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Comparative Analysis of Academic Performance of Junior High School Athletes and Non-athletes in Komenda, Edina, Eguafo and Abrim Municipality, Central Region, Ghana

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Abstract:
It is a widely held view that participation in school sports activities affects academic performance. This study therefore sought to examine the academic performance of Junior High School athletes and non-athletes in the Komenda, Edina, Eguafo and Abrim Municipality in Central Region, Ghana, to determine if participants in organised school sports activities (athletes) performed better or poorer academically compared to non-participants (non-athletes). A descriptive research design was used for the study. The sample used for the study was 946 (649 non-athletes and 297 athletes) form three students who wrote the 2014 Mock Examination, selected from eighty-eight Junior High Schools in the Central Region of Ghana. A Proforma Form was used to gather secondary data, consisting of examination scores and sports status of students, for the study. Percentages and the Independent Sample t-test were used to analyze data. The findings showed that there were no significant differences in academic performance between athletes and non-athletes at the Junior High School level in the municipality. The implication is that students should be encouraged to participate in school sports activities since participation did not affect academic performance. It is recommended that the Ghana Education Service should put in place policies that encourage stakeholders to sustain participation in school sports activities.

Keywords: *Academic performance, athlete, non-athlete, sports participation, junior high school*

1. Introduction

Sports started with the beginning of life and it is used for different purposes in time. Sports are the activities involving power and skills, competition, strategy, and (or) chance, and engaged in for the enjoyment, satisfaction and (or) personal gain (such as income) of the participant, and (or) others (e.g., spectators), including organized and recreational sports, as well as sports as entertainment (Öcal, 2006). Sports play very important roles in educational institutions in virtually all parts of the world, and the contribution of sports to the educational process in institutions cannot be overemphasized (Ongong'a, Okwara, & Okello, 2010).

Extracurricular activities including school sports are sometimes referred to as students' activities or co-curricular activities. School Sport is part of the educational process formed by the combination of the competitive characteristic of sports and the educational characteristic of physical education. School sport activities support and directs the academic mission of schools and it is more than an extension of a good educational programme (Öcal, 2006). Gholson (1985) stated that there is a positive correlation between student involvement in co-curricular activities and success in non-academic pursuits following high school and college, while Joekel (1985) also pointed out that achievement in co-curricular activities is a factor that can predict success in life beyond school. It is believed that involvement in organized sports activities allows young people to learn (in a presumed "safe" environment) many of life's lessons and develop desired attributes within the mainstream society (Smoll & Smith, 2002). Engagement in school sports programmes is supposed to promote boys' and girls' moral functioning, self-discipline, ability to work with others, and capacity to compete and effectively cope with success as well as failure (Mahoney, Eccles, & Larson, 2005).

There are those who argue for reduction of opportunities for physical activity or sports within a youngster's day (particularly during her/his school day) because the academic progress of girls and boys is reduced when children or adolescents spend more time in

Physical Education (PE) or after-school sports (Lindner, 1999; Shephard, 1997). Evidence does suggest that sports participation (or quality PE curricular offerings) does not necessarily diminish academic performance and is sometimes associated with greater classroom achievement (Lindner, 1999; Shephard, 1997). It has also been suggested that any positive interdependence between sports or physical activity engagement and academic accomplishment is probably as a result of the indirect effects of participation on young people's self esteem and physical health (Barnett, Smoll, & Smith, 1992; Tremblay, Inman, & Williams, 2000; Whitehead & Corbin, 1997).

The word academic has to do with school or college studies or learning, in other words it designates the intellectual aspect of education particularly the final subjects that deal with organized knowledge (Hornby, 1991). Academic performance refers to the performance that falls within a specified standard. The specified standard is usually called a pass mark and the pass mark is a score above average which students are considered having passed and below which students are considered having failed (Tope, 2011). Academic performance has been described as the scholastic standing of a student at a given moment. This scholastic standing could be explained in terms of the grades obtained in a course or groups of courses (Adeyemi, 2011).

2. Statement of the Problem

Today's harsh economic condition is affecting funding for schools, resulting in some schools across various countries, opting to cut school sports in order to save money. Arguments used to justify such cuts in school sports include; it does not benefit all students, it is costly to organise and maintain (Schneider, 2010), it is a hindrance to academic success and a waste of students' precious time (Rintaugu, 2012). In Ghana, it has been observed that some stakeholders have denied students the opportunity of participating in organized school sports activities on the excuse that it retards academic work in schools (Arthur-Norman, 2010), or it affects students' academic performance (Adzaku, 2012). In an era where academic grades supersede every other consideration in our educational institutions, there is need to provide empirical evidence to show whether participation in school sports affects academic performance positively or negatively. Providing such evidence to policy makers is important because too many educational policy decisions and discussions occur in the absence of empirical evidence (Bowen & Green, 2013).

