

Full Length Research Paper

The relationship between students' participation in school based extracurricular activities and their achievement in physics

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This study was carried out on the relationship between students' participation in school based extracurricular activities and their achievement in physics. The samples used for the research work were selected randomly from four senior secondary schools in Mainland Local Government Area of Lagos State. A total number of two hundred physics students comprising one hundred females and one hundred male students. Three null hypotheses were postulated and tested at 0.05 level of significance to find the relationship between students participation in school based extracurricular activities and their achievement in physics. The instruments used were students' questionnaire and physics students achievement test (PAT). The data collected were analyzed using simple regression statistical analysis and the results of the findings showed that school based extracurricular activities having significant influence on students' achievement in physics. Finally, it was recommended in this study that a larger sample from both rural and urban areas should be used by future researchers to give a fairly valid result; importance of extra-curricular activities to the students should be highly emphasized.

Key words: Student's participation in school based extra-curricular activities, extra-curricular activities and student's achievement in physics.

INTRODUCTION

After school extracurricular activities have long been recognized for contributing many ways to the enhanced school experience as well as to the increased social skills of students. Besides creating a school culture and promoting school spirit, extracurricular activities have been found to have a relationship with students' academic performance development of responsibility discovering their abilities and interest, self discipline and leadership skills.

Although, the programs vary drastically from hunting and home work help to sport and music activities, overall, all programs strive to be fun challenging comforting and share similar goals. These goals include most importantly education, psychosocial development, recreation and career awareness. Program help educate the student by providing them with an environment for proper study or setting aside for their quiet time. The way students choose to spend their free time can affect their school

performance. Reading after school is the activity most predictive of higher student achievement (Shumow, 2001). Reading at home is not less likely to do in today's day in age so after school reading program is entirely beneficial. It is not just traditional in class instruction that between the activities that students choose outside their classroom and their academic performance (Bringing up Girls in science, 2003) Stephen and Schaben, (2002) noted that there is a variation in the result obtained for student who participates in co curricular activities and those who do not. Simon (2001) also revealed that regardless of student background and prior achievement, various parenting, volunteering and home learning activities, extracurricular activities influences a student grade.

Involvement in a schools extracurricular activity can be an important learning experience for secondary school students as clubs, library and debating club; young

achiever club, organized essay competition and some other clubs often teach the basic concepts and values of the society as a whole. At the fore front of school reform, enrichment programs are increasing in number in number due to the importance of basic skills development, calls for academic excellence and standardized testing (Coltin, 1995). These after school hours were encouraged to be spent improving academic skills. Some research (Petit et al., 1997) found that children who participated in some activities after school were rated by their teacher as having better social skills and fewer behavior problems than children who participated either in no activities or more activities each week (Shumow, 2001).

Pierce and Vendell (1999) found that academically at risk children who attended after school programs more frequently than others developed better work habit in their classroom and attended school more often.

Another goal of extracurricular activities is to provide children with opportunities to realize their leadership potentials. Leadership is an extremely important quality for people to have in order to succeed. Leadership is learned over time through the involvement with others. Extracurricular activities encourage this by providing for them the chance to begin to understand diverse attitudes skills and talents and how to interact effectively with a diversity of people while working towards common goals. Further, extracurricular can provide a student with a personal; sense of belonging and integration with the school, causing feeling of accomplishment consequently there exists a relationship students' extra curricular activities and his sense of accomplishment in a physics class specifically in a laboratory class. All of these activities appear to have some sort of effect on students' academic performance however, the issue of whether they benefit or hinder he students' achievement in physics is unknown and that is the purpose of this research.

