

Influence of participation in sports on academic performance among students in public secondary schools in Imenti North Sub-County, Meru County, Kenya

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Cite this article in APA

Shem, E. N., Limukii, K., Muriiki, S., & Riungu, N. (2023). Influence of participation in sports on academic performance among students in public secondary schools in Imenti North Sub-County, Meru County, Kenya. *Journal of education and learning*, 2(1), 96-111. <https://doi.org/10.51317/jel.v2i1.372>



A publication of Editon Consortium Publishing (online)

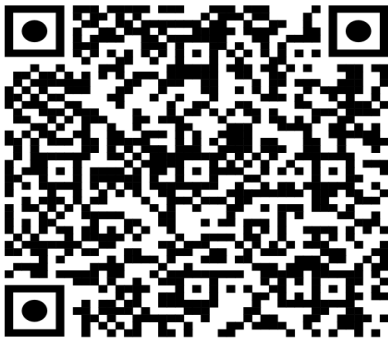
Article history

Received: 17.05.2023

Accepted: 15.06.2023

Published: 14.07.2023

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Abstract

This study sought to examine the influence of sporting activities on academic performance among students in public secondary schools in Imenti North Sub-County, Meru County, Kenya. This study employed a descriptive research design. Fifteen schools were identified in the study using stratified sampling based on the zones. The sample size comprised 15 class teachers, 15 games masters, 15 principals and 225 from three students. Data was obtained through structured questionnaires, oral interviews, and primary and secondary sources to ensure the reliability and validity of the study. Twenty-two from three students from two public secondary schools in Buuri Sub-County were used for the pre-test, which was approximately (10%) of the sample size. After the data was collected, it was sorted, cleaned and coded. Subsequently, the data was keyed into Statistical Package for Social Sciences (Version 27) for processing. Descriptive and inferential statistics were utilised in data analysis. The study established that there was a significant influence of sporting activities on academic performance in public secondary schools. The study concluded that students' involvement in sporting activities had a positive influence on their academic performance among public secondary schools in Imenti North Sub-County, Meru County, Kenya. The study recommends that school administrators should invest in games and enlighten students on the benefits of engaging in sports. Moreover, policymakers should look for measures to encourage students to engage in sports to better attendance rates, lower dropout rates, and improve academic performance.

Key terms: Academic, Influence, Participation, Performance, Sports.

INTRODUCTION

Kane and Spradley (2017) define sports as activities that involve physical actions and skills where an individual or team competes against opponents mainly for entertainment. Citing this definition, there are many sports available in and out of school, including; athletics such as jumping, running, and throwing; indoor sports such as badminton and table tennis; outdoor games such as rugby, soccer, and basketball; and physical education exercises such as aerobics and yoga.

This study focused on understanding the influence of students' involvement in sporting activities on academic performance in Imenti North Sub-County, Meru County. According to the Basic education statistical booklet (2019), few students participate in any form of sport in the schools from this region. Most parents believe that sports participation is a waste of time and that students should only concentrate on in-class activities (Agnes, 2011). Therefore, this study examined how sporting activities influence the academic performance of schools in Imenti North Sub-County, Meru, Kenya.

LITERATURE REVIEW

Many schools pay more importance to academic activities to the detriment of other activities, such as sports and physical education. According to Weeldenburg et al. (2020), physical education may be defined as the programs created to cater to the physical skills of the learners based on their age, skill level, and unique needs. In most cases, physical education involves at least 90 minutes of physical activity per week (Weeldenburg et al., 2020). Singh et al. (2019) observes that many children are affected by obesity and diseases such as diabetes due to inadequate physical activity.

Many schools are reducing time for physical education in favour of academic activities such as teaching math and sciences. In Kenya, some teachers use the time allocated for physical activities to advance the syllabus (Onyancha, 2018). Arguments by Singh et al. (2019) prove that these institutions are mistaken to reduce the instructional time for physical education since there is adequate evidence to suggest that it contributes to academic excellence. Physical

education improves the physical, social, emotional, and cognitive areas of learning; thus, it improves academic performance.

Many Kenyan schools participate in sporting activities organised by the government as well as others internally. According to Kamau et al. (2020), the Kenyan curriculum aims at providing a holistic curriculum that develops a child mentally, physically, socially, and morally to fit in. These researchers claim that these aims can only be attained through curricular and co-curricular activities such as sports. However, as explained by Wanjau et al. (2017), sports participation among Kenyan secondary school students is frustrated by parents who view these activities as a waste of time. Many parents pressure teachers and administrators to increase class time and reduce the time for co-curricular and extra-curricular activities. Obondo (2020) further states that sports budgets in most Kenyan schools are limited in favour of other items such as books. Moreover, sports time is substituted with remedial classes, which explains why many students do not participate in sports in the country.

