

Influence of Games on Academics Across Gender: A Case of Rongo Sub County Secondary Schools, Kenya

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Abstract: This study sought to establish the influence of participation in games on academic achievement across gender in secondary schools in Rongo Sub-County. The study adopted descriptive survey and correlation designs. The study population included 50 head teachers, 50 games teachers and 2000 Form Four students. The sample size was as follows: 350 form four students participating in games, 175 boys and target population. 175 girls which was 33% of the Face validity of the instruments was determined by three experts in the department from Rongo University. Test-retest method was used to establish the reliability of the instruments which was found to be 0.89 An independent t-test was performed to compare the academic achievement of girls and boys participating in games. The study found out that there was no significant difference in academic achievement among girls and boys participating in games ($t(348) = 0.752, p = 0.453$) moreover, the differences in academic achievement is however independent of the sex of the students. Girls who participate in games are likely to achieve just as much as boys who participate in games. The study concluded that Secondary schools need not discriminate on gender while participating in any games programs. The study recommended that all students should be encouraged to participate in games irrespective of their gender. The researcher paid keen attention to research ethical issues and got the informed consent of the respondents and guarded against plagiarism and ensured confidentiality.

Keywords: Games, participating, gender, academic, achievement.

INTRODUCTION

Physical exercise has been recommended for academic progression. The work of Dede [1] in America postulated that pediatricians and school health workers contended that physical activity is likely to help children perform better in school because physical activity improves general circulation, increases blood flow to the brain and releases brain chemicals which may reduce stress and improve mood and induce a calming effect. These advantages to physical activity according to Hollrach [2] can improve academic achievement in school. Thus participation in games may promote physical activity and hence academic achievement. However, this contention has not been supported by other research. Others scholars like Hauser and Lueptow [3] and Alexandria [4] have conducted researches in finding out how games programs are implemented in secondary schools and colleges. They concluded that games can be implemented well according to an established policy stated by the ministry of education and the curriculum developers. They found out that there is proper implementation of games programs because there is

frequent supervision from the government agencies in charge of quality assurance [4].

According to NASBE [5], a commission set up in Indiana State in the United States of America to gather information and report on the implementation of games programs in secondary schools, did find out that games go hand in hand with the formal curriculum but the latter needs to be given priority since it is the base of success in education. The commission stated that most countries, especially in the developing world, do value those who prosper in the formal curriculum but look down upon those who participate in games programs.

A study by Kimiko [6] found out that learners in grades 6 through 8 did well academically when allowed to choose the extra curricular activity to participate in. The study involved elementary learners as the respondents thereby creating a gap by not involving secondary school learners. This study ought to fill the gap by carrying out a survey on secondary school learners as the respondents since the findings on elementary school learners cannot be used amongst

secondary school learners. Similar studies have also been carried out by Marsh and Kleitman [7] and Broh [8]. The studies mostly used students as respondents using questionnaires. This study went further to involve games teachers and head teachers as respondents using questionnaires and interview schedules.

Numerous studies have been conducted concerning the relationship between participation in games and academic achievement. Broh [8] found that extra curricular activities are associated with an improved grade point average. Guest and Schneider [9] also concluded that extracurricular activities do in fact, influence academic performance. Both these studies were theoretical in nature hence the need for an empirical study. This study sought to fill this gap by being empirical in nature. Similarly, Anyango [10] conducted a study on the influence of co-curricular activities on academic achievement of public primary school pupils in Kisumu municipality, Kisumu County, Kenya. The study found out that the more pupils participated in co-curricular activities, the more their academic performance deteriorated, this was indicated by an inverse relationship between involvement in co-curricular activities. The study only employed questions that required pupils to tick 'NO' and 'YES' thereby restricting the respondents. The study did not conduct a T-test to show level of significance between the two variables, hence this study sought to fill this gap by going a step further and conducting a T-test.

In Kenya, review and development of education policy and practice has rarely focused on games programs. The first Kenya Education

Commission in independent Kenya headed by Prof. Simeon Ominde [11] sought to reorient education policies that perpetuated social inequalities in the colonial society. The focus was on promoting academic subjects to produce manpower to take over white collar jobs left by the departing colonial officers. Non-formal curriculum was identified as contributing to this process. A study of curriculum development in Kenya led by Gordon Bessey [12] noted that non-formal curriculum (activities and subjects) were an integral part of helping train Africans to become self-reliant and take over the roles of the departed colonial officers and also cater for those who could not make it in the formal curriculum.

