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The Impact of Participation in Extracurricular Activities on Elementary School Students

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Abstract: The purpose of this study was to investigate the relationship between participation in extracurricular activities and academic achievement of elementary school students. Surveys were administered to 23 fourth- through eighth-grade students to gather information on their extracurricular participation and data was collected on these students' most recent standardized test scores and first-semester grades. The quantitative data collected was then analyzed using SPSS software. The results of this analysis suggest a statistically significant positive correlation between hours spent participating in extracurricular activities and cumulative GPA, and a moderate positive correlation between the total number of activities in which students participated and cumulative GPA. No significant relationship was found between students' standardized test scores and extracurricular participation. These findings may assist teachers and school administrators in decision-making regarding the allocation of resources to extracurricular activities. Further research could be conducted to examine the impact of student, teacher, and parent attitudes on extracurricular participation and academic success.

In recent years, a debate has arisen regarding the importance of extracurricular activities in the field of education. When faced with limited resources, a growing number of teachers and school administrators place a higher priority on academics, reducing or altogether eliminating school-sponsored extracurricular activities (Israel, 2013; Vukic & Zrilic, 2016). The American public school system is not alone in facing this dilemma: both private and public schools across the worldwide field of education are struggling to find the ideal balance between students' academic, personal, and social lives (Bradley & Conway, 2016; Eccles, Barber, Stone, & Hunt, 2003; Fujita, 2006).

In small, privately funded schools—especially Christian schools—this topic is particularly relevant. When schools are considering starting or continuing an extracurricular program, parents or school staff must volunteer their time, school resources must be spent in hiring professional instructors, or fees must be charged for students' participation in these activities. Thus, each school must face a difficult decision: Should the valuable resources of time, finances, and parental involvement be expended in non-academic pursuits?

In addressing this issue, schools need to determine the value of extracurricular activities in relation to factors such as student motivation, development, and academic achievement.

Schools want their students to succeed, and the pursuit of this success requires administrators and institutions to prioritize programs that facilitate student achievement. When the benefits of extracurricular activities come into question, schools must look for information to guide them in finding the value of these activities in relation to student success. This study is an attempt to provide schools with some of that important information.

The purpose of this study was to answer the following research question: What is the impact of an after-school sports and music program on high-stakes test scores and student grades in a small Christian school? Unfortunately, little research has been conducted for student populations in these settings. Thus, the data collected in the setting of a small Christian school will help guide other similar schools in deciding whether to continue or start after-school programs in music or sports.

Review of Related Literature

As public and private school systems around the world come under greater scrutiny regarding their allocation of resources and commitment to academic success, the necessity of extracurricular activities in schools has been called into question (Israel, 2013; Vukic & Zrilic, 2016). When faced with limited resources such as instructional time, finances, and staff, school administrators must decide whether extracurricular activities are a worthwhile investment.

Schools are also placed under increased pressure to see their students succeed academically, as test scores become part of the public record. Schools are ranked according to academic accomplishment, and principals come under scrutiny from parents and county boards. Often, if students do not perform well, schools are threatened with loss of funding, and teachers and principals may lose their jobs (Au, 2011). To prevent these negative outcomes, administrators are looking for ways to allocate more resources for academic subjects. This desire to boost the academic performance of its students leads many schools to defund extracurricular programs in order to more fully support academic pursuits (Bradley & Conway, 2016). This is not a dilemma faced only by the public school system, as small Christian schools and their supporters are just as interested in seeing their students succeed. Thus, an examination of all the programs offered by a school—both academic and extracurricular—must be measured in regard to student achievement.