The development of extracurricular activities was slow in the beginning with many seeing it simply as a fad that would pass and quickly fade out of style. One of the early philosophers behind extra curricular activities was that they should wherever at all possible "grow out of curricular activities and return to curricular activities to enrich them" (Miller 1930). Eventually people including educators began to see the benefits of extra curricular activities but it took a while to incur them to it. Infact before 1900 educators where skeptical of participation in extracurricular activities believing that school students should focus solely on narrowly defined academic outcomes. Non academic activities were viewed as been primarily recreational and therefore were viewed as been primarily recreational and therefore were detrimental to academic achievement and consequently were discouraged (Marsh and Kleitman, 2002). Dean and Bear early experts on extracurricular activities said, "Extra curricular activities supplement and extend those contacts found in the more formal part of the program of

the school day (Millard, 1930). It was not until recently that "Educational practitioners and researchers have taken a more positive arguing that extracurricular activities may have positive effects on life skills and may also benefit academic accomplishment" (Marsh and Kleitman, 2002). It is obvious that extracurricular activities have an impact on academic performance and education ever since their inception.

Statement of the problem

Over the years the costs and effect of extracurricular activities have generated many studies and numerous debates in their relation to academic performance. Parents and school Personnel alike have had controversies on whether a great deal of time and money should be devoted to these activities especially in this time of tight budget. They believed that students should focus solely on a narrowly defined traditional in class instruction that impact academic achievement. Educationists are interested in the relationship between academic achievement and participation in extra curricular activities implying that these activities do have some sort of influence on how students perform academically (Stephen and Schaben, 2002). Whether or not there is a relationship between students participation in school based extracurricular activities and students performance in physics is yet to be undertaken empirically.

LITERATURE REVIEW

Extracurricular activities are activities performed by students that fall outside the realm of the normal curriculum of the school. Also known as enrichment programs they are courses offered by educational facilities to help promote skills and high level of thinking for students. The theory of multiple intelligences developed by Gardner in 1993 broadens our view of how humans learn and realize their potential. This theory explains how a variety of skills and talents help to strengthen an individual so it is important for students to be exposed to a variety of different activities to explore their interest and capabilities.

Extracurricular activities such as sports, drama music, scouting, dance and various clubs are an important part of the educational experience of many students. Most studies find that children who participate in their activities are more successful academically than those who do not, it is not clear whether this is because the brighter more energetic students are also the ones who participate more in extracurricular activities, or whether the activities themselves boost students' academic performance.

Extracurricular activities offer benefits for a child who is

not gifted academically, the chance to excel in the arts or in sports, for example can make a huge difference in self esteem. Many extracurricular activities teach real world skills such as journalism, photography or debate which can lead to life long interests' even careers Teens and preteens who devote themselves to service project such as food drives, book drives of neighborhood imperilment projects, learn that they can make a difference and contribute to society. They also learn team work and leadership skills that may be even important in the long run than some of the academic subject they study.

Dyson (2002) revealed that extracurricular activities strengthen the integration of students with severe disabilities as well. Many students with disabilities can acquire the skills necessary to participate partially in clubs offering sports, newspaper, student council and social events such as dances. These programs give disabled children the opportunity to work with other children disabled like themselves and non-disabled students in a positive environment where everyone can participate in one way or the other.

Another goal of extracurricular activities is to provide children with opportunities to realize their leadership potential. Leadership is an extremely important quality for people to have in order to succeed. Leadership is learned over time through the involvement with others. Extracurricular activities encourage this by providing for them the chance to begin to understand diverse attitude skills and talents and how to interact effectively with a diversity of people while working toward a common goal (Karnes and Bean, 1990).

Furthermore, extracurricular activities provide a student with a personal sense of belonging and integration with the school causing feeling of accomplishment, self worth and high self esteem in adolescent, especially from activities that lead to publicity from their participation. By providing a collective outlet where developing adolescent can focus, creates a safe and healthy means of spending after school hours.

Extracurricular activities also play a role in reducing drug and alcohol use and irresponsible sexual activities in older children would be on their own after school. Its not only a matter of keeping the kids busy the self esteem and sense of purpose that children can get from serious involvement in extracurricular activities may help raise them a reason to say no to risky behaviors.