In Imenti North Sub-county, there are 48 secondary schools in the region, but only a few of these schools are featured in regional and national sports tournaments. These figures reveal that many students in the region do not participate in sports and other physical education activities, which may have major implications on their academic performance (MoE, 2019). Notably, limited research exists to explain how sports participation affects school attendance in Meru County; hence, these reasons justify why this research would be essential for policymakers and educators. Therefore, this study investigated the students' participation in sports and their influence on academic performance in the Imenti North sub-county, Meru County, Kenya.

RESULTS AND DISCUSSION

Influence of Sporting Activities on Academic Performance

The study sought to examine the influence of sporting activities on academic performance in public secondary schools. Descriptive and inferential statistics were utilised to answer the research

question corresponding to this objective. Firstly, the students, class teachers', games teachers' and principals' perception of the influence of sports on academic performance was sought. Besides, a paired t-test was performed to examine the difference in academic performance for the participants between the period when they were engaged in sports and post Covid19 break when there were no sports in school.

Students' Perception of the Influence of Sports on Academic Performance

Students' perception of the influence of sports on academic performance was examined using ten parameters captured in item nineteen of the students' questionnaire. Item 19(i) of the students' questionnaire sought to establish whether sports activities played a good role in the life of high school students. As shown in Table 1, the majority of the participants (91.1%) agreed, while (8.9%) were not sure and thus gave a neutral response. These results suggest that in the opinion of the students' participants, sports activities played a good role in the life of high school students. None of the participants held a divergent opinion. These results are in line with the finding of Patil (2020), who asserted that physically active students are (20%) more likely than sedentary students to gain top scores in math, science, and English. Item 19(ii) of the students' questionnaire sought to establish whether there was a link between participation in sports and performance in education. Slightly higher than two-thirds of the participants (69.0%) agreed, (15.8%) gave a neutral response, and (15.3%) disagreed. These results imply that, in the opinion of the students' participants, there was a link between participation in sports and performance in education. Only less than a fifth of the participants held a differing opinion. These results are in line with the finding of Evariste and Andala (2020), who noted that sports contributed to better learning outcomes and concluded that sporting activities are essential for academic development.

Item 19(iii) of the students' questionnaire sought to establish whether sports in high school positively influenced the education of students. Nearly nine-fifths of the participants (88.7%) agreed, and (11.3%) were not sure and thus gave a neutral response. These results signify that, in the opinion of the students'

participants, sports in high school positively influenced the education of students.

None of the participants held a contrary opinion. These results agree well with the finding of Ally (2020), who stated that in Tanzania, sports participation improved the grades of form four students in evaluated schools in Dodoma. Item 19(iv) of the students' questionnaire sought to establish whether sports in high school improved the mental development of students. Interestingly, all the participants (100.0%) agreed. These results signify that, in the opinion of the students' participants, sports in high school improved the mental development of students. None of the participants held a contrary opinion. These results are in harmony with the findings of Mahalakshmi et al. (2020), who concluded that physical activity boosts cognitive functions by increasing blood flow to the brain and the secretion of norepinephrine and endorphins, which foster new nerve creation and synaptic plasticity.

In regard to 19(v) of the students' questionnaire, the participants were asked whether sports activities are very useful and helpful in enhancing the academic mission of students. Nearly three-quarters of the participants (70.0%) agreed, (23.6%) gave a neutral response, and (6.4%) disagreed. These results imply that, in the opinion of the students' participants, sports activities were very useful and helpful in enhancing the academic mission of students. Only less than a tenth of the participants held a divergent opinion. These results are in line with the finding of Valkenborghs et al. (2019), who concluded that routine attentiveness during games makes the students more attentive in the classroom, which contributes to better academic attainments. Item 19(vi) of the students' questionnaire sought to establish whether students who participate in sports activities give excellent performance in the classroom. The majority of the participants (44.3%) agreed, (29.6%) gave a neutral response, and (26.1%) disagreed. These results signify that, in the opinion of the students' participants, students who participated in sports activities gave excellent performances in the classroom. Only less than a third of the participants gave a differing opinion. These results are in line with the finding of Brenner et al. (2019), who concluded that physical

activity increases the release of growth factors that stimulate the development of new brain cells. Additional brain cells increase cognitive functions such as short-term and long-term memories, which are important in academic development. Hence, sporting activities are expected to improve academic performance in students by improving their physical, social, emotional, and cognitive aspects.