History of Extracurricular Activities and Academic Achievement

The effects of extracurricular activities (ECAs) on student achievement have long been a topic of interest for researchers. In years past, this interest has manifested itself in such large-scale studies as the one conducted by Cooper, Valentine, Nye, and Lindsay (1999). This study examined the relationship between students' participation in ECAs and their academic achievement. However, in more recent years such in-depth, specific research on this topic has shifted in its nature. Large-scale studies such as the one referenced above no longer focus solely on students' academic accomplishments, but on school success, which includes many factors such as student motivation, attitude, social and psychological development, and academic achievement (Eccles et al., 2003; Gilman, Meyers, & Perez, 2004). While these studies do indicate a positive correlation between extracurricular participation and academic achievement, the attention given to this correlation is only minimal, as researchers often choose to focus on the impact of these activities on student outlook and social inclusion (Eccles et al., 2003; Holloway, 2002).

Relationship between Extracurricular Activities and Academic Achievement

The decline in extensive, large-scale studies designed to specifically examine the relationship between ECAs and academic success has led to an increase in research conducted by students and teacher-practitioners (Fujita, 2006; Jansen, 2016; McLaren Gibbons, 2006), as well as studies conducted outside the United States (Bradley & Conway, 2016; Vukic & Zrilic, 2016). These studies, conducted in various elementary and secondary school settings, support the theory that academic achievement may be linked on some level to participation in extracurricular activities, though the exact nature of that relationship is unclear. The results of the study conducted by Cooper et al. (1999), for example, indicate a positive correlation between participation in certain categories of activities (e.g., sports or structured clubs) and students' grades and test scores. These results are supported by Fujita (2006), whose study of 52 junior high students indicated that students who spend time engaging in activities such as community service experience a higher rate of academic success than those who pursue other interests, such as music. Interestingly, Reeves (2008) conducted a similar study of approximately 2,000 high school students, but found that the academic impact of ECAs was related to the number, not types, of ECAs in which students participated. These findings are supported by Jansen (2016) and McLaren Gibbons (2006), whose studies indicated that the number of hours students spend in extracurricular activities were positively related to their grade point averages (GPAs).

Overall, the current body of literature examined indicates a positive correlation between participation in extracurricular activities and academic achievement. This may be evidenced in the types of activities in which students participate, in the hours they spend in each activity, in standardized test scores, or cumulative GPA. However, the exact relationship between the number of hours and/or types of ECAs and academic performance has yet to be conclusively identified, warranting further research on the subject. This is especially true in regard to small Christian schools, where little to no research has been conducted on the impact of ECAs on academic success.

Methodology

This study was conducted at a private Christian elementary school in the Southeast United States. Before conducting this study, written permissions from both the school board and the school principal were obtained. The participants for this study were selected by asking 29 students from Grades 4–8 to participate in completing a brief survey. These students came from two classrooms: a fourth–sixth grade class, and a seventh–eighth grade class. Before the survey was administered, each student was asked to sign an assent form stating the voluntary nature of participation in the study (see Appendix B). Parental consent forms were also sent home with each child. These were signed and returned before administration of the survey instrument (see Appendix B). Of the 29 students, 25 volunteered to participate in the study, while four declined. Parental permission was obtained from 23 of the 25 volunteers. The remaining subjects consisted of 11 girls and 12 boys, ranging in age from 9 to 14 years old. Nine of these students were from the seventh–eighth grade classroom, while the other 14 students came from the fourth–sixth grade class.

Data Collection

In order to determine the participants' level of participation in extracurricular activities, a survey was administered to each of the students requesting both background information (age, grade, and gender) and information regarding extracurricular activity participation for the current (2018–2019) school year (see Appendix A). Students were asked to indicate the specific extracurricular activities in which they participated (both affiliated and unaffiliated with the school) and the number of hours they spent per week participating in these activities. Students were also asked to rate their academic performance for the first semester of the 2018–2019 school year on a Likert-type scale, ranging from 1 (poor) to 4 (excellent). Each participant was then asked to write their name on the back of the survey.

Following the administration of the survey instrument, each participating student was randomly assigned a number by the school principal. These numbers were recorded on the front of the surveys, which were then photocopied on one side only, blinding the researcher to individual students' names. This was done in order to preserve students' anonymity and ensure the objectivity of the research study.