Most studies relating to effects of sports participation on academic performance have been carried out in America and Europe (Bowen & Green, 2013; Kelepolo, 2011; Ludwig, 2010; Schneider, 2010; Tower, 2008; Zeiser, 2008; Larson, Hansen & Moneta, 2006; Olson, 2006; Morgan, 2005; O'Dea, 1994; Holland & Andre, 1987), with very little done in a country like Ghana, giving its unique type and level of educational system. To this researcher, Adzaku (2012) and Arthur-Norman (2010) are the only studies carried out in Ghana relating to effects of sports participation on academic performance. These studies, like most studies reviewed globally, concentrated on Senior High School students and not Junior High School (J.H.S) students, although students in Junior High Schools also participate in organized school sports activities. It also appears most of these studies relating to sports participation and academic performance utilised grades and Cummulative Grade Point Averages (CGPA) as measures of academic performance (Adzaku, 2013; Arthur-Norman, 2010; Stephens & Schaben, 2002; Overton, 2000; Eccles & Barber, 1999; Whitley, 1999; Amuchie, 1986) rather than raw scores in examinations. It is in the light of these identified research gaps that this study titled "Comparative Analysis of Academic Performance of Athletes and Non-Athletes in Junior High Schools, Central Region, Ghana" was carried out. The study was carried out by comparing the academic records of athletes and non-athletes in Junior High Schools (J. H. S.) in Central Region, Ghana, to find out if there were any differences. Also, the issue of gender as relating to effects of sports participation on academic performance among Junior High School students was addressed by this study. This study therefore sought to examine the academic performance of Junior High School athletes and non-athletes in the Central Region of Ghana by analyzing their J.H.S. 3 Super Mock Examination results (raw scores) in core subjects (english, mathematics, science and social studies) to determine if participants in organised school sports activities (athletes) performed better or poorer academically compared to non-participants (non-athletes).

3. Research Question

i. What percentage of athletes and non-athletes passed or failed in each of the core subjects (English, Mathematics, Science and Social Studies) in the 2014 J.H.S. 3 Super Mock Examination.

4. Hypotheses

i. There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in English.
ii. There will be no significant difference in academic performance between athletes in the 2014 J.H.S. 3 Super Mock Examination in Mathematics.
iii. There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in Science.
iv. There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in Social Studies.

5. Significance of the Study

This study is significant in the following ways: (i) it will add up to the body of knowledge in the area of sports participation and academic performance of Junior High School students; (ii) it will also be beneficial to Junior High School students in Central Region, Ghana, as it will motivate students to participate in organized school sports since the findings suggest that participation in school sports does not affect academic performance negatively; and (iii) it will also provide the needed evidence to parents, school

authorities, the Ghana Education Service and Ministry of Education to encourage Junior High School students to participate in school sports activities, and also modify and sustain the way students participate in school sports in the Central Region of Ghana.

6. Literature Review

Several studies conducted prove that participation in school sports have desirable effects on academic performance of students (Hartmann, 2008; Moriana, Alcala, Pino, Herruzo, & Riuz, 2006; Newman, 2005; McInally, 2003; Stephens & Schaben, 2002; Burnett, 2001; Eccles & Barber, 1999; Fejgin, 1994; Matano, 1992; Butterfield & Brown, 1991). One of such research was conducted by Whitley (1999) involving 285, 805 students from 306 High Schools from North Carolina between 1993 and 1996 on the effects of sports participation on academic performance. The results of the study showed clearly that high school athletes outperformed non-athletes in all areas of the research. Mean GPA of athletes was 22.66% higher than that of non-athletes. Each of the four athlete subgroups outperformed their respective non-athlete subgroup. Each athlete subgroup also outperformed the non-athletes as a whole. The difference between the highest and lowest mean GPA of the athlete subgroups was .08 and the difference between the highest and lowest mean GPA of the non-athlete subgroup was .19 which showed a solid consistency (Whitley, 1999).

Critiquing the findings of Whitley (1999), Overton (2000) conducted another research in North Carolina. The research included 125,000 high school students from 131 North Carolina schools from 1999 to 2000. Overton (2000) considered seven different dependent variables including, GPA, attendance rate, two different end-of-course testing components, discipline referrals, dropout rate and graduation rate. The North Carolina Student Information Management System (SIMS) was implemented by the participating schools ensuring data accuracy. SIMS is a web based data collection program that integrates aspects of public schools. The results showed a mean GPA of 2.98 on a 4 point scale for student athletes. Comparatively, non athletes had a mean of 2.17. With regards to end of year tests, Overton's research showed that athletes had a mean of 66.1 on the Algebra End of Course Testing, compared to a 57.9 for non-athletes. The mean score for athletes was higher on the English End of Course Testing, this time by 11 points, with a mean score of 61.4 versus. a 50.8 for non-athletes. For every subgroup studied, the mean GPA for athletes was higher than non athletes, ranging from 17 percent to 23 percent higher depending on the subgroup. Although the findings did not surprise Overton given the previous research conducted by Whitley (1999), it was strange on how significant the differences were. Also these differences were held true no matter how the data on gender, age, race or socio-economic status was compared (Overton, 2000).

Beckett (1999) and White (2005) concluded from their separate researches that participation in school sports had positive correlations with self-esteem, popularity and peer respect which had positive effects on student academic performance. Carlson, Scott, Planty & Thompson (2005) found out that eight years after high school graduation for student athletes and non-athletes, the student athletes were more successful in continuing their education, finding jobs and had better health status than the non-athletes. Eccles and Barber (1999) utilising longitudinal data from the Michigan Study of Adolescent Life Transitions, found out that students who participated in team sports had higher-than-expected GPAs in the twelfth grade than their counterparts who did not participate in sports. Marsh (1992) also reported similar results, that sports participation was positively related to senior grades after controlling for grades in the 10th grade in his study. In a study using a national survey sample, Lipscomb (2006) found out that high school sports participation resulted in a two percent (2%) increase in standardized math and science test scores, net of other background factors and social variables. Also, student-athletes were five percent (5%) more likely to aspire to attend college than their non-athletic peers. Stegman and Stephens (2000) carried out a research titled "Athletics and academics: are they compatible"? . Findings of the study enabled the lead researcher, Mark Stegman to confidently argue that athletics or sports participation did not hurt academic performance, rather it instilled desirable qualities such as physical fitness, goal setting, teamwork, and self-discipline that help in all areas of the students' live, including his or her academics (Stegman & Stephens 2000). A study was carried out by Stephens and Schaben (2002) involving eighth graders in a Nebraska middle school in 1998/1999, revealed the following: athletes had significantly higher GPAs than non-athletes which was evident in the full group comparisons and in the same sex comparisons; athletes also had significantly higher math CAT scores than non-athletes as well. From the study the researchers concluded that participation in school sports could help students build discipline, set goals, organize time, and develop self-confidence (Stephens & Schaben, 2002).