Item 19(vii) of the students' questionnaire inquired on whether students who take part in sports activities obtain higher grades as compared to their counterparts who do not take part in sports. The majority of the participants (60.1%) agreed, and (39.9%) disagreed. These results imply that, in the opinion of student participants, students who took part in sports activities obtained higher grades than their counterparts who were inactive in sports. Nearly two-thirds of the participants upheld this opinion. These results are in line with the finding of Singleton (2016), who concluded that athletes had higher GPAs, better attendance rates, lower dropout rates, and higher graduation rates compared to their counterparts. Item 19(viii) of the students' questionnaire inquired on whether participation in sports has a positive influence on students' concentration in education. Nearly four-fifths of the participants (76.8%) agreed, and (23.2%) were unsure and thus gave a neutral response. These results signify that, in the opinion of the students' participants, participation in sports had a positive influence on students' concentration in education. Only less than a quarter of the participants held a differing opinion. These results are in line with the findings of Patil (2020), who argued that badminton has a positive influence on student academic outcomes as the players are expected to work on strategy, teamwork, speed, and accuracy to become

successful. Consequently, the students have better cognitive and physical abilities that contribute to academic excellence.

Item 19(ix) of the students' questionnaire inquired whether participation in sports had a positive influence on memory. Nearly two-thirds of the participants (63.5%) agreed, and 36.5% were unsure and thus gave a neutral response. These results imply that, in the opinion of the students' participants, participation in sports had a positive influence on memory. None of the participants held a divergent opinion. These results support the findings of Valkenborghs et al. (2019), who concluded that involvement in outdoor sports from an early age encourages positive cognitive development in later years. These scholars argue that during sports, students learn to use their brains to think, remember and problem-solve. Item 19(x) of the students' questionnaire inquired on whether students' grades would be better if they did not participate in high school games. Interestingly, all the participants (100.0%) disagreed. These results imply that, in the opinion of the students' participants, students' grades would not be better if they did not participate in high school games. All the participants opined so. These results are in line with the findings of Tasdubgen et al. (2020), who established that students who indulged in outdoor sports had better problem-solving skills and creativity compared to other students. These scholars attributed these results to the fact that these students were expected to routinely employ fast, creative reactions during the game. Good decision-making skills contribute to better academic outcomes since the students can deal with complex problems in the classroom.

Table 1: Students' Perception of the Influence of the Sports on Academic Performance

Students' Perception Item	A		N		D	
	F	%	F	%	F	%
Sports activities play a good role in the life of high school students	185	91.1	18	8.9	0	0.0
There is a link between participation in sports and performance in education	140	69.0	32	15.8	31	15.3

Sports in high school positively influence the education of students	180	88.7	23	11.3	0	0.0
Sports in high school improve the mental development of students	203	100.0	0	.0	0	0.0
Sports activities are very useful and helpful in enhancing the academic mission of students	142	70.0	48	23.6	13	6.4
Students who participate in sports activities give excellent performances in the classroom	90	44.3	60	29.6	53	26.1
Students who take part in sports activities obtain higher grades as compared to their counterparts who do not take part in sports	122	60.1	0	.0	81	39.9
Participation in sports has positive influences on students' concentration in education	156	76.8	47	23.2	0	0.0
Participation in sports has a positive influence on memory	129	63.5	74	36.5	0	0.0
Students' grades would be better if they did not participate in high school games	0	.0	0	.0	203	100.0

In order to effectively evaluate students' perception of the influence of sports on academic performance, the study compared the students' perception of gender, age and school type. This necessitated formation of students' perception of the influence of sports on the academic performance scale. The correlation among responses from the ten items on students' perception of the influence of sports on academic performance was high. The answers to the ten questions were summed up to create a student's perception of the influence of sports on the academic performance scale. Cronbach's coefficient alpha obtained was .783; hence, the internal consistency of the items related to students' perception of the influence of sports on

academic performance was good. A T-test is done to determine if there is a significant difference between the means of the two groups, which may be related to certain features. A T-test was performed to examine the difference in students' perception of the influence of sports on academic performance between males and females. Results illustrated in Table 2 illustrate that the mean students' perception of the influence of sports on the academic performance score of females was 36.4 (SD = 3.78), while that of their counterparts was 36.1 (SD = 3.98). This means that students' perception of the influence of sports on academic performance scores for females was higher than that of males.