The principal also provided records of students' first-semester grades and scores for the 2018–2019 administration of the Iowa Test of Basic Skills (ITBS), which were redacted to omit any identifiable personal information. Once again, each student's randomly assigned number was included on these reports in place of a name. The students' numbers were then entered into a spreadsheet, along with the number of hours each student participated in extracurricular activities per week, the types of activities in which students participated, and their self-rating of their current academic performance. Another spreadsheet contained students' first-semester mathematics and English language arts (ELA) grades, which had been converted to grade point averages (GPA) using the following scale: A = 4.00; A — = 3.67; B + = 3.33; B = 3.00; B — = 2.67; C + = 2.33; C = 2.00; C — = 1.67; D + = 1.33; D = 1.00; D — = 0.67; F = 0.00. Students' national percentile rankings (NPR) for their mathematics, ELA, and complete composite ITBS scores were also entered into the spreadsheet.

Analysis

Due to the large number of quantitative data collected during this study, IBM's Statistical Package for the Social Sciences (SPSS) was used to assist in data analysis. The spreadsheets for students' survey results and academic records, created during the data collection phase, were combined into a single sheet and entered into the SPSS software.

Using SPSS, the Pearson correlation coefficients were calculated and reported for the following 10 variables: total number of extracurricular activities, hours spent per week in extracurricular activities, self-rating of academic performance, total number of music- and art-related activities, total number of acrosports or martial arts activities, ITBS mathematics NPR, ITBS complete composite NPR, first-semester mathematics GPA, first-semester English language arts GPA, and first-semester cumulative GPA. Relationships above 0.30 or below –0.30 were then noted for further examination.

Results

The data with the highest correlations included a statistically significant positive correlation (r = 0.417) between students' first-semester grade point averages and hours

spent in extracurricular activities. This correlation is represented in a scatter plot (see Figure 1). While this correlation cannot be equated with a cause-and-effect relationship between the two variables, it may indicate the presence of a positive association between the number of hours students spend participating in extracurricular activities and their cumulative grade point averages.

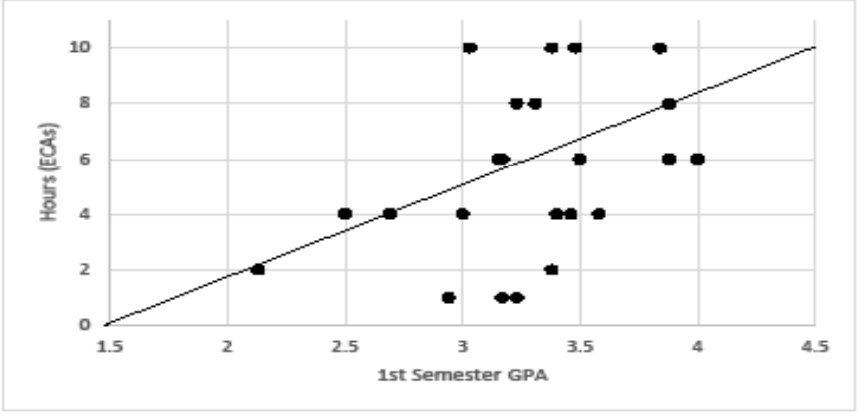

Figure 1. Correlation between hours spent in extracurricular activities and first-semester GPA.

While not statistically significant, a moderate positive correlation (r = 0.343) was observed between students' cumulative GPAs and the total number of ECAs in which they participated. A very slight positive correlation (r = 0.263) was also noted between the hours students spent in extracurricular activities and their English language arts GPAs; however, there was almost no correlation between the hours spent in ECAs and mathematics GPA (see Table 1).

Interestingly, a significant negative correlation (r = –0.413) was found between students' self-rating of academic performance and their performance on the mathematics section of the Iowa Test of Basic Skills. This self-rating showed a moderate negative correlation to students' composite ITBS national percentile rankings, and no significant correlations to their ELA or mathematics GPAs. However, a high self-rating was associated with a higher cumulative GPA (see Table 1).