Gachathi Committee [13] also emphasized the broad-field approach to the curriculum where both the formal and non-formal curriculum were emphasized, but both Kamunge Commission [14] and Koech Commission [15] advocated for the development of curriculum for national education and training programs for vocational training and the curriculum being gender sensitive respectively. The Ministry of Education Policy on non-formal activities is that these activities should be treated equally with the formal curriculum and informal curriculum [15], but most schools tend to give the non-formal curriculum a second priority [8] after the formal.

Rongo Sub-County secondary schools have not featured much at the regional and national games competitions in the recent past. Very few schools from Rongo Sub-County make it past the regional level and when they do manage to proceed to the national level, they perform dismally as shown on Table-1.

Table-1: Term One Ball games (National level) representation per sub-county

Year	Rongo	Migori	Kisii	Nyamira	Kisumu	Siaya	Homa bay
2008	0	1	4	3	4	4	1
2009	0	2	3	2	5	4	1
2010	0	1	3	2	4	5	2

Source: (Rongo Sub-County Sports Office, 2010)

Studies by Staffo [16]; Lisella and Sertwatka [17] attribute poor performance to poor methods used in the implementation of games programs in secondary schools, less attention given to games programs, less value given to games programs, challenges faced in implementation of games programs. However, no study examined the contribution of games programs to the academic achievement of learners.

According to Sifuna [18], head teachers also discourage students from participating in games programs; they give priority to formal activities thereby limiting the implementation of games programs with the intention of saving on the money that is meant for games programs which in turn is diverted to other uses which schools think will greatly contribute to the

academic achievement. Sifuna [18] proceeds by saying that games programs are expensive to sustain in most secondary schools, thereby, schools limit the number and varieties of games that are offered resulting in poor games programs implementation methods. Preference in the school budget is, as a result, given to the formal curriculum.

Influence of games programs on academic achievement across gender

Games and academic programs are inseparable. The work of Zahid [19] in Pakistan reiterated that education is not just the memorization of facts, figures and skills but it is all round development of the students. Logically, games programs are an integral part of education system. There has been

controversy since time immemorial over who between boys and girls is better academically. Similarly, Yakubu [20] posited that games offer the best chance through which children can express themselves and improve their skills. Games programs are like laboratories for children. Children know each other, even themselves, by means of games and improve their new abilities by discovering them through games programs.

Blume and Zember [21] argued that on average, girls do better than boys. Girls get higher grades and complete high school at a higher rate compared to boys. This shows that there are gender differences in academic achievement between boys and girls. conducted relating to the academic achievement of boys and girls. Research done by McBride [22] concluded that boys' brains are better suited to symbols abstraction and pictures. He proceeded that boys generally learn higher Mathematics and Physics better than girls. He although concludes that there are no differences in the overall performance across gender. According to Avedon [23] the differences between male and female brains are only assumptions and stereotypes which have negative effect based on a phenomenon known as "stereotype threat" which is the negative effect stereotypes often existing in real academic outcomes. The American Association of University Women (AAUW) Educational Foundation [24] gave the debate a new perspective. They brought gender equity to the forefront of educational reform. Since then the focus of discussion about equal education for all students has shifted from equality to equity. In the context of gender equitable education appropriately addresses the needs of both girls and boys rather than assuming that those needs are identical, thus quality in modern education provides equal opportunities for reaching a shared standards of excellence. (gender equity in education is the absence of gender differences in educational outcome). Gaylene [25] concluded that while there has been ongoing debate about the role of biology as source cognitive differences, educators agree that changes in educational outcome must focus on psychological aspects of behavior. Regardless of the specific causes of gender gaps, schools have a mission

to ensure all students can fully participate in and experience educational success. This study sought to find the difference in academic achievement of girls and boys who participate in games.

RESEARCH METHODOLOGY

The study employed the descriptive survey, ex post facto and correlation designs. According to Ary, Jacobs, Razavieh and Sorensen [26], ex post facto research are carried out after discrepancy in the variable of concern has already been determined in the natural course of events. The advantage of ex post facto design is that the data cannot be manipulated by the researcher or the respondent [27]. This was found appropriate as phenomenon in this study had already occurred.