Table 2: Students' Perception of Influence of Sports on Academics Based on Gender

Test Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
Students' perception of the influence of Sports on academics	Male	100	36.1	3.98	0.398
	Female	99	36.4	3.78	0.380

An independent-sample t-test indicated that the difference in students' perception of the influence of sports on academic performance scores for males and

females was not statistically significant. The P – Value was greater than .05, as shown in Table 3. Hence, the study did not establish a significant relationship

between student's perceptions of the influence of | sports on academic performance and gender.

Table 3: Link of Sports and Academic Based on Gender: Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	T	Df	P - Value	Mean Difference	Std. Error Difference
Equal variances assumed	.107	.744	-.698	197	.486	-0.384	0.551
Equal variances not assumed			-.698	196.7	.486	-0.384	0.551

One-way ANOVA was done to examine the relationship between student's perceptions of the influence of sports on academic performance and age. One-way ANOVA is a statistical technique that is used to check if the means of more than two groups are significantly different from each other. There were three age groups; 17 years, 18 years and 19 years. As

shown in Table 4, the mean students' perception of the influence of sports on academic performance score for students aged 18 years was 36.4 (SD = 3.97), followed by students 19 years who posted a mean of 36.2 (SD = 3.95). The students aged 17 years recorded a mean of 36.1 (SD = 3.77).

Table 4: Students' Perception of the Influence of Sports on Academic Based on Age

Age	N	Mean	Std. Deviation	Std. Error
17 Years	65	36.1	3.77	0.468
18 Years	74	36.4	3.97	0.461
19 Years	60	36.2	3.95	0.509
Total	199	36.2	3.88	0.275

The p-value of the Levene statistic is greater than .05, indicating that the variances are not statistically different, as shown in Table 3 Bonferroni procedure

assumes equal variances; hence, the ANOVA was interpreted.

Table 5: Homogeneity of Variances for Linkage of Sports on Academic Based on Age

Levene Statistic	df1	df2	P - Value
.091	2	196	.913

The ANOVA table provides information on whether the means for the different groups are statistically different or not. Results displayed in Table 6 indicate

that the difference in the mean scores between the three age groups was not statistically significant since the P-Value was more than .05. Hence, the study did

not establish a significant relationship between students' perception of the influence of the sports on academic performance and age.

Table 6: ANOVA for Linkage of Sports on Academics Based on Age

	Sum of Squares	Df	Mean Square	F	P – Value
Between Groups	3.236	2	1.62	.107	.899
Within Groups	2977.2	196	15.19		
Total	2980.4	198			

One-way ANOVA was done to examine the relationship between students' perception of the influence of sports on academic performance and school type. As shown in Table 7, the mean students' perception of the influence of sports on academic performance score for participants in sub-county schools was 40.9 (SD = 3.56), followed by participants in national schools who posted a mean of 36.0 (SD = 1.02). Further, the mean for participants in extra county schools was 33.9 (SD = 1.07), equal to the mean registered by participants in county schools.

Table 7: Students' Perception of Influence of Sports on Academics Based on School Type

School Category	N	Mean	Std. Deviation	Std. Error
National	15	36.0	1.02	0.110
Extra County	58	33.9	1.07	0.140
County	65	33.9	1.58	0.196
Sub County	61	40.9	3.56	0.456
Total	199	36.2	3.88	0.275

One-way ANOVA assumes that the variances are homogenous. To test this assumption, a homogeneity test of variance was performed. The p-value of the Levene statistic is less than .05, indicating that the variances are statistically different, as shown in Table 8. Though the Bonferroni procedure assumes equal variances, the sample size for this study was large. This reduced the problem. Hence, the ANOVA was interpreted.

Table 8: Homogeneity of Variance: Link of Sports on Academics Based on School Type

Levene Statistic	df1	df2	P – Value
113.106	3	195	.000

The ANOVA table provides information on whether the means for the different groups are statistically different or not. When the p-value is less than .05, then the means for the different groups are not all equal. There is much difference between the two Mean Squares (664.7 and 5.1), resulting in a significant difference $F(3, 195) = 131.4, p < .001$, as shown in Table 9. It was found that the means of the four school

categories were not all equal. This necessitated a multiple comparison table to be able to point out which groups had significantly different means.

