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COLLEGE POLICIES ON PARTICIPATION IN CO-CURRICULAR ACTIVITIES AND STUDENTS ACADEMIC PERFORMANCE AT PUBLIC TEACHERS TRAINING COLLEGES IN KENYA

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ABSTRACT

The core business of educational institutions is to deliver educational excellence to learners so that they fit in the world of work. The purpose of this study was to investigate the extent to which college policies on participation in co-curricular activities influence students' academic performance at public Primary Teachers Training Colleges in Kenya. Specifically, the researcher determined the influence of policies on number of co-curricular activities, time spent on co-curricular activities and types of co-curricular activities students participated in on academic performance. The study employed cross-sectional correlational survey designs. The target population was 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 prior to the study. Using multi-stage cluster random sampling techniques, systematic and purposive sampling methods, a sample of 11 colleges, 440 students, 11 principals and 11 games masters was selected. Data were collected through semi-structured questionnaires, focus group

discussion guides, and interview guides. Data were analysed through descriptive and inferential statistics. Results showed that all students participated in co-curricular activities. Policy on number of co-curricular activities had strong negative influence on students' academic performance; the more co-curricular activities students participated in, the more they were likely to get lower scores. Policy on time spent on co-curricular activities had strong negative influence on academic performance with ten hours on co-curricular activities being the ideal time; students who spent moderate hours on co-curricular activities improved their academic scores while excessive involvement lowered academic performance. Policy on types of co-curricular activities had a strong positive influence on academic performance. Students who participated in co-curricular activities related to core curricular had higher scores. Factors that contributed most to student academic performance were time and types of activities. One recommendation was that colleges should implement strict policies on number of co-curricular activities a student should undertake per term and guide them on selection of types of co-curricular activities.

Key words: *Participation in co-curricular, number of co-curricular activities, types of co-curricular activities, time on co-curricular activities, academic performance, Teacher Training Colleges*

INTRODUCTION

To prepare college students for the world of work, and to enable them practice what they learn in colleges, transactional experiences should be availed to them during college life. Indeed research demonstrates that students' success is greatly determined by what students do during their stay in college than by the types of colleges they attend (Kuh, Kinzie, Schu, Whitt & Associates, 2010). Co-curricular activities offer students transactional expediencies that pure classroom learning may not present. During co-curricular activities, students integrate knowledge and skills learned in classrooms to develop and hone personal qualities that are difficult to teach in the classroom. This reinforces classroom learning, which in turn contributes to higher academic performance (Singer, Hausenblas & Janelle, 2001). Research shows that educational administrators are interested in finding out the relationship between academic performance and participation in co-curricular activities. Therefore, they generate policies that support participation in co-curricular activities.

Co-curricular activities are an integral part of the education system. They comprise of activities that are consistent with educational objectives but are not offered for credit toward students' graduation (Bartkus, Nemelka & Phil Gardner, 2012). They include sports, games, clubs, movements, athletics, music, drama, and symposiums (Acquah & Anti Partey, 2014; MoE, 2015). The activities occur outside the regular class hours either inside or outside the college, but they have common features including regular meetings, emphasis on skill development, goal orientation, positive interaction with peers, supervision and leadership of a competent adult (Darling, 2005).

Research shows that students acquire many benefits from participating in co-curricular activities that are both academic and developmental (Feldman & Matjasko, 2012; Shulruf, 2010). Gilman (2004) observed that schools use structured extra-curricular activities to build resilience and support desirable social-behavior among students. In addition, schools use extra-curricular to avail opportunities for involvement in school-related activities, to enhance students' academic performance and to assist in creating a sense of belonging in and with the school. Similarly, Mahoney, Larson, Eccles and Lord (2005) aver that during adolescence, pupils who get involved in structured extra-curricular activities have opportunities for social, emotional, and civic development. School-related co-curriculum activities like sports also provide opportunities for initiative, emotional growth, goal setting, persistence, problem solving and time management (Larson, Hansen, & Moneta, 2006). Co-curricular activities provide learners with 'a less formal setting' than the classroom which is ideal for developing personal and social

skills (Fullarton, 2002). The personal and social skills gained help in developing positive relationships with peers, teachers and school. When students bond with the school environment, the bonding influences their academic accomplishments.