Generally leisure is an important adolescent development in that it provides opportunities for youth to select and manage their own experiences by exerting personal control over their environment and becoming autonomous in their action. These activities foster the development of cooperation and establish important social negotiation skills within the peer group (Rombokas 1995). Is thus allows adolescent important opportunities for both differentiation and integration. The relative control adolescent exert over activity settings allows greater freedom to experiment with social roles behavior and

ideas than many other developmental tents.

School based activities are those activities that are organized and administered by the school under the supervision of staff and other personnel's. These kinds of activities include recreational activities sports, school clubs, skills and interests such as arts and crafts, dance, music and more. Depending on the school district, there is usually a wide variety offered.

These school based activities provide adolescent with highly structured leisure environment in which adolescent can exert control and express their identity through choice of activity and actions within the setting, but which do not normally facilitate experimentation with roles and activities that are not sanctioned by adults. Some researchers characterize highly structured activities as including regular participation schedules, rule guided engagement, direction by one or more adult activity leaders, an emphasis on skill development that is continually increasing in complexity and challenge activity performance that requires sustained active attention and clear performance that requires sustained active attention and clear performance feedback.

Generally, the school based activities are important because they take place in the school setting therefore are guided by staff playing a major role in the effect of academic achievement on the students. Pierce et al. (1999) have found that classroom teachers reported that students had fewer behavior problems when staffs were more positive with the children in thereafter school activities. According to the type of school based activities the child participates in usually determines how much better they will do in that subject area in school. Reading after school is the activity most predictive of higher students' achievement. Reading at home is a lot less like for children to do in today's day on age so after school activities are extremely beneficial.

By far, high school students represent the largest group whose extracurricular activities are studied intimately and this research has tended to focus on athletic participation. Sillier and Quirk (1999) looked at high school students extracurricular involvement and academic performance. Specifically they studied 123 high school students who participated in interscholastic soccer during the first quarter of the school year and were not involved in any other major extracurricular activity during the second quarter. The result indicated that during the soccer (the first quarter), soccer players had higher GPAS that out of season the second quarter. Attendance was also better in season but this latter finding was not statistically significant.

In a more recent study Broh (2002) also looked at the relationship between athletics and students outcomes. She analyzed data on students from the National Educational Longitudinal study of 1988 (NELS – 88) including the first and second follow ups. Result of her analysis showed that participating interscholastic sport was related to improved mathematical graders, English

and Mathematics test scores, even after controlling for the selection of higher performing students. Participation in interscholastic sports was also related to increased self esteem, a more internalized locus of control, spending more time on home work and increased contact among parents, students and teachers.

Some researchers have looked beyond athletics to other extracurricular activities. March (1999) conducted one of the first large-scale studies on extracurricular activities using the High School and beyond data base, including the first and second follow-up (National centre for Education statistics). He examined the relationship between total number of extra circular activities and a variety of outcomes variables in a weighted sample of more than 4000 students. Controlling for background variables and sophomore outcomes, March reported that in seines year extracurricular activities was positively associated with social self concept, academic self concept taking advanced courses, time spent on homework, post secondary education aspiration, GPA, parental involvement and lower absenteeism for students across a variety of backgrounds. Marsh noted that the relationship with academic and social self concepts but argued that participation in extracurricular activities was important because it can lead to "increased commitment to school and school values which lead indirectly to increased academic success".

Eccles and Barber (2000) looked at the risks and benefits of five different types of activities pre socially activities, team sports, school involvement, performing arts and academic clubs. They analyzed data on 1,259 students when participated in the Michigan study of adolescent life transform from 1983 when they were in the sixth grade through 1997.

Academic achievement was measured using 10 =12th grade GPA and subscale scores from the differential aptitude test. The result of the longitudinal regression analysis showed that participation in any of the five types of activities studied resulted in a better than predicted 12th grade GPA. They also found that students who participated in sports, performing arts and school involvement activities reported liking school more over the years studied, which is consisted with Marshs' (1999) hypothesis about the effect of extracurricular activities on students commitment to school.