Table 9: ANOVA for Linkage of Sports on Academics Based on School Type

	Sum of Squares	df	Mean Square	F	P – Value
Between Groups	1994.1	3	664.7	131.4	.000
Within Groups	986.3	195	5.1		
Total	2980.4	198			

Multiple comparison procedure was performed to examine all possible pairs of means and determine if each individual pairing was the same or statistically different. Results displayed in Table 10 show that five of the six pairs vary: 1) National versus extra county school $p = .002$, which is lower than the Significant level of .05, so these groups vary. 2) National versus county school $p = .002$ which is lower than the Sig. level of .05, meaning these groups vary. 3) National versus sub county school $p < .001$ which is lower than the Sig. level of .05, meaning these groups vary. 4)

Extra county versus county school $p = .981$ which is higher than the Sig. level of .05, meaning these groups do not vary. 5) Extra county school versus sub county $p < .001$ which is lower than the Sig. level of .05, meaning these groups vary. 6) County school versus sub county $p < .001$ which is lower than the Sig. level of .05, meaning these groups vary. It was therefore established that the difference in students' perception of the influence of sports on academic performance between the school types was statistically significant.

Table 10 Multiple Comparisons for Linkage of Sports on Academics Based on School Type

(I) School type	(J) School type	Mean Difference (I-J)	Std. Error	P – Value
National	Extra County	2.052	0.651	.002
	County	2.062	0.644	.002
	Sub County	-4.934	0.648	.000
Extra County	National	-2.052	0.651	.002
	County	.0098	0.406	.981
	Sub County	-6.986	0.412	.000
County	National	-2.062	0.644	.002
	Extra County	-.0098	0.406	.981
	Sub County	-6.996	0.401	.000
Sub County	National	4.934	0.648	.000
	Extra County	6.986	0.412	.000
	County	6.996	0.401	.000

Class Teachers' Perception of the Influence of Sports on Academic Performance

Class teachers' perception of the influence of sports on academic performance was examined using ten parameters captured in item five of the class teachers' questionnaire. Item 5(i) of the class teachers' questionnaire sought to establish whether sports activities played a good role in the life of high school students. As shown in Table 11, the majority of the participants (80.0%) agreed, and (20.0%) were unsure and thus gave a neutral response. These results imply that, in the opinion of the class teachers interviewed, sports activities played a good role in the life of high school students. None of the participants held a differing opinion. Item 5(ii) of the class teachers' questionnaire sought to establish whether there was a link between participation in sports and performance in education. Two-thirds of the participants (66.7%) agreed, 20.0% gave a neutral response, and 13.3% disagreed. These results imply that, in the opinion of the class teachers' participants, there was a link between performance in education and participation in sports. Only less than a fifth of the participants held a differing opinion.

Item 5(iii) of the class teachers' questionnaire sought to establish whether sports in high school positively influenced the education of students. The majority of the participants (53.3%) agreed, and (46.7%) disagreed. These results signify that, in the opinion of the class teachers' participants, sports in high school positively influenced the education of students. Only less than half of the participants held a contrary opinion. Item 5(iv) of the class teachers' questionnaire sought to establish whether sports in high school improved the mental development of students. Remarkably, all the participants (100.0%) agreed. These results signify that, in the opinion of the class teachers' participants, sports in high school improved the mental development of students. None of the participants held a contrary opinion.

In regard to 5(v) of the class teachers' questionnaire, the participants were asked whether sports activities are very useful and helpful in enhancing the academic mission of students. The majority of the participants (53.3%) agreed, and (46.7%) disagreed. These results

imply that, in the opinion of the class teachers' participants, sports activities were very useful and helpful in enhancing the academic mission of students. Only less than half of the participants held divergent opinions. Item 5(vi) of the class teachers' questionnaire sought to establish whether students who participate in sports activities give excellent performance in the classroom. The majority of the participants (53.3%) agreed, and 46.7% disagreed. These results signify that, in the opinion of the class teachers' participants, students who participated in sports activities gave excellent performances in the classroom. Only less than half of the participants gave a differing opinion.

Item 5(vii) of the class teachers' questionnaire inquired on whether students who take part in sports activities obtain higher grades as compared to their counterparts who do not take part in sports. The majority of the participants (60.0%) disagreed, and (40.0%) agreed. These results imply that, in the opinion of class teachers' participants, students who took part in sports activities obtained lower grades than their counterparts who were inactive in sports. Nearly two-thirds of the participants upheld this opinion. Item 5(viii) of the class teachers' questionnaire inquired on whether participation in sports has a positive influence on students' concentration in education. More than half of the participants (53.3%) agreed, and 46.7% disagreed. These results signify that, in the opinion of the class teachers' participants, participation in sports had a positive influence on students' concentration in education. Only less than half of the participants held a differing opinion.