Lumpkin and Favor (2012) examined the academic performance of high school athletes and non-athletes to determine whether participation in sports enhances or detracts from academic achievement, found out that in most areas, athletes clearly outperformed non-athletes. Athletes self-reported higher GPAs than did non-athletes. As a group, 80.5% of athletes reported having a 3.0 GPA or higher compared to only 69.5% of non-athletes who reported this same level of academic performance. In addition to outperforming non-athletes on self-reported GPA, Kansas high school athletes graduated at a much higher rate (98%) than did non-athletes (88%). These data confirmed that athletes were more likely to graduate than were non-athletes, although athletes were being required to maintain academic eligibility in order to participate in sports. The results further showed that both athletes and non-athletes' mean scores in all areas of the ACT (English, Math, Science, Reading, and Composite) exceeded the national average of 21.1. More importantly, several statistically significant differences emerged. As a group, Kansas high school athletes scored significantly higher on the ACT mathematics and science tests than did non-athletes. Unlike the ACT where athletes outperformed non-athletes in math and science, but non-athletes performed higher in reading, results on the Kansas state assessments showed that athletes outperformed non-athletes in all areas and in all years for which data were available. From the results athletes scored significantly higher than did non-athletes in math, reading, history/government, writing, and science each year, starting from 2006. Overall, the researchers (Lumpkin & Favor, 2012) concluded that from the study it was found that athletes outperform non-athletes in several academic areas, although no causal relationships were established. In a survey study of 11,995 male students, Snyder and Spreitzer (1990) found supportive evidence that athletic participation enhanced later success in academics. White (2005) researched on the effects of athletic participation on academic achievement and found out that teachers surveyed reported that athletic participation does have a positive

effect on other areas of student life including academic achievement, student attitude, work ethic, self esteem, student choices concerning drug and alcohol use, student behavior and development of social skills.

Rintaugu (2012) studied the effects of participation in competitive sport on academic performance of secondary school students in Nairobi Province, Kenya. Results showed that athletes consistently performed better than non-athletes in the measures of academic performance. Khan, Jamil, Khan and Kareem (2012) also conducted a research to find out the views of teachers and students on the relationship between participation in sports and academic achievement of college students in a southern district of Khyber Pakhtunkhwa Province of Pakistan and concluded that there was a link between participation in sports and academic performance and that sports activities had a positive influence on the education of the youth. The researchers further stressed that these sports activities were helpful in enhancing the academic mission of the schools, maintaining the academic focus of students, providing students with the ability to succeed academically, improving the mental or cognitive development of youth as well as scoring high grade point averages and class tests results. Fejgin (1994), a supporter of the positive effects of sports participation on academic performance, carried out a study that looked at the relationship between participating in high school sports and student educational outcomes such as, grades, self-concept, discipline problems, and educational aspirations. Results showed that participation in sports activities was significantly associated with higher grades among tenth graders after controlling these students' grades in the eighth grade. The researcher concluded that although the effects in the study were not large enough, they were statistically significant and very consistent across all of the analyses. Zaugg (1998) also compared the academics of athletes and non-athletes in a rural high school in a study. Results of the study showed that there were significant differences in mid-term grades in science, in which, the athlete group was significantly higher than that of the non-athlete group. Similar significant differences were found in the final grades. Zaugg (1998) concluded from the research that athletes were matching or exceeding non-athletes' academic and behavioral performances whilst participating in sports. Jeroh (2012) studied the impact of sports competitions on overall educational achievement of Nigerian University students and concluded that participation in sports competitions had significant positive impact on the overall academic achievements of participants.

According to Zeiser (2008), in the view of Coleman's (1961) 'Zero Sum Theory' which states that time is finite, therefore time spent on sports activities directly detracts from time spent on academic endeavors, athletes are expected to have lower grades and test scores than non-athletes because time that should be reserved for studying and doing homework is instead taken up with the many hours of training and performance that sports activities entail. Supporting Coleman's (1961) believe, Edwards (1986) found out in a study that participation in high school sports diverts energy away from efforts to excel in academic work. Streich (2009) another supporter of the zero sum hypothesis argued that the late nights at games, travel, and practices may negatively affect academic performance of athletes because the student-athlete did not have enough time or energy to devote to achieving high academic performance levels. Excessive practice schedules could influence the time available for a student to study, and this could negatively affect the academic performance of the student-athlete. Streich recommended that high school sports participation should be balanced with academics so that participation would not negatively affect the academic performance of students. Meyer (1990), Parham (1993), Cantor and Prentice (1996), Simons, Van Rheenen, and Covington (1999) all agreed with Coleman (1961) that the time demands of sports programmes force student-athletes to sacrifice attention to academics, making it difficult for them to devote time to study or earn good grades and that greater commitment to sports and less to academics is linked with lower grade point averages. Khan et al. (2012) reported that a study conducted in Canada in 2000 indicated a negative association between participation in sports and standardized test scores. Cornelißen and Pfeifer (2007) are of the view that some researchers assume participation in sports is detrimental to the academic outcomes of adolescents. Although the study carried out by Lumpkin and Favor (2012) strongly supported positive associations between sports participation and academic performance on most of the indices measured, the researchers still found out that as a group, non-athletes performed significantly better than athletes in Reading. Also male athletes failed to outperform male non-athletes on the ACT. Instead, male non-athletes scored significantly higher on ACT English, Reading, and composite scores than did male athletes. Ludwig (2010), referring to Din (2005), pointed out that participating in too many sports activities could have negative effects on student academic performance. Ludwig (2010) further stated that a lack of balance between academics and sports could result in diminishing academic performance for students. Ludwig (2010) referred to a study carried out by Cutright that found sports participation to lower grade point averages of students over a four year high school period. Observation from the results of the study, according to Ludwig (2010), pointed out that while participation in athletics could help some students, it did not help all. Meier, Eller, Marchbanks III, Robinson, Polinard, & Wrinkle (2004) found out that sports programmes could negatively impact on the academic skills of entire schools if students' loyalty to sports competed with the schools' academic mission. These researchers also reported that while school sports were positive for individuals who did participate in, it could have negative consequences for those who did not.