Broh (2002) also reported that the differential effects of extracurricular activities were not limited to interscholastic and intramural sports. She found that participation in music groups was positively related to both Math and English grades and Math test scores participation in student council was positively related to both sets of grades and participation in year book.

Rombokas (1995) investigated the relationship between students' involvement in extracurricular activities and their academic performance. She opined that students who involved in extracurricular activities received higher grades than those not involved in activities.

She studied this topic because high school budgets are meager and administrations of these schools want to spend the money efficiently. Consequently, funding for extracurricular may be decreased examined the correlation between extracurricular activities and academic performance.

The scopes of her investigation included high school students and the relationship between their involvement in activities and their academic performance. Some collegiate level studies were used since the benefits of extracurricular activities in high school and college are the same. She performed a study of college aged students who were involved in extracurricular activities on high school to discover if there was infact a correlation between involvement in activities and academic achievement. She concluded after questioning two hundred and ninety two (292) college students that "participation in extracurricular activities enhances both the intellectual and social development of students" through her own research she discovered that athletes attain higher grade point averages than those students not in activities. In addition, Rombokas found that a national survey performed by Durbin in 1999 showed that participants in extracurricular activities in high school received better grades when they were not participating in activities.

Purpose of the study

The purpose of this study is to determine the extent of the relationship between students participation in school based extra-curricular activities and their achievement in physics.

METHODOLOGY

Research hypothesis

The following hypotheses were postulated to guide the investigation.

H₀₁: Extracurricular activities have no effect on students' achievement in physics.

H₀₂: Students achievement in physics is not influenced by their participation in specific extracurricular activities.

H₀₃: Students' achievement in physics is not influenced by their involvement in social activities

Methods

The study adopted a simple survey design and was directed at the population of senior secondary school physics students in Lagos state. The sample selection was limited to senior secondary III that is (SSIII) physics student. Fifty students each were drafted from four randomly selected secondary schools across Lagos State. The number of female students selected equals the male to eliminate or Minimize gender biases in the responses. In all, two hundred

students formed the study sample.

Instruments

The instruments used were questionnaires and physics student achievement test. The questionnaire consists of three sections (A, B, and C). Section A was designed to elicit information on the biodata of the students. Section B includes question on the extra curricular activities that students participate in the school, their favorite type of extracurricular activities and maximum time spent each week on extra curricular activities. Section C was provided with 5 responses each borrowing the idea of Likert (1932) to give room for freedom of expression of the respondents. The number of respondents' giving each type of response were counted and scored. The five responses used are: Strongly agree (SA), Agree (A), Undecided (U), Disagreed (D), and strongly disagreed (SD).

Finally, the second instrument administered to the students, which is the physics student Achievement Test (PAT), was designed to collect information about the performance of students in physics. It comprised 3 essay questions according to the syllabus of the respective classes. Each question carried a total mark of ten (10) thus the overall mark was 30.

Data analysis

The data analysis and results are presented with special reference to the research hypotheses. Table 1 shows the multiple regression analysis of students' involvement in extracurricular activities on their achievement in physics.

From the aforementioned table, it is easy to see that there exists an effect of students' involvement in extra curricular activities on their achievement in physics. This implies that students' involvement in extracurricular activities determines to a greater extent academic performance in physics. The relationship is very high, positive and significance at 10% level of significance. Hence the null hypothesis is duly rejected. Further, it is necessary to find out if students' participation in class influences their academic performance in physics or not. To accomplish this, we used hypothesis two. Table 2 reveals clearly that students' participation in specific extracurricular activities influences their achievement in physics. The implication of this finding is that participation in specific extracurricular activities plays a significant role in booting students' achievement in physics. The relationship is high, positive and significant at 3% level of significance. Hence, the null hypothesis is thereby rejected. Furthermore, we establish if students' involvement in social activities influences their academic performance in physics or not.