Other correlations included positive associations between students' participation in music- and art-related activities and English language arts and mathematics GPAs. A significant correlation between these ECAs and cumulative GPA was also identified (r = 0.407). A slight association (r = 0.262) was also present between participation in an acrosports or martial arts program and cumulative GPA, but these programs did not appear to be significantly related to ELA or mathematics GPAs (see Table 1). Boys and girls were statistically equally represented in both of these areas; however, it is interesting to note that the boosts in ELA and mathematics grade point averages enjoyed by students in these programs were nearly half those experienced by students in music and art programs.

Table 1
Correlations between students' survey results and academic performance at the 0.05 level.

	Math ITBS NPR	ITBS Comp. NPR	ELA 1st Semester	Math 1st Semester	Cumulative GPA 1st Semester
Total	-0.004	0.008	0.151	0.145	0.343
Hours	0.059	0.41	0.253	0.047	0.417*
Rating	-0.413*	-0.338	0.174	0.139	0.328
Music/Art	-0.106	0.029	0.283	0.386	0.487*
Acro/MA	-0.088	-0.167	0.154	0.179	0.262

Discussion

Based on the results obtained through the statistical analysis described above, a positive relationship does seem to exist between students' participation in extracurricular activities and their cumulative GPAs. While the number of hours students spend participating in ECAs is more strongly related to their grade point averages, the number of activities in which students participate does seem to influence their performance in this area as well. These findings align with those of Reeves (2008), whose study indicated a positive relationship between the amount of extracurricular activities in which students participated and their academic achievement, as well as those of Jansen (2016) and McLaren Gibbons (2006), who found a positive correlation between the hours students spent in ECAs and their cumulative grade point averages. Since the number of ECAs in which students participate is positively related to the hours they spend in these activities, the presence of a similar relationship between these variables and student grades is unsurprising.

What is surprising is the fact that this study found no evidence of a significant relationship between participation in ECAs and performance on high-stakes tests. These results contrast with the findings of both Reeves (2008) and Cooper et al. (1999), which indicated a positive association between extracurricular participation and standardized test scores. This may speak to the nature of high-stakes testing, as students in this study appeared to perform better under regular classroom conditions than in standardized testing environments. It may be that the pressures experienced by students during such exams outweigh the benefits they would normally experience from participation in extracurricular activities. This is evidenced by the fact that students' self-ratings of their academic performance were inversely related to their standardized test scores, yet somewhat positively related to their cumulative GPAs.

Another interesting finding of this study was the presence of a stronger relationship between music- and art-related activities and student GPAs than acrosports and martial arts programs and GPA. These results both support and conflict those found by Cooper et al. (1999) and Fujita (2006), who determined that the types of extracurricular activities in which students participated impacted academic performance more significantly than the total number of activities. This study found little evidence to support the claim

that the types of ECAs in which students participate are more positively associated with academic achievement than overall extracurricular participation. However, there is evidence to suggest that certain types of ECAs play a more influential role in student achievement than others.

The results of this study support the findings of other studies in the field of education, which indicate that a positive relationship between students' participation in extracurricular activities and their academic performance does exist (Bradley & Conway, 2016; Vukic & Zrilic, 2016). While some of the results of this study conflict with other researchers' findings, this discrepancy simply illustrates the fact that the nature of the relationship between ECAs and academic achievement is still very much unknown—especially in smaller, private Christian schools, where little to no research has been conducted on this topic. Thus, educators must continue seeking to define the value of extracurricular activities in relation to student achievement in order to make the best decisions for their students.

Limitations

Several possible limitations were associated with this study, including sample size and time. While the participant pool included 23 of the 29 enrolled fourth- through eighth-grade students, the small size of the school resulted in a small sample size. Time was another limiting factor in this study, as the researcher could only obtain standardized test scores and grades for the first semester of the school year. It is unclear whether the positive correlation between time spent participating in extracurricular activities and cumulative GPA would remain throughout the entire school year.

