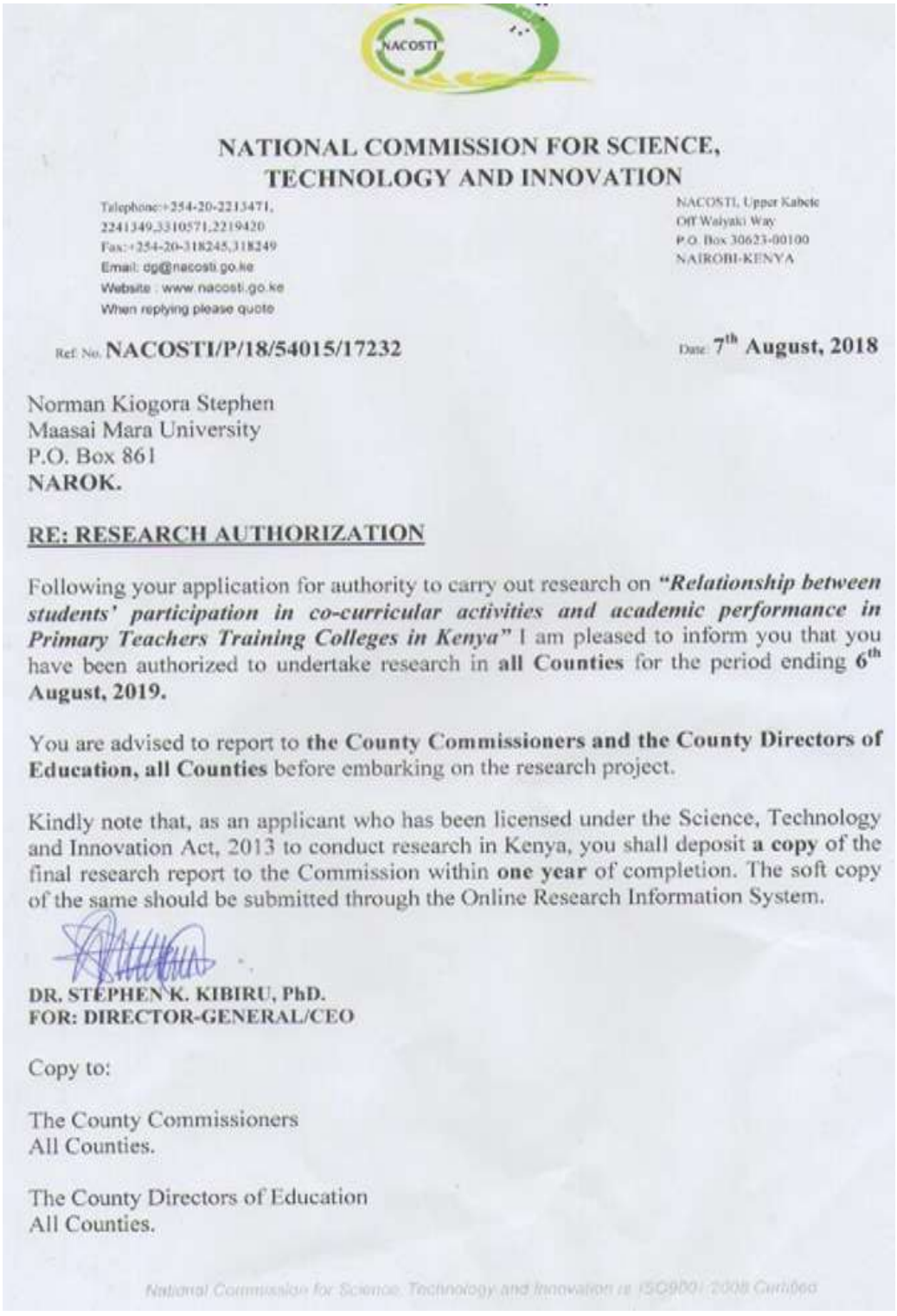
Probe: *Why do you encourage them?*

What strategies do you use?

10. In your view, do you think involvement in co-curricular activities improves students' performance? What other benefits do students acquire?

THANK YOU FOR TAKING TIME TO SHARE INFORMATION WITH ME

APPENDIX VII: RESEARCH PERMIT



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Ref. No. **NACOSTI/P/18/54015/17232**

Date: **7th August, 2018**

Norman Kiogora Stephen
Maasai Mara University
P.O. Box 861
NAROK.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Relationship between students' participation in co-curricular activities and academic performance in Primary Teachers Training Colleges in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **all Counties** for the period ending **6th August, 2019.**

You are advised to report to **the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

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

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioners
All Counties.

The County Directors of Education
All Counties.

National Commission for Science, Technology and Innovation is ISO9001: 2008 Certified

APPENDIX VIII: PUBLIC PRIMARY TEACHERS TRAINING COLLEGES IN KENYA

S. No.	Name	Region
1.	Baringo Teachers Training College	Rift Valley
2.	Mosoriot Teachers Training College	Rift Valley
3.	Kericho Teachers Training College	Rift Valley
4.	Tambach Teachers Training College	Rift Valley
5.	Narok Teachers Training College	Rift Valley
6.	Moi- Baringo Teachers Training College	Rift Valley
7.	Kamwenja Teachers Training College	Central
8.	Kilimambogo Teachers Training College	Central
9.	Murang'a Teachers Training College	Central
10.	Thogoto Teachers Training College	Central
11.	Abanderes Teachers Training College	Central
12.	Egonji Teachers Training College	Eastern
13.	Meru Teachers Training College	Eastern
14.	St, Marks Kigari Teachers Training College	Eastern
15.	Machakos Teachers Training College	Eastern
16.	Kitui Teachers Training College	Eastern
17.	Shanzu Teachers Training College	Coast
18.	Garrisa Teachers Training College	North Eastern
19.	Bondo Teachers Training College	Nyanza
20.	Asubi Teachers Training College	Nyanza
21.	Migori Teachers Training College	Nyanza
22.	Kaimosi Teachers Training College	Western
23.	Eregi Teachers Training College	Western
24.	Trans Nzoia Teachers Training College	Western
25.	Kenyenya Teachers college	Nyanza