Item 5(ix) of the class teachers' questionnaire inquired whether participation in sports had a positive influence on memory. The majority of the participants (53.3%) agreed, and (46.7%) disagreed. These results imply that, in the opinion of the class teachers' participants, participation in sports had a positive influence on memory. Only less than half of the participants held divergent opinions. Item 5(x) of the class teachers' questionnaire inquired on whether students' grades would be better if they did not participate in high school games. Four-fifths of the participants (80.0%) disagreed, and (20.0%) were unsure and thus gave a neutral response. These results

imply that, in the opinion of the class teachers' participants, students' grades would not be better if they did not participate in high school games. None of the participants held a contrary opinion.

It is paramount to note that the responses for nine of the ten items were similar for both the students and class teachers' participants. It is only item seven that

had different responses. In the opinion of student participants, students who took part in sports activities obtained higher grades than their counterparts who were inactive in sports. In contrast, in the opinion of class teachers' participants, students who took part in sports activities obtained lower grades than their counterparts who were inactive in sports.

Table 11: Teachers' Perceptions on the Influence of Sports on Academic Performance

Teachers' Perception Item	A		N		D	
	F	%	F	%	F	%
Sports activities play a good role in the life of high school students	12	80.0	3	20.0	0	0.0
There is a link between participation in sports and performance in education	10	66.7	3	20.0	2	13.3
Sports in high school positively influence the education of students	8	53.3	0	0.0	7	46.7
Sports in high school improve the mental development of students	15	100.0	0	0.0	0	0.0
Sports activities are very useful and helpful in enhancing the academic mission of students	8	53.3	0	0.0	7	46.7
Students who participate in sports activities give excellent performances in the classroom	8	53.3	0	0.0	7	46.7
Students who take part in sports activities obtain higher grades as compared to their counterparts who do not take part in sports	6	40.0	0	0.0	9	60.0
Participation in sports has positive influences on students' concentration in education	8	53.3	0	0.0	7	46.7
Participation in sports has a positive influence on memory	8	53.3	0	0.0	7	46.7
Students' grades would be better if they did not participate in high school games	0	0.0	3	20.0	12	80.0

Games Teachers' Perception of the Influence of Sports on Academic Performance

The games teachers' were asked to rate the involvement of students in sports activities before Covid19 break. As shown in Table 12, the majority of the participants (80.0%) indicated that the students were actively involved in sporting activities, while

20.0% specified that the students were fairly active in sporting activities before Covid19 break. These results signify that, in the opinion of the games teachers, students were actively involved in sporting activities before the Covid19 break. Only a fifth of the participants indicated moderate involvement.

Table 12: Games Teachers' Perceptions on Students' Involvement in Sports before Covid Break

Involvement Intensity Item	Frequency	Per cent
Active	12	80.0
Fairly Active	3	20.0
Total	15	100.0

Games teachers' perception of the influence of sports on academic performance was examined using six parameters captured in item three of the games teachers' questionnaire. Item 3(i) of the games teachers' questionnaire sought to establish whether sports activities played a good role in the life of high school students. As shown in Table 13, all the participants indicated that sports played a good role in the life of high school students, where (60.0%) agreed and (40.0%) strongly agreed. These results signify that, in the opinion of the games teachers interviewed, sports activities played a good role in the life of secondary school students. None of the participants held a contrary opinion. Item 3(ii) of the games teachers' questionnaire sought to establish whether sports in high school positively influenced the education of students. Remarkably, all the participants indicated that sports in high schools had a positive influence on the education of students, where (53.3%) strongly agreed and (46.7%) agreed. These results imply that, in the opinion of the games teachers interviewed, sports in high school positively influenced the education of students. All the participants were unanimous on this opinion.

Item 3(iii) of the games teachers' questionnaire sought to establish whether sports in high school improved the mental development of students. Interestingly, all the participants pointed out that sport in high school positively improved students' mental development, where 80.0% agreed and 20.0% strongly agreed. These results signify that, in the opinion of the games teachers interviewed, sports activities were vital in the

mental development of high school students. None of the participants held a divergent opinion. Item 3(iv) of the games teachers' questionnaire sought to establish whether students who participated in sports activities posted excellent performance in the classroom. All the participants specified that students who engaged in sports activities recorded excellent academic performance, where (53.3%) strongly agreed and (46.7%) agreed. These results signify that, in the opinion of the games teachers interviewed, students who participated in sporting activities performed well academically. None of the participants held a differing opinion.