While acknowledging the role of sports participation on the overall development of the high school student, Streich (2009) argued strongly that a cost of sports participation was poor academic performance in school. According to Gorman (2010), the stated benefits of high school sports have been refuted by researchers such as Beem (2006), Gehring (2004), Zimmerman (1999) and McMillen (1991) who argued that the sports agendas of high schools were affecting the academic development of student athletes. The impact of school systems, parents, community members and coaches are seen by Murphy (2008), Burgess (2007) and Bukowski (2001) to be responsible for the negative influence of sports participation on academic performance of student athletes. Dipale (2010) cited Lueptow and Kayser (1974), Hauser and Lueptow (1978) as having discovered from comparative studies that athletes did not show as much improvement in grades during high school years as non-athletes did. Morgan (2005) upheld that quite a number of studies reported that athletes were less successful academically than non-athletes and those athletes who participated in revenue producing sports were less successful academically than athletes who participated in non-revenue sports as well as non-athletes. This position is supported by Shulman and Bowen (2001) who found out from a study that athletes who played all types of sports under-performed

academically, but the underperformance was more pronounced for athletes who played high-profile sports such as football, basketball and hockey. Marcotte (1986) carried out a study to compare the academic performance between Cincinnati Technical College basketball players and non-athletes and results showed that basketball players had significantly lower mean GPA than their matched non-athlete counterparts (1.98 to 2.29). Maloney and McCormick (1993) using data from students enrolled at Clemson University during the academic year 1989-89, also reported similar results when they found out that the athletes group as a whole had significantly lower college GPA than the overall student body, 2.37 to 2.68.

Arthur-Norman (2010) conducted a study in Ghana where he compared the academic performance of athletes and non-athletes, using respondents from a single Senior High School. Data was collected using student questionnaires as well as end-of-term academic records. Mean scores for athletes and non-athletes were reported as follows; English Language- 63.85 and 60.26; Mathematics- 60.47 and 59.91; Integrated Science- 57.73 and 60.84; Social Studies- 70.80 and 71.30. T-test analysis showed that there were no statistically significant differences in the academic performance of athletes and non-athletes in these subjects.

Amuchie (1986) concluded from a study that there was no significant difference in the mean grade point average of athletes and non-athletes in general, although Grade Point Average (GPA) of male athletes was significantly higher than that of male non-athletes. A study by Lumpkin and Achen (2014) found out that there were no significant differences between athletes and non-athletes in Maths and Science in ACT subscores, although significant differences were found in other subjects. Samuelson (2011) also conducted a research to determine if student athletes were more successful in school than non-athletes at two middle schools located in the same school district in Western North Carolina. The t-test results obtained showed that students who participated in interscholastic sports (M = 90.26, SD = 8.33) tended to score about the same in final grade maths as those who did not participate in interscholastic sports (M = 88.03, SD =10.81) in School.

Shriver (2008) studied the effect of athletic participation on academic achievement of middle school students in Tennessee. Results revealed that statistically significant differences were not found in academic performance on Tennessee Comprehensive Assessment Programme Achievement Test for Social Studies ($F = .32$, $p > .05$) between athletes and non-athletes. Melnick, Sabo and Vanfossen (1992) also carried out a research to examine the relationship of sport participation on the academic achievement of African-American and Hispanic students. The results showed among other things that sport participation was generally unrelated to grades and standardized test scores. Jefferson (1999) carried out a study involving two rural high schools in Mississippi and also found no differences between the GPAs of athletes and non-athletes. Stencil (2005) found out in a study on the relationship between sports participation and academic achievement that, there was no significant statistical difference in academic achievement of participants and non-participants. Gadžić (2009) reported that results from studies conducted by Coe, Pivarnik, Womack, Reeves, and Malina (2006), McGee (2001), Tremblay, Inman and Williams (2000), Sallis, McKenzie, Kolody, Lewis, Marshall and Rosengard (1999) showed lack of influence of sport participation on academic achievement. In a similar vein, Sanders, Field, Diego and Kaplan (2000) found out that sports participation did not affect students' grade point average. In 2002, the South Dakota Board of Regents implemented a policy to establish an athletic academic report designed to compare athletes' and non-athletes' academic performance across the six Regental institutions. For ACT scores in English and Maths, results contained in the report revealed no statistically significant differences between athletes and non-athletes. For College Assessment of Academic Proficiency (CAAP) examination, the results in mathematics showed that athletes averaged slightly higher scores ($\bar{x}$ =59.7 vs. $\bar{x}$=59.6), though this difference was also statistically non-significant (South Dakota Board of Regents, 2012).Gorman (2010) carried out a causal-comparative study with a narrative component to investigate the effect of athletic participation on the academic achievement of senior student athletes and non-athletes who attended three public high schools in Eastern Tennessee. The researcher found out that sports participation did not affect academic achievement for high school senior athletes who graduated in 2009 from the three target high schools when compared to non-athletes. Marsh (1993) in a popular study on the effects of sports participation on academic achievement concluded that participation in high school sports had no negative or positive effects on student academic achievement. Montgomery (2010) found no significant difference in the performance of African-American athletes and non-athletes in Language Arts, Maths, Science and Social Studies when their mean grade point averages in each of these subjects were compared. Crosnoe (2002) also analyzed data on students in 9 California and Wisconsin schools in 1987 and 1990 and found out that although athletes were high achievers and sports participation promoted academic performance, the academic achievement of athletes neither increased nor decreased over time. It rather maintained a successful academic projection.