Table 3 reveals clearly that there exists a significant relationship between involvement in social activities and students achievement in physics. The implication of this finding is that involvement in social activities plays a significant role in improving students' achievement in physics. The relationship is high, positive and significant at 1% level of significance. Hence, the null hypothesis is rejected.

DISCUSSION AND CONCLUSION

The result of the analysis of data shows that students' participation in extracurricular activities influences their achievement in physics and this of course shows that generally students non participation in any of these activities account for the students' poor achievement. This finding corroborate with the views of Marsh and

Kleitman (2002) that students who participate in extracurricular activities did better academically than students who did not participate.

Broh (2002) revealed that students' participation in extracurricular activities in general is associated with an improved grade point average, higher education aspiration increased attendance and reduced absenteeism, Darling et al. (2005) supported the view of Broh that reported higher grades more positive attitude towards school and higher academic aspiration. Extracurricular activities serve a large purpose in the academic, social, physical and cognitive development of students which is required in learning physics so every child should have the opportunity to participate in at least one activity that suits his or her personal interest.

The hypothesis two in this study sought to test the significant effect of students' participation in specific extracurricular activities incur great influence on their achievement in physics. The result also corroborates Broh (2002) report that participation in some activities others diminishes academic achievement.

Marsh and Kleitman (2002) cited that extracurricular activities have proven to be beneficial in building and strengthening academic achievement, even if the activities are not obviously related to academic subjects. Note only does extracurricular activities enhance students' achievement in physics but also the type of activity the child participates in. These activities however, should be well supervised, timed properly and directed toward improving their development and should involve some mental and physical ability which is required in achievement in physics.

Students need to be aware of the specific extracurricular activities available to them and the effect that each specific activity has on their academic performance. Not every student will benefit from or be impaired in the same manner that studies revealed concerning extracurricular activities. Parents need to give their children some freedom in determining which activities to participate in but still need to monitor how their children spend their time. Parents have a large role in the academic development of their children and one way of fostering strong academic performance is by encouraging their young children to become involved in some of the activities which promote academic performance. This could influence their activity of choices later on in life and may set the foundation for a life of academic success and progress.

The research result obtained from the data analysis indicated that students' involvement in social activities influences their achievement in physics. This is supported by the view of Eccles and barber (1999) that students who participated in social activities and school involvement reported liking school more over the years studied, which is consistent with Marsh's (1999) hypothesis about the effect of social activities on students commitment to school.

Table 1. Simple regression analysis of involvement in extra curriculum activities on students achievement in physics.

Entered variables		SS	DF	R	R- square	MS	F	Sig (0.05)
Involvement in extracurricular activities	Regression	387.649	1	0.319	0.102	387.649	22.269	0.000
	Residual	3411.891	196					
	Total	3799.540	197					

Table 2. Simple regression analysis of the influence of students participation in specific extra curricular activities on their achievement in physics.

Variables entered		SS	DF	R	R- square	MS	F	Sig(0.05)
Students participation in extracurricular activities	Regression	114.468	1	0.174	0.030	114.468	16.088	0.000
	Residual	3685.072	196			18.801		
	Total	3799.540	197					

Table 3. Simple regression analysis of involvement in social activities on students achievement in physics.

Variables entered		SS	DF	R	R- square	MS	F	Sig(0.05)
Students participation in extracurricular activities	Regression	18.964	1	18.964	0.398	0.158	47.870	0.000
	Residual	3780.577	196	19.289				
	Total	3799.540	197					

Although, social aspects of a student's life do not directly affect his or her grade point average they do affect the overall well-being of the student. Education is not solely learned by reading the textbook for student can learn an incredible amount from their peers through social activities students learn how to compromise and work in a group which enhances achievement especially in physics. Social activities also allow students to meet and interact with peers that may not be within their close group of friends. In addition these activities help to enhance these social skills and teach lessons not learned in a classroom. Bestler (2005) said that social activities are an effective way to network and meet other people with whom the students can study.