Today, there is substantial concern on how students spend their leisure time inside and outside educational institutions. 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. In Kenya, the Physical Education Guidelines for Kenyan schools and Primary Teachers Training Colleges recommend that children and young adults should engage in at least one Physical Education lesson in a week. Schools and colleges also provide other opportunities for students to participate in co-curricular activities either before or after class hours.

Colleges develop policies to guide in creating a balance between participation in co-curricular activities and completing academic assignments. Some colleges restrict students in terms of number of co-curricular activities a student should participate in per term while others just state the minimum requirements. Still others leave students free to choose to participate. According to Kuh et al (2010), about 80 percent of college students engage in at least one type of co-curricular activity: cultural, social, political, communication, athletics, religious, academic. Sadkar and Zittleman (2010) found that at least one out of four students participated in academic clubs. In another study, Acquah and Anti Partey (2014) reported that in Ghana, 51.3 percent of senior high school students taking economics were engaged in co-curricular activities. In Kenya, Ongonga, Okwalla and Okero (2010) revealed that almost all Kenyan students had ever participated in some kind of organized co-curricular activity.

Stephen and Schaben (2002) 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 particularly 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. In another study, Stencil (2005) found that multiple sport athletes had the highest GPA. Ayan, Carral and Montero (2014) and Ritchie (2018) found that the more physical activities students participated in, the more fit they were and the more likely they were to get good academic grades. Storey (2010) found that grades of students who participated in 6 out of 15 co-curricular activities surveyed were higher. Koivusilta, Nupponen, and Rimpela (2011) 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.

On the contrary, some studies report that participation in multiple co-curricular activities is antithetical to the benefits of involvement. Brown (2001) found that students who participated in three activity categories experienced a decline in grades and self-esteem. In addition, Cooley et al. 1995 and MacNeal (1995) 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 are involved in many activities, positive impacts decrease and deleterious effects surface.

College administrators may decide on types of co-curricular activities to avail to students depending on a number of factors such as availability of resources. Co-curricular activities are generally classified 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 (Guest & Schneider, 2003). Other researchers categorise out-of-class activities as either co-curricular (formal) or extra-curricular (informal). Darling, Caldwell and Smith

(2005) concluded that students who participated in co-curricular activities outperformed those who participated in extra-curricular activities.

A study by Esteban-Cornejo, Tejero-Gonzalez, Martinez-Gomez, Del-Campo et al., (2014) 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. Jaakkola, Hillman, Kalaja, Liukkomen (2015) 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 stimulate neural pathways that lead to better cognitive functioning. Chickering and Reisser (1993) 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, Caldwell and Smith (2005) 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; and problem solving and time management skills (Larson, Hansen & Moneta, 2006). Such qualities may help to explain the relationship between co-curricular activities and academic performance (Marsh & Kleitman, 2002). Additionally, Pascarella, Flowers and Whitt (2001) revealed that students who interacted more with their colleagues in both course-related and course-unrelated activities had more cognitive gains. Peer interaction on non-course related matters had substantial net effect gains in understanding the arts and humanities (Pascarella et al., 2001).

Oftentimes, involvement in informal extra-curricular activities is associated with decreased learner performance. Shin (2004) 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. These findings were corroborated by Kirschner and Karpinski (2010) 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 Hofstein and Rosenfield (2006) that examined how various informal science learning opportunities impact on the science education of compulsory school students found that students who participated in informal science clubs were more interested in learning science. Additionally, students who participated in both informal and formal learning tended to have higher cognitive development overall (Hofstein & Rosenfield, 2006).

Several studies have examined how particular co-curricular activities affect students' performance. Results have shown that academic outcomes may vary depending on an activity (Bloomfield & Barber, 2009; Fredrick & Eccles, 2005). Involvement in art-based or social activities produces positive effects. Heath (2001) found that students who participated in dancing learnt skills like patience, problem identification, strategy building and other ways of expressing oneself other than verbal. Hooley (2007) also found that debates promoted critical thinking skills and theatre provided learners with social skills such as cooperation, teamwork and group building (Shosh & Wescoe, 2007). Similarly, 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 (Olszewski, 1998). However, Pascarella et al. (1996) found that men who belonged to social fraternities scored lower in critical thinking, reading and mathematics as well as in composite achievement than the men who were not affiliated. In addition, sorority membership was negatively associated with reading skill and composite measure of achievement.