Din (2005) investigated whether rural high school students' participation in school sponsored sports activities had any impact on their academic achievement. The study specifically investigated whether there was a difference between the participating students' immediate pre-season grades and their immediate post-season grades in English, math, science, and social science. Results obtained indicated that no systematic significant differences were found between the participating students' pre-season and post-season academic grades, or the students did not achieve less at the end of the sports season. The results also showed that in the comparisons of team academic records, no significant differences were found. Generally speaking, participating in school sponsored sport activities did not make any changes on the participating students' learning outcomes. As the data indicated, their grades remained basically unchanged in both seasons, or rather their participating in sport activities did not seem to have any impact on their academic learning. Based on the results of the study, it was concluded that participating in school sports during pre-season or post-season did not significantly affect grades of students.

7. Methodology
A descriptive research design was used for this study. Descriptive research design is to determine the degree to which variables are associated. The comparative descriptive research design was deemed appropriate for this study because the purpose was to compare the academic performance of Junior High School athletes and non-athletes using descriptive and inferential statistics.

8. Population of the Study
The population comprised all 1,893 Form Three students who wrote the 2014 J.H.S. 3 Super Mock Examination in the Komenda, Edina, Eguafo and Abrim Municipal Area of the Central Region of Ghana (Data was obtained from the KEEA Municipal Directorate of the Ghana Education Service).

9. Sample and Sampling Procedure
A sample of 946 (comprising 297 athletes and 649 non-athletes) was selected for the study using proportional stratified random sampling technique. The accessible population of 1,893 form three students was put into two strata, i.e. athletes (594) and non-athletes (1, 299). The 297 athletes and 649 non-athletes selected, representing 50% of athlete and non-athlete strata, reflected the proportion of athletes to non-athletes in the accessible population. From the two strata simple random sampling (alternate numbers) was employed to select 297 athletes and 649 non-athletes giving a sample size of 946.

10. Research Instrument
The data collection instrument was a Proforma Form. Secondary data was utilized in this study. The data comprised sports status and academic performance records measured as English, Mathematics, Science and Social Studies results (raw examination scores) of the sample during 2014 J.H.S. 3 Super Mock Examination. All data were obtained from the KEEA Municipal Directorate of the Ghana Education Service (examination and sports units).

11. Validity and Reliability of the Instrument
The J.H.S. 3 Mock Examination is deemed valid and reliable in that it is a standard examination that is aligned to the curriculum of Basic Education and measures the readiness of the final year students to take the Basic Education Certificate Examination (B.E.C.E). According to Okyere (2013) studies conducted have shown that the J.H.S. 3 Mock Examination correlates well with the B. E. C. E. Although results of the J.H.S. 3 Mock examination are valid and reliable, the process of extracting such data from its original source for research purposes could render such data invalid. To ensure that the data was not compromised in any way, the Proforma Form that was used to record these results and other data needed was shown to experts in the area of physical education and sports in the University of Ilorin, Nigeria and the University of Cape Coast, Ghana, to assess its face validity. The experts ensured that all relevant data needed to be recorded were included. Suggestions regarding what variables to include and not to include as well as the arrangement of the data, from the experts were imputed into the final Proforma Form. Reliability on the other hand is, literally, the extent to which one can rely on the source of the data and, therefore, the data itself. Reliable data is dependable, trustworthy, unfailing, sure, authentic, genuine, reputable. Consistency is the main measure of reliability (Pierce, 2007). The J.H.S. 3 Super Mock Examination results, being examination results obtained from the Ghana Education Service, were considered reliable enough to be used for this study.

12. Procedure for Data Collection
Data was collected after permission was granted by the KEEA Municipal Directorate of the Ghana Education Service. Officers in charge of records, examination and sports at the Directorate provided the researcher with the needed data for the study. The use of serial numbers instead of names assured the Directorate of the confidentiality of their students. All data was collected by the researcher.

13. Data Analysis
Data was analyzed using descriptive and inferential statistics. Percentages were used to answer the single research question raised, whiles the t-test for two independent samples was used to test the four research hypotheses formulated using a significance level of .05 alpha.

14. Results

Sports Status	Frequency	Percentage
Athlete	297	31.4
Non-athlete	649	68.6
Total	946	100

Table 1: Distribution of Sample by Sports Status

Table 1 shows that out of the 946 form three students whose examination results were used for this study, 297 (31.4%) were athletes while 649 (68.8%) were non-athletes.