Reinforcing Bestler statement Fowkes (2005) commented that social activities teach students to work in teams and work cooperatively, skills that will help students' to be successful in physics and other subjects and also, attain jobs in future.

This study has shown that students' participation in school based extracurricular activities is an important factor to students' achievement in physics. However,

there are implications of the study for students and teachers and the society as a whole. The students would perform better if extracurricular activities are encouraged in schools as it would improve physics students reading habit and thinking abilities. As it is often said "All work and no play makes jack a dull boy", extra curricular activities would make the students more active in class and build up their skills which are important factors in achievement in physics. This study will also help teachers spend more time with the student, having a personal relationship with each student, knowing their strengths and their weakness and building up on them thereby improving the physics teachers' quality in terms of teaching effectiveness.

Physics teachers need to undergo further training to update their skills in teaching effectively. During training, importance of extracurricular activities to the students should be highly emphasized. School administrators should create necessary time during school hours for extracurricular activities and ensure that it is done effectively. Government should provide adequate infrastructure and enabling environment for

extracurricular activities. The Government and private organization should also sponsor these activities thereby giving out prizes and scholarship to motivate the students.

From the findings and discussions it was drawn that there is a significant relationship between students participation in school based extracurricular activities and their achievement in physics. Hence, administration of schools ought to continue their funding of extracurricular activities since it clearly benefits the students' academic achievement in physics. Schools should encourage students to participate in extracurricular activities since they benefit the students in so many ways. Also the schools should educate the coaches and group sponsors on the influence that extracurricular activities have on students' lives. Activities are not solely about what the score is, how many wins or losses are attained or what place is won at a competition. They provide and instruct students' lessons that will last them a lifetime.

REFERENCES

- Bringing up Girls in Science (2003). Bugs-parents (University of North Texas). Retrieved from <http://www.coe.unt.edu/bugs/parents.index.html>. February 26, 2005
- Broh BA (2002,). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociol. Edu.*, 75, 69-96 January
- Coltin L (1995). Enriching Children Out of School Time. Eric Clearinghouse on Elementary and Early and Small Schools, Retrieved from ERIC Digest February, 2005.
- Darling N, Caldwell LL, Smith R (2005). Participation in school-based extracurricular activities and adolescent adjustment. *J. Leisure Res.*, 37, 51-77.
- Dyson D (2002). Utilizing Available Resources at the Local Level. ERIC Clearinghouse on Rural Education and Small Schools, Retrieved from ERIC Digest. April, 2005. The mediating effects of schools, communities, and identity. *Sociol. Edu.*, 76: 89-105.
- Karnes F, Bean S (1990). Developing Leadership in Gifted Youth. ERIC Clearinghouse on Handicapped and Gifted Children, Retrieved from ERIC Digest. April, 2005.
- Marsh HW, Kleitman S (2002). Extracurricular activities: The good, the bad, and the nonlinear. *Harvard Educational Review*, 72,464-512.
- Millard CV (1930). The organization and administration of extracurricular activities. New York: A.S. Barnes and Co.
- Petit G, Laird R, Dodge K, Bates J (1997). Patterns of after school care in middle childhood: Risk factors and developmental outcomes. *Merrill-Palmer Quarterly*, 43(3), 515-538. EJ 554 329.
- Pierce K, Hamm J, Vandell D (1999). Experiences in after school programs and children's adjustment in first grade classrooms. *Child Development*, 70(3), 756-767. EJ 595 706.
- Rombokas M (1995). High school grades. Paper presented at the south eastern conference of counseling personnel, Jekyll island, G A ERIC document ED391134.
- Shumow L (2001). Academic effects of after -school programs. ERIC digest. Source: ERIC clearing house on elementary and early childhood education campaign IL.