The target population for this study was 50 head teachers, 50 games teachers and 2000 Form Four students. All the 50 secondary schools were offering games to their students. The study opted to use head teachers because they are the ones in charge of disbursing funds and offering administrative support to teachers and students. Games teachers were used in the study due to the fact that they are the patrons in charge of guiding the learners during games, and are influential in determining how learners play [28]. Form four students were used in the study because of their wide experience with games in secondary schools and they were likely to give genuine and accurate responses ,at the same time their results in the district exams was required for the study.

The study comprised head teachers, games teachers, and students. Simple Random Sampling technique was used to select pilot sample. The study then used saturated sampling technique to select the 46 head teachers and 46 games teachers. The study also used the stratified random sampling technique to include 700 Form Four students from the 2000 in the sampled schools. The strata involved 350 students who participate in games and 350 students who did not participate in games programs. According to Cohen, Manion and Morrison [29] the samples represent at least a third of the total population the sample frame for the study was as shown in Table-2:

Table-2: Sample Distribution

Category of sample Respondents	Population size (N)	Sample size (n)	Percentage of sample (%)
Head Teachers	50	50	100
Games Teachers	50	50	100
Form Four students	2000	700	30

Data was analyzed using Levenne statistic which according to Bloomberg and Volpe [30] was used to test the null hypothesis and descriptive statistics and a t test was run using Statistical Package for Social Sciences (SPSS). For descriptive statistics the study examined all the completed questionnaires, and the

information contained therein was tabulated in frequency tables and percentages.

The present study sought to compare academic achievement of girls participating in games with that of boys participating in games. The Null hypothesis was: there is no significant difference between academic

achievement of girls participating in games and those of boys participating in games. A t-test for independent samples was conducted to test the hypothesis that stated: ‘there is no significant difference in academic

achievement among girls and boys who participated in games. Only the sample of 350 students who participated in games was used for this test. Results are presented in Table-3.

Table 3: Results of The t-test of Academic Achievement between Girls and Boys who Participated in Games

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Academic Achievement	Equal variances assumed	.300	.408	.752	348	.453	.061	.082
	Equal variances not assumed			.761	331.665	.447	.061	.081

Source: Survey Data (2018)

Results show that the Levene statistic was not significant at the 0.05 level which implies that equal variances could be assumed and hence the top line was used to interpret the results. There was no significant difference in academic achievement among girls and boys participating in games ($t(348) = 0.752, p = 0.453$). The hypothesis that there is no significant difference in academic achievement among girls and boys participating in games was therefore supported. The findings of this study show that there is no significant difference in academic achievement of boys and girls participating in games. These results support the findings by Mathiessen [31] but is not consistent with the findings of other studies [32, 21].

According to Gurrian and Stevens [32], there are differences in terms of the female and male brain, and these differences are biological and can lead to differences in academic achievement. Blume and Zamber [21] also concluded that most studies do show that on average, girls do better in school than boys. This finding was supported by the work of Nigera [33] and Odhiambo [34]. Moreover, Mathiessen [31] equally supported by alluding that girls get higher grades and complete high school at a higher rate to boys hence differences between male and female brains are only existent in general academia but is not real.

RECOMMENDATIONS

Secondary schools need not discriminate on gender while participating in any games programs.

CONCLUSION

The differences in academic achievement are independent of the sex of the students. Girls who participate in games are likely to achieve just as much as boys who participate in games.

REFERENCES

1. Dede, C. (Eds.) (2005). *Scaling up Success: Lessons from Games based educational Improvement*. San Francisco, CA: Jossey-Bass.
2. Hollrach, R. (2004). *Non formal activities*. Iowa State University. Retrieved from www.chpre.ecu.edu.
3. Hauser, J., & Lueptow, L. (2004). *Participation in Athletics and Academic Achievement: A Replication and extension*. Retrieved from www.akron.org
4. Alexandria, B. F. (2004). *Non-Formal Activities in Schools*. Retrieved from www.wikipedia.org
5. NASBE (2008). *Indiana State University*. Retrieved from www.nasbe.org
6. Kimiko F. (2005). *The effects of extracurricular activities on the academic Performance of junior high students*. The Masters college. Retrieved from www.kon.org
7. Marsh, H. W., & Kleitman, S. (2002). Extracurricular Activities: The good, the bad and the nonlinear. [Electronic Version] *Harvard Educational Review*, 72, 464-512.
8. Broh, B. A. (2002). Linking extra-curricular programming to academic achievement: Who benefits and why? [Electronic Version]. *Sociology of Education*, 76, 89-105.
9. Guest, A., & Schneider, B. (2003). Adolescents' extracurricular participation in context: The mediating effects of schools, communities, and identity. *Sociology of education*, 89-109.
10. Anyango, V. (2012). *Influence of Co-Curricular activities on Academic Achievement on Public primary schools in Kisumu County, Kenya*. University of Nairobi. Digital Repository. Retrieved from www.erepository.uonbi.ac.ke.
11. Himbara, D. (1994). The failed Africanization of commerce and industry in Kenya. *World Development*, 22(3), 469-482.