14.1. Research Question 1

What percentage of athletes and non-athletes passed or failed in each of the core subjects in the 2014 J.H.S. 3 Super Mock Examination.

		English		Maths		Science		Soc. Stud.	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
Athlete	Pass	132	44.4	96	32.3	86	29.0	178	59.9*
	Fail	165	55.6	201	67.7	211	71.0	119	40.1
Total		297	100.0	297	100.0	297	100.0	297	100.0
Non-athlete	Pass	298	45.9	180	27.7	168	25.9	339	52.2*
	Fail	351	54.1	469	72.3	481	74.1	310	47.8
Total		649	100.0	649	100.0	649	100.0	649	100.00

Table 2: Percentage of Athletes and Non-athletes Who Passed or Failed the 2014 J.H.S. 3 Super Mock Examination in Core Subjects

Table 2 shows that for athletes, 44.4% passed and 55.6 failed in English, 32.3% passed and 67.7% failed in Mathematics, 29.0% passed and 71.0% failed in Science, whilst 59.9% passed and 40.1% failed in Social Studies. For non-athletes, 45.9% passed and 54.1% failed in English, 27.7% passed and 72.3% failed in Mathematics, 25.9% passed and 74.1% failed in Science, whilst 52.2% passed and 47.8% failed in Social Studies. Results from Table 2 revealed that more than 50% of athletes and non-athletes failed in English, Mathematics and Science, with more than 50% of the two groups passing in only Social Studies. This means that the performance of athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in core subjects was generally poor.

14.2. Hypothesis 1

There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in English.

Sports status	Mean	SD	N	t	df	Sig (2-tailed)
Athlete	48.07	15.96	297			
				.988	944	.323
Non-athlete	49.23	17.06	649			

Table 3: Independent Sample t-test Showing Mean Score of Athletes and Non-athletes in English in the 2014 J.H.S. 3 Super Mock Examination

Table 3 shows that athletes had a mean score of 48.07 (SD = 15.96, N = 297), whilst non-athletes had a Mean Score of 49.23 (SD = 17.06, N = 649) in English. The mean scores for both athletes and non-athletes reveal that both groups on average obtained less than 50 marks in English during the examination, meaning that performance in terms of English for both athletes and non-athletes can be described as below average in the examination. The mean scores also show that non-athletes scored slightly higher than athletes in English, however a look at the standard deviation (SD) for the two groups reveals that scores in English for athletes were much similar than scores of non-athletes. In other words, more athletes scored closer to their mean than non-athletes. Results from Table 3 also revealed that although non-athletes scored slightly higher than athletes in English, the t-test obtained was not significant (t = .988, df = 944, p = .323). That is comparison of mean scores in English for athletes (Mean = 48.07, SD = 15.96, N = 297) and non-athletes (Mean = 49.23, SD = 17.06, N = 649) indicated no significant differences between the two groups, thus the Hypothesis that stated that there will be no significant difference between athletes and non-athletes mean scores in the 2014 J.H.S. 3 Super Mock Examination in English in Central Region, Ghana, was retained. This means that performance in English was similar for all students during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes.

14.3. Hypothesis 2

There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in Mathematics.

Sports status	Mean	SD	N	t	df	Sig (2-tailed)
Athlete	42.34	13.36	297			
				-1.181	944	.238
Non-athlete	41.27	12.74	649			

Table 4: Independent Sample t-test Showing Mean Score of Athletes and Non-athletes in Mathematics in the 2014 J.H.S. 3 Super Mock Examination

Table 4 revealed that athletes had a mean score of 42.34 (SD = 13.36, N = 297), whilst non-athletes had a mean score of Mean 41.27 (SD = 12.74, N = 649) in Mathematics. The mean scores for both athletes and non-athletes show that both groups on average obtained less than 50 marks in Mathematics during the examination, meaning that performance in terms of Mathematics for both athletes and non-athletes can be described as below average in the examination. The mean scores also show that athletes scored slightly higher than non-athletes in Mathematics, however a look at the standard deviation (SD) for the two groups reveals that more non-athletes (SD = 12.74) scored closer to their mean than athletes (SD = 13.36). In other words scores in Mathematics for non-athletes were much similar than scores of athletes. Results from Table 4 also indicated that although athletes scored slightly higher than non-athletes, the t-test obtained was not significant (t = -1.181, df = 944, p = .238). That is comparison of mean scores in Mathematics for athletes (Mean = 42.34, SD = 13.36, N = 297) and non-athletes (Mean = 41.27, SD = 12.74, N = 649) showed no significant differences between the two groups, thus the Hypothesis that stated that there will be no significant difference between athletes and non-athletes mean scores in the 2014 J.H.S. 3 Super Mock Examination in Mathematics in Central Region, Ghana, was retained. This means that performance in Mathematics during the 2014 J.H.S.3 Super Mock Examination was the same for all students irrespective of whether some of them participated in organized schools sports activities or not.