Many researchers have reported positive influence between music and academic performance. Harris (2007) found positive relationship between involvement in music and academic performance. Fitzpatrick (2006) reported

that students who played musical instruments outperformed those who did not in subjects like mathematics, citizenship, science and reading. Kelstrom (1998) also found that top performing schools had music as an integral part of their co-curricular. Indeed Hodges and Luehresen (2010) opined that concentration and hardwork that is required for one to succeed in music develops self-discipline and influences success both in school and out of school. Turner (2010) adds that involvement in music and drama help in development of problem-solving and analytical skills among learners. College administrators encourage students to participate in service-based clubs that give back to the community. These activities include community oriented services (visiting the elderly,); church oriented (Church choir); and movements like scouting; societies like Young Men Christian Associations among others. Such activities inculcate values like involved and caring citizenship; and increased student engagement, increased student achievement, increased sense of self-worth and reduced discipline problems (Antrop-Gonzalez, Velenz & Garrett, 2003; Zhao, 2005).

Lynott (2008) opine that educational experiences that involve physical activities improve student learning and motivation, enhances brain function, improves recall, engages students in the learning process, improves 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 classroom settings (Bailey, 2006). Physical activities like sports provide an environment where students are able to develop strong identifications with school, establish a sense of belonging, generate self-motivation and responsibility, build self-discipline through commitment and hardwork ethics and improve academic performance (Macaluso, 2013; Marsh & Kleitman, 2002; and Merkel, 2013). Contrary to these positive benefits, Kreager (2007) found that students who participated in sports were more likely to be involved in delinquency than non-participants were. Broh (2002) also posits that involvement in some co-curricular activities decreases learner's academic achievement. Indeed studies report negative behaviour among students who participate in athletics (Branch, 2003; Brown, 2001).

Colleges usually set aside time for co-curricular activities, which could be before class hours, after class hours or over the weekends. The level of involvement, which is operationalised in terms of hours or number of activities one is engaged in, is frequently cited as a mediating factor for involvement that affects students' academic performance (Brown, 2001). The initial study conducted by Pace in 1970s on student involvement and impact of college environment on learning demonstrated that learning is a function of the amount of time and quality of efforts that learners devoted to educational experiences (Pace, 1984). The study laid a basis for Astin (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 (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 team-mates 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.

Some research demonstrates that the more involved a student is in co-curricular activities, the more benefits he/she is likely to reap. High intensity activities correlate with increased academic performance (Ayan et al., 2014; Phillips, Hannon & Castelli, 2015; Ritchie, 2018). 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 (Adler & Adler, 1994). Muhammad, Tahir, Ali and Iqra (2012) also found a strong association between watching television and the academic performance of students.

However, some studies show that involvement in co-curricular activities is useful upto a certain point after which the returns diminish. Pike, Kuh and Massa-McKinley (2008) found that students who worked for between 1 and 20 hours on campus had the best GPA amongst 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. Similarly, Cooper, Valentine, Nye and Lindsay (1999) found a positive curvilinear trend between involvement in co-curricular and academic achievements. At the optimum participation, achievement scores declined greatly. These findings were corroborated by Knifsend and Graham (2012) who too found that 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. Conversely, students who spent a lot of time on co-curricular activities had difficulties fitting with other students and determining where they belonged with their peers. Randall and Bohnert (2012) reported a threshold effect between participation in co-curricular activities and students' psychological and social development. Similarly, a study by Kuh, Kinzie, Cruce, Shoup and Gonyea (2007) provided evidence that involvement in co-curricular activities may cause a decrease in academic performance. However, Stephen and Schaben (2002) argue that principals are interested in the relationship between academic performance and interscholastic sports, therefore, sports impact on academic performance are necessary; and by extension, all co-curricular activities.

Null Hypotheses

The following hypotheses were tested in the study:

HO₁ Policy on number of co-curricular activities students participate in per term has no influence on students' academic performance at public Primary Teachers Training Colleges in Kenya.

HO₂ Policy on time spent on co-curricular activities has no influence on students' academic performance at public Primary Teachers Training Colleges in Kenya.

HO₃ Policy on types of co-curricular activities offered in colleges has no influence on students' academic performance at public Primary Teachers Training Colleges in Kenya.