12. Nieuwenhuis, F. J. (1997). Can research into the development of education in post-colonial Africa shape education policies in South Africa?. *International journal of educational development*, 17(2), 129-143.
13. Republic of Kenya. (1976). Report of the National Committee on Educational Objectives and Policies.
14. Mbugua, J. K., Bloom, G. H., & Segall, M. M. (1995). Impact of user charges on vulnerable groups: the case of Kibwezi in rural Kenya. *Social science & medicine*, 41(6), 829-835.
15. Koech, D. K. (1999). *Totally Integrated Quality Education and Training, TIQET: Report of the Commission of Inquiry Into the Education System of Kenya*. Republic of Kenya.
16. Staffo, D. (1991). The Principal can help keep Athletics in proper perception. *The High School Journal*. 74(4), 34-56.
17. Derrick, O. D., Indoshi, F. C., & Oracha, P. (2015). Contribution of Administrative Support towards Implementation of Games Programs on Academic Achievement in Secondary Schools in Rongo Sub-County, Migori County, Kenya. *International Journal of Academic Research in Business and Social Sciences*, 5(3), 194.
18. Sifuna, D. (2005). *Illustrations of Universal Primary Education in Kenya*. Nairobi: Wajibu. Retrieved from www.africa.peacelink.org
19. Zahid, B. (2012). The effectiveness of co-curricular activities on academic achievement of Secondary school students in District Abbottabad Pakistan- A Case study. *Journal of Education and Practice*, 3(1), 90-99.
20. Yakubu, N. A. (2012). *The Effect of Social Factors on Students' Academic Performance In Nigerian Tertiary Institutions*. Dept of Computer Science. Federal Polytechnic, Auchi, Nigeria.
21. Blume, L. B., & Zembar, M. J. (2011). *Gender and Academic Achievement*. Pearson Allyn Bacon: Prentice Hall.
22. McBride, B. (2010). *Girls will be girls and boys will be boys: Teaching to gender Differences*. Retrieved from www.cor.math.arizona.edu
23. Penzner, J. B., Dudas, M., Saito, E., Olshanskiy, V., Parikh, U. H., Kapoor, S., ... & Randell, J. (2009). Lack of effect of stimulant combination with second-generation antipsychotics on weight gain, metabolic changes, prolactin levels, and sedation in youth with clinically relevant aggression or oppositionality. *Journal of child and adolescent psychopharmacology*, 19(5), 563-573.
24. AAUWEF. (1992). *Individual Differences: Gender Equity and Schooling*. Girls and Boys educational. Retrieved from www.stateuniversity.com
25. Gaylene, D. (2012). *Games for Boys and Men*. National Recreation Association. Inc. New York City: Associated Press.
26. Ary, D., Jacobs, C. L., Razavieh A., & Sorensen C. (2009). *Introduction to Research in Education* (8th Edition). Cengage Learning, Inc, Canada.
27. Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (3rd ed. Edition) London: Sage.
28. Fullan, M. (2001). *The New Meaning of Educational Change*. Columbia University: Teachers College Press.
29. Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). Abingdon, Oxon, NY: Routledge.
30. Bloomberg L. D. & Volpe, M. (2008). *Completing your Qualitative Dissertation: A Roadmap from Beginning to End*. California, Thousand Oaks: Sage Publication.
31. Mathiessen, C. (2013). *Girls' and Boys' brains. How different are they?* University of Liverpool. Retrieved from www.greatschools.org
32. Gurrian, M., & Stevens, K. (2004). *With Boys and Girls in mind*. Educational leadership Retrieved from www.ascd.org.
33. Nigera, M. I. R. (2004). *Effectiveness of Performance Appraisal in Public Enterprises in Tanzania*. Unpublished Master of Education Thesis. Mzumbe University. Tanzania
34. Odhiambo, O. (2005). *Teacher Appraisal: The experience of Kenyan secondary school teachers*. Retrieved from <http://emeraldinsig-wt.com> (10/11/2016).