14.4. Hypothesis 3

There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in Science in Central Region, Ghana

Sports status	Mean	SD	N	t	df	Sig (2-tailed)
Athlete	40.56	14.61	297			
				.373	944	.709
Non-athlete	40.18	13.17	649			

Table 5: Independent Sample t-test Showing Mean Score of Athletes and Non-athletes in Science in the 2014 J.H.S. 3 Super Mock Examination

Table 5 shows that athletes had a mean score of 40.56 (SD = 14.61, N = 297), whilst non-athletes had a mean score of Mean 40.18 (SD = 13.17, N = 649) in Science. The mean scores for both athletes and non-athletes reveal that both groups on average obtained less than 50 marks in Science during the examination, meaning that performance in terms of Science for both athletes and non-athletes can be described as below average in the examination. Mean scores in Science for the two groups are almost the same, however a look at the standard deviation (SD) for the two groups reveals that scores in Science for non-athletes (SD = 13.17) were much similar than scores of athletes (SD = 14.61). In other words, more non-athletes scored closer to their mean than athletes. Results from Table 5 also showed that the t-test obtained was not significant (t = .373, df = 944, p = .709). That is comparison of mean scores in Science for athletes (Mean = 40.56, SD = 14.61, N = 297) and non-athletes (Mean = 40.18, SD = 13.17, N = 649) revealed no significant differences between the two groups, thus the Hypothesis that stated that there will be no significant difference between athletes and non-athletes mean scores in the 2014 J.H.S. 3 Super Mock Examination in Science in Central Region, Ghana, was retained. This means that students' performance in Science was also very similar during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes.

14.5. Hypothesis 4

There will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in Social Studies.

Sports status	Mean	SD	N	t	df	Sig (2-tailed)
Athlete	52.91	14.56	297			
				-.523	944	.601
Non-athlete	52.18	17.48	649			

Table 6: Independent Sample t-test Showing Mean Score of Athletes and Non-athletes in Social Studies in the 2014 J.H.S. 3 Super Mock Examination

Table 6 revealed that athletes had a mean score of 52.91 (SD = 14.56, N = 297), whilst non-athletes had a mean score of Mean 52.18 (SD = 17.48, N = 649) in Social Studies. The mean scores for both athletes and non-athletes show that both groups on average obtained more than 50 marks in Social Studies during the examination, meaning that it was only in Social Studies that both athletes and non-athletes performed above average in the examination. Mean scores in Social Studies for the two groups are also almost the same, however a look at the standard deviation (SD) shows a disparity in how the scores for the two groups are spread around their means. This reveals that scores in Social Studies for athletes (SD = 14.56) were much similar than scores of non-athletes (SD = 17.48). In other words, more athletes scored closer to their mean than non-athletes in Social Studies. Table 6 also revealed that the t-test obtained was not significant (t = .523, df = 944, p = .601). That is comparison of mean scores in Social Studies for athletes (Mean = 52.91, SD = 14.56, N = 297) and non-athletes (Mean = 52.18, SD = 17.48, N = 649) showed no significant differences between the two groups, thus the Hypothesis that stated that there will be no significant difference between athletes and non-athletes mean scores

in the 2014 J.H.S. 3 Super Mock Examination in Social Studies in Central Region, Ghana, was retained. This means that performance in Social Studies was also the same for all students during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes.

15. Discussion of Findings

School-sponsored sport activities have been with students for decades. Junior High School students who participate in sports activities spend a significant amount of time on those activities. There has been an on-going debate for years among educators, parents and even students as to whether involvement in such sports activities affect student academic performance. This study therefore sought to examine the academic performance of Junior High School athletes and non-athletes in the Central Region of Ghana by analyzing their J.H.S. 3 Super Mock Examination results in core subjects to find out if participants in organised school sports activities performed better or poorer academically compared to non-participants and also to find out the effects of gender on the academic performance of these athletes and non-athletes.

The study revealed that performance in core subjects was generally poor. Less than 50% of both the athlete and non-athlete groups passed in English, Maths and Science, except Social Studies where more than 50% of both groups passed. Mean scores for the two groups in each of the core subjects reveal a similar trend of poor performance. Mean scores in English, Maths and Science was below 50 marks. Again it was only in Social studies that mean scores for both groups was above 50 marks. What could account for such poor performance? Can participation in school sports be the reason for such poor performance, as postulated by some stakeholders (Adzaku, 2012)? Clearly such an assumption is not supported by the findings this study. Although outside the scope of this study, it is important that further research is conducted by the Directorate of the G. E. S. to find out the causes of such poor performance considering the fact that G. E. S. spends huge sums of money in conducting such examinations for final year students annually.

Hypothesis 1 which stated that there will be no significant difference in the mean score of athletes and non athletes in the 2014 J.H.S. 3 Super Mock English Examination in Central Region, Ghana, was retained, implying that performance in English was similar for all students during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes. Similar findings have been reported by the South Dakota Board of Regents Report (2012), Arthur-Norman (2010) and Din (2005). The South Dakota Board of Regents Report (2012) revealed that there were no significant difference in performance between athletes and non-athletes in ACT scores in English. Using End-of-Term Examination as the measure of academic performance, Arthur-Norman (2010) found out that there were no significant differences in mean scores in English between athletes and non-athletes. Din (2005) also reported no significant differences in pre and post-season English grades between rural high school students who participated in school sports activities and those who did not participate. Results from this study however contrast with findings reported by Lumpkin and Favor (2012), Broh (2002) and Overton (2000) who all found significant differences in performance between athletes and non-athletes in English using different forms of assessment for academic performance.

Hypothesis 2 stated that there will be no significant difference in the mean score of athletes and non athletes in the 2014 J.H.S. 3 Super Mock Maths Examination in Central Region, Ghana. This was retained, meaning that performance in Maths during the 2014 J.H.S.3 Super Mock Examination was the same for all students irrespective of whether some of them participated in organized schools sports activities or not. The findings of this study collaborate with finding of Lumpkin and Achen (2014), South Dakota Board of Regents Report (2012), Samuelson (2011), Arthur-Norman (2010), Montgomery (2010) and Din (2005). Researchers such as Lumpkin and Favor (2012), Lipscomb (2006), Broh (2002), Stephens and Schabens (2002) and Overton (2000) however reported results that differed with the findings of this study. They all found significant differences in performance between athletes and non-athletes in Maths in various examinations or tests.