Item 3(v) of the games teachers' questionnaire sought to establish whether participation in sports had positive influences on students' concentration in education. All the participants pointed out that involvement in sports activities had a positive influence on students' concentration in-class work, where (60.0%) agreed and (40.0%) strongly agreed. These results imply that, in the opinion of the games teachers included in the study, participation in sports had positive influences on students' concentration in education. None of the participants held a contrary opinion. Item 3(vi) of the games teachers' questionnaire sought to establish whether students' grades would be better if they did not participate in high school games. All the participants (100.0%) disagreed. These results signify that, in the opinion of the game teachers, students' grades would not be better if they did not participate in high school games. All the participants opined so.

Table 13: Games Teachers' Perception on Influence of Sports on Academics Performance

Games Teachers' Perception Item	SA		A		D	
	F	%	F	%	F	%
Sports activities play a good role in the life of high school students	6	40.0	9	60.0	0	0.0
Sports in high school positively influence the education of students	8	53.3	7	46.7	0	0.0

Sports in high school improve the mental development of students	3	20.0	12	80.0	0	0.0
Students who participate in sports activities give excellent performances in the classroom	8	53.3	7	46.7	0	0.0
Participation in sports has positive influences on students concentration in education	6	40.0	9	60.0	0	0.0
Students' grades would be better if they did not participate in high school games	0	0.0	0	0.0	15	100.0

Principals' Perception of the Influence of Sports on Academic Performance

The principals included in the study were asked to rate the level of support they accorded to sports activities. Results displayed in Table 14 indicate that two-thirds of the participants (66.7%) pointed out that they offered

great support to sports activities, and (33.3%) specified that they offered fair support to sports activities. These results signify that the principals believed that they offered overwhelming support to sports activities. Only a third of the participants indicated fair support for sports activities.

Table 14: Principals' Level of Support Accorded to Sports

Support Level	Frequency	Per cent
Great	10	66.7
Fair support	5	33.3
Total	15	100.0

The participants were asked to rate the intensity of their participation in sporting activities. As shown in Table 15, nearly three-quarters of the participants (73.3%) indicated that they were inactive in sports activities, and (26.7%) pointed out that they were

active. These results indicate that, by and large, the heads of secondary institutions in Imenti North Sub County were not actively engaged in sports activities. Only less than a third of the participants indicated active engagement.

Table 15: Distribution of Principals by Their Participation in Sporting Activities

Intensity of participation	Frequency	Per cent
Active	4	26.7
Inactive	11	73.3
Total	15	100.0

Principals' perception of the influence of sports on academic performance was examined using six parameters captured in item four of the principals' questionnaire. Item 4(i) of the principals' questionnaire sought to establish whether sports activities played a good role in the life of high school students. As shown in Table 16, all the participants specified that sports played a good role in the life of

high school students, where (73.3%) agreed and (26.7%) strongly agreed. These results signify that, in the opinion of the principals interviewed, sports activities played a good role in the life of secondary school students. None of the participants held a contrary opinion. Item 4(ii) of the principals' questionnaire sought to establish whether sports in high school positively influenced the education of

students. Remarkably, all the participants pointed out that sports in high schools had a positive influence on the education of students, where (86.7%) agreed and (13.3%) strongly agreed. These results imply that, in the opinion of the principals interviewed, sports in high school positively influenced the education of students. All the participants supported this opinion.

Item 4(iii) of the principals' questionnaire sought to establish whether sports in high school improved the mental development of students. Interestingly, all the participants pointed out that sports in high school positively improved students' mental development, where (80.0%) agreed and (20.0%) strongly agreed. These results signify that, in the opinion of the principals interviewed, sports activities were vital in the mental development of high school students. None of the participants held a contrary opinion. Item 4(iv) of the principals' questionnaire sought to establish whether students who participated in sports activities posted excellent performance in the classroom. Two-thirds of the participants (66.7%) agreed, while (33.3%) disagreed. These results signify that, in the opinion of the principals interviewed,

students who participated in sporting activities performed well academically. Only a third of the participants held a divergent opinion.

Item 4(v) of the principals' questionnaire sought to establish whether participation in sports had positive influences on students' concentration in education. The majority of the participants (60.0%) agreed, while (40.0%) disagreed. These results imply that, in the opinion of the principals included in the study, participation in sports had positive influences on students' concentration in education. Only less than half of the participants held a contrary opinion. Item 4(vi) of the principals' questionnaire sought to establish whether students' grades would be better if they did not participate in high school games. The majority of the participants (73.3%) disagreed, while (26.7%) agreed. These results signify that, in the opinion of the principals, students' grades would not be better if they did not participate in high school games. Nearly three-quarters of the participants opined so.