Theoretical Framework

Three interrelated theories that complement each other guided the current study in determining if policies on participation in co-curricular activities influence students' academic performance. The three are; Astin's Involvement Theory, Zero-Sum Theory and Threshold Theory. Astin (1996/1999) in Student Involvement Theory argues 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 five tenets: involvement refers to the investment of physical and psychological energy in various objects; involvement is unique to each student with each student putting different degrees of effort; and involvement can be measured qualitatively and quantitatively. In addition, Astin assumes that students' academic or personal outcomes are directly proportional to the quality and quantity of their involvement in that activity; and effectiveness of any educational policy or practice is directly associated with the capacity of that policy or practice to increase student involvement. Student Involvement Theory emphasizes the need for students' efforts and investment of energy in order to achieve desired learning outcomes and development. The theory provides strong evidence for the value of

co-curricular activities; more involvement in co-curricular activities means better academic achievement. Astin takes into account student demographics, background, experiences, and environment when explaining this association.

Critics against students' participation in 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. This is generally referred to as the Zero-Sum Theory that arose from Coleman's 1961 seminal work. Coleman averred that participation in co-curricular produces negative effects on academic work because students tend to spend a lot of time on co-curricular activities and little time on academics. Agreeing with Coleman, Buoye (2004) 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. Other researchers who support Coleman's argument posit that time spent on co-curricular should be used on academic endeavours (Marsh & Kleitman, 2002). Indeed, Syafiq, Siti, Abdallah and Sayed (2014) argue that extra-curricular activities add no value to academic pursuits and are harmful to learning achievements.

Proponents of 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. At low and moderate levels of involvement, 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. Vermaas, Willigenburg-van Dijn and Hougt (2009) argued that both positive and negative effects of involvement are dependent on the nature of the activity and the background of the student.

The three theories provided a framework for understanding how participation in co-curricular activities influence academic performance. Students choose the number and types 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.

RESEARCH METHODOLOGY

Research Design

The study adopted cross-sectional correlational survey designs. A cross-sectional design involves a one-time interaction with groups of people to collect information. The cross-sectional survey design was used because the independent variables were present in the participants prior to measuring their association with the dependent variable. In addition, the study could claim associative relationships but not cause-effect. Correlational research design was appropriate to the study for it enabled the researcher to find relationships between variables using a single study population and to find patterns that existed among the variables. Gall, Gall, and Borg (2007) opine 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(s). The design allowed the researcher to quantify, describe and characterize the phenomenon under study. Additionally, the researcher examined the relationships among the variables and determined the strength of the existing relationships.

Target Population

The target population was 9,731 Second Year students in 25 public Teacher Training Colleges that had presented students for Primary Teacher Examinations for at least two years prior to the study, 25 college Principals and 25 Games Masters (Economic Survey, 2017). The colleges were spread in eight administrative regions in Kenya; Central (5), Coast (1), Eastern (5), North Eastern (1), Nyanza (5), North Rift (4), South Rift (1) and Western (3).

Sample Size and Sampling Procedures

Using a Sample Size Calculator, a sample of 370 students was calculated. Multi-stage cluster random sampling techniques were employed to obtain study samples. In stage one, probability proportional to size technique was employed to select colleges from 8 administrative regions ($370/40 = 9.25$). Table 1 presents the number of public PTTCs sampled.

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 number of colleges increased due to rounding off the fractions and in regions 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:

$$\text{Sampling fraction} = n/N \quad (9/25 = 0.36)$$

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

In stage two, 11 Principals and 11 Games Masters of the sampled colleges were purposefully picked. Finally, simple random sampling method with replacement was utilised to select two intact second year classes from each of the 11 colleges; one Science class and another Arts class. Following, 20 students were randomly selected from each class to complete questionnaires. A further 8 students were systematically drawn from second year students who had not participated in filling out the questionnaires for the focus group discussions. In total, 528 students participated in the study, that is, $(40 \times 11^* = 440) + (8 \times 11^* = 88) = 528$ students.

RESULTS

Out of 440 questionnaires distributed to the students, 400 were usable. In addition, 11 focus group discussions (100.0%), 9 (81.8%) and 8 (72.7%) face-to-face interviews were conducted with students, Games Masters and college Principals in that order. The high response rate was partly due to the college context in which the instruments were administered.