Hypothesis 3 which was also retained revealed that there is no significant difference in the mean score of athletes and non athletes in the 2013/2014 J.H.S. 3 Super Mock Science Examination in Central Region, Ghana. This implied that student performance in Science was also very similar during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes. Results from Lumpkin and Achen (2014), Montgomery (2010), Arthur-Norman (2010) and Din (2005) marched markedly with the findings of this study, whilst findings from studies by Lumpkin and Favor (2012), Lipscomb (2006) and Zaugg (1998) contradicted what was found by this study.

Hypothesis 4 which stated that there will be no significant difference in the mean score of athletes and non athletes in the 2014 J.H.S. 3 Super Mock Social Studies Examination in Central Region, Ghana, was also retained, meaning performance in Social Studies was markedly similar for all students during the 2014 J.H.S. 3 Super Mock Examination irrespective of whether some were athletes or non-athletes. Montgomery (2010), Arthur-Norman (2010), Shriver (2008) and Din (2005) all reported findings of no significant differences between athletes and non-athletes in Social Studies, collaborating the findings of this study.

The findings of these four hypotheses which stated that there will be no significant difference in academic performance between athletes and non-athletes in the 2014 J.H.S. 3 Super Mock Examination in core subjects in Central Region, Ghana, were all retained. Meaning participation in organized school sports activities did not affect the academic performance of the students positively or negatively. In other words there was no change in performance in the examination based on whether some students participated in school sports or not. Using GPA (calculated as an aggregate of all subjects taken) as the measure of academic performance, Montgomery (2010), Sanders et al. (2000), Jefferson (1999) and Amuchie (1986) all found out that there were no significant differences in academic performance between students who participated in school sports activities and those who do not. These findings collaborate with the findings of the current study. Lumpkin and Achen (2014), Lumpkin and Favor (2012), Khan et al. (2012), Stephens and Schaben (2002), Stegman and Stephen (2000), Overton (2000), Whitley (1999), Eccles and Barber (1999) and Marsh (1992) all reported significant differences in GPA between athletes and non-athletes, with athletes outperforming non-athletes,

whilst Ludwig (2010), Shulman and Bowen (2001), Marcotte (1996) and Maloney and McCormick (1993) reported significant differences in GPA with non-athletes outperforming athletes, all contradicting the findings of this study. Putting all together, this study found no significant difference in the academic performance of athletes and non-athletes in the 2014 J.H.S. 3. Super Mock Examination, meaning that participation in organized school sports activities does not directly improve or decrease marks in examinations in the KEEA Municipal Area of the Central Region of Ghana.

Based on the findings of this study, is it worthwhile for students to participate actively in organized school sports activities? The position of this researcher in answering that question is yes. The literature exposé of this study, particularly on the positive theories explaining the relationship between sports participation and academic performance show clearly that students get more than just improved grades or exam marks when they participate in organized school sports activities. Stegman and Stephens (2000) postulated that sports participation does not hurt academic performance, rather it instills desirable qualities such as physical fitness, goal setting, teamwork and self-discipline that helps in all the areas of students' live, including academics. Jeroh and Akpomedaye (2007) stated that participation in sports competitions entailed educational values ranging from intellectual development to physical, social, moral, emotional and cultural development of participants.

16. Conclusion

Based on the findings of the study, the following conclusions were arrived at: i) Performance in the 2014 J.H.S. 3 Super Mock Examination was generally poor for both athletes and non-athletes; ii) Athletes and non-athletes performed equally in each of the core subjects during the 2014 J.H.S. 3 Super Mock Examination; and iii) Poor academic performance at the J.H.S. level cannot be blamed on participation in organized school sports activities.

17. Implications of Findings

The implication is that stakeholders at the Junior High level should not discourage students from participating in organized school sports activities since the findings showed that participation in organized school sports activities does not affect academic performance. The stakeholders in charge of school sports should rather encourage students to participate in organized school sports activities to take advantage of the numerous benefits associated with school sports which will, in the long run, indirectly enhance academic performance.

18. Recommendations

The following recommendations were made based on the findings of this study: i) The Directorate of the G.E.S. should find out the reasons for the below par performance in the 2014 J.H.S 3 Super Mock Examination through research; ii) Sports participation cannot be blamed for poor academic performance at the J.H.S. level, therefore it is recommended that the G.E.S. (authority in charge of school sports) should put in place measures to ensure that no School Administrator, Headteacher or Teacher prevents students from participating in organized school sports activities on the excuse that it affects academic performance. Such measures should include adequate funding for school sports programmes and sanctions for School Administrators, Headteachers or Teachers who prevent students from participation in organized school sports activities; iii) The Sports Unit of the Municipal Directorate of the Ghana Education Service should enlighten parents through education that participation in school sports activities does not affect student academic performance, so as to help sustain student participation in school sports. This can be done through Parent Teacher Association (PTA) meetings and during Sports Festivals.

19. Suggestions for Further Studies

It will interest readers to know what teachers and students at the J.H.S. level think about the effects of sports participation on academic performance, therefore it is recommended that a survey study be conducted to sample views of teachers and students on the effects of sports participation on academic performance in the Central Region of Ghana. Also this study involved students from only one municipality in the Central Region of Ghana. It would be interesting to find out if similar conclusions can be drawn from other municipalities in the regions by replicating this study to cover those areas.

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