Table 15: Principals' Perceptions on the Influence of Sports on Academic Performance

Principals' Perception Item	SA		A		D	
	F	%	F	%	F	%
Sports activities play a good role in the life of high school students	4	26.7	11	73.3	0	0.0
Sports in high school positively influence the education of students	2	13.3	13	86.7	0	0.0
Sports in high school improve the mental development of students	3	20.0	12	80.0	0	0.0
Students who participate in sports activities give excellent performances in the classroom	0	0.0	10	66.7	5	33.3
Participation in sports has positive influences on students concentration in education	0	0.0	9	60.0	6	40.0
Students' grades would be better if they did not participate in high school games	0	0.0	4	26.7	11	73.3

Inferential Statistics for Sporting Activities and Academic Performance

The difference in academic performance between the period when the participants were engaged in sports and post Covid19 break when there were no sports in school was examined. This was done to exhaustively answer the research question in regard to the influence of sporting activities on academic performance. A T-test was performed to examine the difference in the participants' examination scores for the 2020 and 2021 end-of-first-term examinations. Results displayed in Table16 showed that the mean score posted for the 2020 end-of-first-term

examination was 3.26 (SD = .59), while the mean score for the 2021 end-of-first-term examination was 2.90 (SD = .72). This means that the mean score posted for the 2020 end of first term examination was higher than that of 2021 end of first term examination. Consequently, the mean score posted when the participants were actively engaged in sporting activities (before Covid19 break) was higher than the mean recorded when the participants were not engaged in sporting activities; due to Covid19 restrictions imposed by the Ministry of Education on all schools.

Table 16: Comparative Analysis of 2020 and 2021 Examination Scores

	Variables	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	End of first term 2021 Score	2.90	203	0.72	0.051
	End of first term 2020 Score	3.26	203	0.59	0.042

Results displayed in Table 17 indicated that there was a positive correlation between the end of first term 2021 examination mean score & end of first term 2020

examination mean score, Pearson's $r(203) = .748, p < .001$.

Table 17: Correlations Analysis for 2020 and 2021 Examination Scores

	Variables	N	Correlation	P - Value
Pair 1	End of first term 2021 & End of first term 2020	203	.748	.000

A paired-sample t-test indicated that the mean score posted for the 2020 end-of-first-term examination was significantly higher ($M = 3.26, SD = .59$) than the mean score for the 2021 end-of-first-term examination ($M = 2.90, SD = .72$), $t(202) = 10.65, p < .001$ as shown in Table 18. Hence, the study established a significant relationship between sporting activities and academic performance in public secondary schools. These results are in line with the findings of Valkenborghs et al. (2019), who concluded that routine attentiveness during games makes the students more attentive in

the classroom, which contributes to better academic attainments. The results also support the findings of Tasdubgen et al. (2020), who argued that students who indulged in sports had better problem-solving skills and creativity compared to other students. Students active in sports are expected to routinely employ fast, creative reactions during the game. Good decision-making skills could contribute to better academic outcomes since the students can deal with complex problems in the classroom.

Table 18: Paired Samples Test for Participants' Scores in 2020 and 2021 Examinations

	Paired Differences	T	df	P -
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	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Value
				Lower	Upper			
End of first term 2021 - End of first term 2020	-0.360	0.481	0.034	-0.426	-0.293	-10.65	202	.000

CONCLUSION AND RECOMMENDATIONS

Conclusion: The study concluded that the relationship between sporting activities and academic performance in public secondary schools was statistically significant. Moreover, it was concluded that students' involvement in sporting activities had a positive influence on their academic performance. The mean score posted when the participants were actively engaged in sporting activities (Before Covid19 break) was significantly higher than the mean recorded when the participants were not engaged in sporting activities; due to Covid19 restrictions imposed

by the Ministry of Education on all schools. Therefore, the researcher can conclude that there is various significance of sporting activities in public secondary schools in academic performance in Imenti North-Sub-County in Meru County, Kenya.

Recommendations: The study recommends that school administrators should invest in games and enlighten students on the benefits of engaging in sports. Moreover, policymakers should look for measures to encourage students to engage in sports to better attendance rates, lower dropout rates, and improve academic performance.

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