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 them fell within the age of 18 to 22 years with a mean of 21.9 ± 1.55 years. Majority (88.8%) were single and ascribed to Christian faith (89.0%). An equal number of students 200 (50.0%) specialised in Science and 200 (50.0%) Art subjects. Six (54.5%) colleges were located in semi-urban areas, 3 (27.3%) in urban areas and 2 (18.2%) in rural areas.

Students Academic Performance

The dependent variable, students' academic performance, was measured using Continuous Assessment Tests (CATs). Primary Teacher Examinations (PTE) are both internal and external. They take three forms; CATs, Teaching Practice and a final examination administered externally by Kenya National Examinations Council. The CATs contribute 30 percent of the total marks while final examinations contribute 70%. College tutors at college level mark the CATs.

Students' overall average CAT score for all subjects that a student was examined in was calculated. The cumulative CAT scores were self-reported. The core comprise of English, Kiswahili, Professional Studies, Physical Education and Information Communication and Technology. 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. Student performance was categorised into three groups: high performance = 75% - 100%; average performance = 50% - 74%; and low performance = less than 50%. Table 2 presents a summary of the average scores.

Table 2: Self-reported average scores in Continuous Assessment Tests

Overall mean percentage marks in CATs	Frequency	Percent
50% - 74%	328	82.0
75% - 100%	72	18.0
Total	400	100.0

Results in Table 2 shows that majority of the students (82.1%) had an average performance of between 50 percent and 74 percent. Only 18 percent of the students were high performers and no student recorded below average scores.

Hypothesis One: Policy on number of co-curricular activities has no influence on students' academic performance

Influence of policy on number of co-curricular activities on students' academic performance was measured using ANOVA and regression analysis. First, students indicated if their respective colleges had a policy on minimum or maximum number of co-curricular activities that each student should get involved in. They also indicated the number of co-curricular activities they participated in per term. The number of activities was collapsed into three categories: 1 - 2 = low activities; 3 - 4 = moderate activities; 5 - 6 = high activities; 7 and above = excessive activities. The results are contained in Table 3.

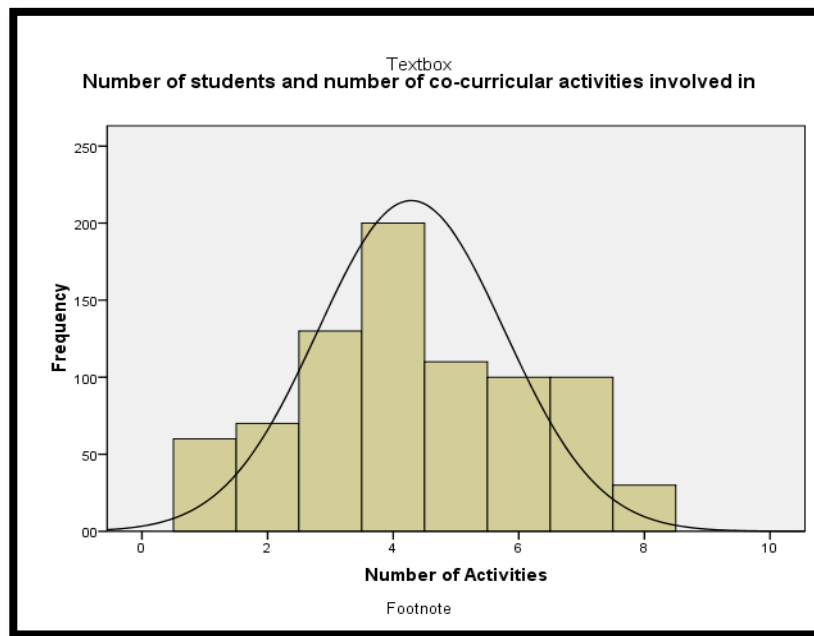
Table 3: Percentage of co-curricular activities students participated in per term

Response	F (%)	Number of co-curricular activities			
		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)				
Total	400 (100.0)				

All students indicated that their colleges did not limit them in the number of activities to participate in and students participated in as many activities as they wished. Most students 165 (41.3%) participated in between 3 and 4 co-curricular activities per term which was an average number. Only a few students 65 (16.2%) engaged excessively in co-curricular activities. The interviewees concurred that students participated in more than one co-curricular activity in a term. One Games Master explained:

Clubs and movements run throughout the college year and students who are members of such clubs 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 1 presents the pattern.



M= 4.35
 Std. Dev. =1.863
 N= 400

Figure 1: Number of students and co-curricular activities

Figure 1 depicts the continuum of number of activities students participated in. The peak number of co-curricular activities was between 4 and 5. The distribution of the scores was positively skewed (0.062) with most of the co-curricular activities on the higher ranges. The kurtosis was negative (-.720) indicating lighter tails and no extreme outliers. This showed that most students were involved in a relatively reasonable number of co-curricular activities.

Test of hypothesis

Regression analysis was used to test the first null hypothesis. First, the assumptions of the regression analysis were checked for outliers, normality, and homoscedasticity as shown in Figure 1. 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. 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. 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. Tables 4, 5 and 6 illustrate the results.

Table 4: 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 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 5: 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

As indicated in Table 5, there were 65 (N-1) degrees of freedom. The regression effect was statistically significant; $F(1, 65) = 68.85, p < 0.001$. 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 6: Coefficients of regression model using number of co-curricular 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 model for predicting CAT scores was $= 2.624 + -.173$ (number of activities) indicating that a unit increase in the number of activities would result in a decrease in CAT scores $= -.173$ ($t(25.65) = -.829, p < 0.001$). Therefore, any additional co-curricular activity a student engaged in meant a decrease in academic performance. This indicated a strong and negative influence between number of co-curricular activities and students' academic performance. Therefore, the null hypothesis was rejected.

These findings contradict those of Acquah and 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, Carral and Montero (2014); Morita et al. (2016); and 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.

Hypothesis Two: Policy on types of co-curricular activities has no influence on students' academic performance

To determine the influence of types of co-curricular activities and academic performance, students responded to a number of questions including existence of college policy on types of co-curricular activities, types of co-curricular activities they participated in and their favourite subjects. In addition, students rated 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 core curriculum. Table 7 presents the results.

Table 7: 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

Most students 356 (89.0%) indicated that there was no policy restricting them on types of co-curricular activities to choose. As shown in Table 7, students mostly engaged in athletics, sports and games (92.5%); movements (80.0%); and drama, music and cultural clubs (60.0%). The three were common probably because they require least equipment and are cheap to provide. During focus group discussions with the students, it became evident that all students participated in ball games and athletics. Ball games was one of the sports taught during Physical Education lessons.

Students rated the extent to which they felt that types of co-curricular activities they participated in positively affected their academic performance. Table 8 depicts the findings.

Table 8: 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

Results in Table 9 shows that almost an equal number of students felt that the types of co-curricular activities they engaged in had a big positive effect (37.0%) or little positive effect (35.7%) on academic performance. Only a paltry (1.3%) felt co-curricular activities had no effects on their academic performance.

To clearly understand the students' views on the effects types of co-curricular activities, students were requested to tick from a given list other benefits which they had gained from involvement in co-curricular. Students' multiple responses appear in Table 9.

Table 9: 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

From Table 9, each student ticked about five 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. These findings were corroborated during interviews with College Principals and Games masters. One College Principals said:

Co-curricular activities assist students to hone essential skills that may not be presented in classroom learning... For instance, members of debating club improve their negotiation skills, learn to logically organise ideas and to improve their oratory skills. They gain confidence to speak during college parades. They learn to socialise easily.

A Games Master elaborated:

Talents usually emerge when students are in schools and colleges. At college, 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 field, they learn life and work skills. Co-curricular will eventually help them to adjust in work environments.

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 (Bloomfield & Barber, 2009; Fredrick & Eccles, 2005). The analysis resulted in multiple responses and results are illustrated in Table 10.

Table 10: Relationship between type of co-curricular activity and academic performance

Type of co-curricular		Average CAT score		Total
		75%-100%	50%-74%	
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%
Leisure 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 10 indicates that students ticked 1,495 responses which means 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 Bailey (2006) and Lynott (2008) argument that educational experiences that involve physical activities improves student learning and motivation, enhances brain function, improves recall and engages students in the learning process. Braddock, Royster, Winfield and Hawkins (1991) and Whitley (1996) also reported that athletes were more likely to hold higher educational aspirations and higher social standing than non-athletes were. In addition, Neish (1996) 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.

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, Harris (2007) found that academic scores were higher for students who studied music. Fitzpatrick (2006) found that students who played musical instruments in schools outperformed others who did not play in subjects like mathematics, citizenship, science and reading. Indeed Hodges and Luehresen (2010) 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.

Out of the 303 (20.3%) students who had an average CAT score of between 75% and 100%, more than half (14.0%) participated in either athletics, games and sports (4.9%); movements (4.7%); or 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 college administration were positively related to student academic performance.

Test of hypothesis

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 11.

Table 11: 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 11 show a strong significant relationship between types of co-curricular activities and percentage scores in CATs ($\chi^2 (2) > .503$, $df = 14$, $p = 0.01$). The null hypothesis that ‘There is no significant influence between policy on types of co-curricular activities students participated in and academic performance’ was rejected. It was established that types of co-curricular activities students participated in influenced their academic performance.

Hypothesis Three: Policy on time spent on co-curricular activities has no influence on students' academic performance

College administrators often specify time for co-curricular activities in terms of hours that students spend on co-curricular activities per week, time of day, and what days. The duration in terms of hours a student spends at co-curricular activities is a fundamental component of Astin's Theory of Involvement. According to Astin, involvement is measured both qualitatively and quantitatively. Quantitatively, involvement is seen in terms of number of hours a student spends on an activity. In this study, time scales were labeled as "0" hours = none; "1-10" hours = moderate; "11-20" = heavy; and "over 20 hours" = excessive.

A cross tabulation was done on number of hours students spent on co-curricular activities and mean scores in CATs. The results are presented in Table 12.

Table 12: Cross tabulation between hours spent on co-curricular activities and CAT scores

			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)	

Findings in Table 12 indicated that most students 221 (52.25%) spent 1 to 10 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. This explained the high number of hours indicated by some students. The findings implied that a good number of students spent their weekends on co-curricular activities within college.

Results in Table 12 further indicate that out of 328 (82%) of the students who scored between 50% and 74%, almost half of them 157 (39.25%) spent between 1 – 10 hours per week on co-curricular activities. Similarly, out of the 72 (18%) of the students who were high performers, 64 (16%) spent between 1 – 10 hours per week on co-curricular activities. This shows that students who spent moderate hours on co-curricular activities realised more academic benefits. Excessive involvement added no value and could even be detrimental to academic achievements.

During focus group discussions, all students (100.0%) said that they spent their free time on co-curricular activities after classes on weekdays and spared some other hours over the weekends. The discussants revealed that some students engaged in sports early in the morning as they pleased and that there were no restrictions on co-curricular participation over the weekends. They also said that an activity like watching television had no scheduled time. Students visited TV rooms whenever they were free to watch news, favourite programmes or movies.

To clearly see the relationships, a multiple line graph was constructed as shown in Figure 2.

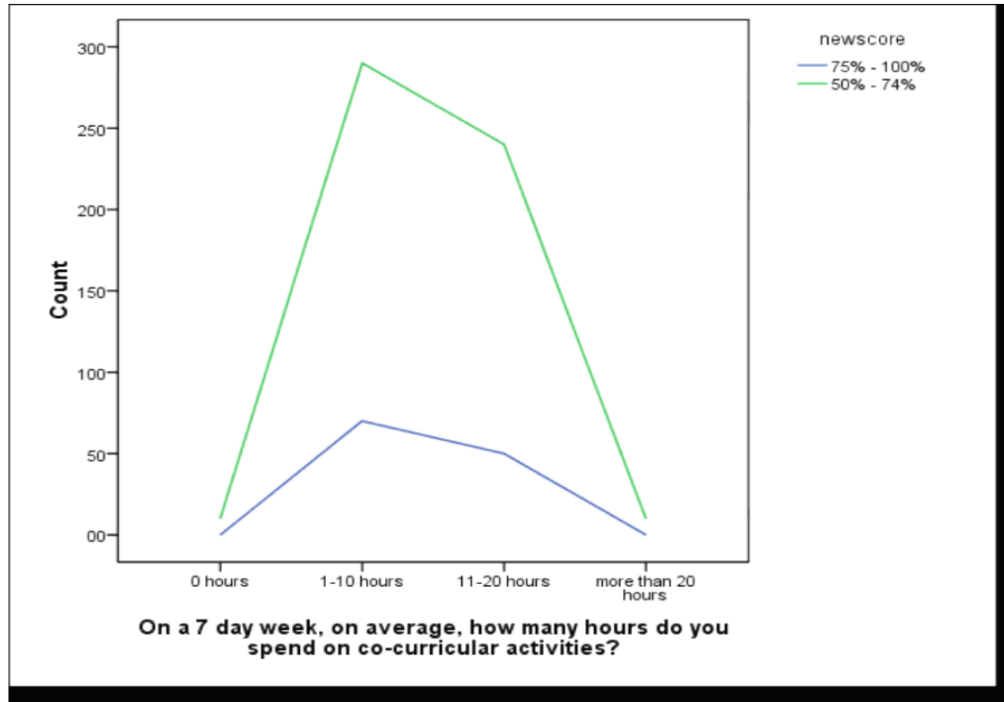


Figure 2: Hours spent on co-curricular activities and academic performance

Figure 2 demonstrates a curvilinear relationship on the trend in the relationships between hours a student spends on co-curricular activities and performance in academics as measured by average CATs scores. The graph goes into two directions that appear to have a single peak. There was an initial increase in number of students who scored between 50% - 74%; and 75% - 100% who spent between 1 and 10 hours on co-curricular activities per week. After the peak, the trend is 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 corroborates findings by Ayan et al. (2014); and Phillips, Hannon and Castelli (2015) who found that students benefited optimally from participation in co-curricular activities when they spent moderate hours.

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 one college precisely articulated:

Learners should learn to balance their time so that they can be balanced emotionally, academically and physically. Too much concentration on co-curricular activities can make one forget about what brought them to the college. Again, too much concentration on books and no time for co-curricular activities can lead to a non-holistic person.

Test of hypothesis

To test the hypothesis that 'Policy on hours spent on co-curricular activities has no influence on students academic performance', a Chi-square test of independence was performed. The results are presented in Table 13.

Table 13: 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 13 shows a strong significant relationship between number of hours spent on co-curricular activities and performance in CATs among students ($\chi^2(2) > .503$, $df = 8$, $p = 0.01$). The null hypothesis was rejected. Policy on time spent on co-curricular activities had significant relationship with students' academic performance.

Relative Contributions of Study Variables to Academic Performance

Multiple regression analysis was conducted to show the variables that greatly influenced learners' academic performance. Data are presented in a model summary to show strength of correlation and percentage variability in the dependent variable as accounted for by the independent variables in Table 14.

Table 14: Multiple regression analysis of the predictor variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
(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

In Table 14, number of co-curricular activities ($\beta = -.71$, $p = .001$) and number of hours spent per week on co-curricular activities ($\beta = -.18$, $p = .003$) 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, their attention is diverted from academic work. Policy on types of co-curricular activities had a significant positive influence on students' academic performance ($\beta = .32$, $p = .001$). A unit increase in a co-curricular activity related to formal curriculum would increase the CAT mark by 0.32 standard deviations.

Unstandardized beta results show that hours spent on co-curricular activities ($\beta = -.316$, $p = .001$) and types of activities ($\beta = .054$, $p = .001$) had the greatest contributions to students academic performance. When students spent a lot of time on co-curricular activities, their performance in class decreased; and when students chose activities related to formal curricular, academic performance increased.

CONCLUSION

The interactions of the study variables showed that number of co-curricular activities, types of co-curricular activities, and hours spent on co-curricular activities influenced students' academic performance. The regression analysis showed that moderate time spent on co-curricular activities and reasonable number of co-curricular activities were beneficial to a students' academic performance. 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. These findings confirm the zero sum theory that involvement in co-curricular activities is only beneficial to a certain extent after which benefits decrease.

RECOMMENDATIONS

Based on the conclusions reached at, the following recommendations were made:

1. College administrators should draft policies that state the minimum score a student should attain in order to participate in tournaments held outside college.
2. College administrators should come up with strict policies stating the maximum and the minimum number of co-curricular activities a student should participate in per term. This may help in bringing balance between core curricular and co-curricular activities for optimal benefits to the learner.
3. 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.

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