Future Research

A suggested next step in this study would be to conduct a qualitative analysis on student, teacher, and parent attitudes toward extracurricular activities and academic achievement. This approach would shed further light on the original research question—"What is the impact of an after-school sports and music program on high-stakes test scores and student grades in a small Christian school?"—by addressing additional qualitative questions. For example: Are students motivated to participate in ECAs by love for their chosen activity, by social pressures, or by other unknown reasons? Do parents encourage their children to participate in sports or music because they themselves used to do so, or because they would rather pay for extracurricular participation than for after-school care? Do students keep their GPAs up to avoid suspension from ECAs, or in response to parental or personal pressure? And finally, what value do parents, teachers, and students see in extracurricular activities? These questions reveal some of the additional variables that a qualitative analysis would be able to address.

Secondly, the researcher would suggest extending the length of the study from a single semester to a full school year. This would provide an opportunity for comparison of the data from the two semesters. Additionally, a clearer picture of long-term trends in academic success and extracurricular participation would be obtained.

Finally, the researcher strongly recommends that the setting of the study be extended to include other small Christian schools. The broadening of the scope of the research would allow for a more definitive examination of the value of extracurricular activities

in relation to academic success in this setting.

Conclusion

The question of whether extracurricular activities are a valuable expenditure of school resources and time is not one that can be resolved easily. However, it is an important question, and one that cannot be answered based solely on opinions—it requires experience and tangible results. Schools want their students to succeed, and this study found support for the conclusion that extracurricular activities do have a positive impact on GPA, but not on high-stakes testing (such as ITBS). Interestingly, it also revealed a positive correlation between music and both English language arts and mathematics performance. These findings open the door for additional research regarding the interchange of language, problem-solving skills, and creativity between music and academics. Thus, while some important discoveries have been made, this study is simply a small step in the process of addressing the much larger topic of music and sports on academic achievement, which additional research must continue to further.

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Appendix A
Survey

Age _____ Grade_____

Gender: M F

2018-2019 School Year

Do you currently participate in any of the extracurricular activities offered by the school? Yes No

If you answered "yes," please check all that apply:
☐Soccer/Sports ☐ Gymnastics ☐ Adv. Bells
☐Art Club

Do you currently participate in any extracurricular activities outside of the school?
Yes No

If you answered "yes," please check all that apply:
☐Sports ☐ Gymnastics/Cheer/Dance ☐ Music Lessons ☐ Martial Arts
☐Pathfinders/Adventurers ☐Community Service(please describe):_____
☐Other (please describe): _____

Approximately how many hours per week do you currently spend on extracurricular activities?
☐ Less than 1 ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐7-8

☐ 9+

How would you rate your academic performance so far this year?

1	2	3	4
Poor	Fair	Good	Excellent

Appendix B
Consent Forms

Dear Students,

I am conducting a research project on extracurricular activities and school success. I am doing this project because I am interested in seeing whether participating in sports, music, or other activities outside of school impacts how well students learn in class. Hopefully, this project will help me better understand how students' school achievement may change when they participate in extracurricular activities.

I'm asking you to help me with this project by completing a short survey. Your name will be removed from the survey before I see it, so I won't know whose answers I am looking at. This way, you can be sure that all your answers are completely private, and they will remain so throughout the study.

If you decide you do not want to participate in this study, it won't change your grades at all, and no one will be upset with you. If you do decide to participate, you can change your mind at any time—just let me or your teacher know if you no longer want to be included in my project. When I write a report on the results of this study, your name and other personal information will not be mentioned, and no one will know whether or not you were in the study. If you have any questions, feel free to talk to me at school, or send me an email at ameadows@southern.edu.

Thank you so much,

Amy Meadows

Please check one:

☐Yes, I would like to be a part of Ms. Amy's research study.

☐No, I would not like to be a part of Ms. Amy's research study at this time.

_____ _____
Your Name Date

Dear families,

My name is Amy Meadows. I am a senior education major at Southern Adventist University in Collegedale, TN. I am currently conducting a study on the relationship between participation in extracurricular activities and academic achievement in elementary school. Through this study, I hope to determine whether students' participation in extracurricular activities improves their rate of success in academic pursuits.

As part of this study, I will be asking students to complete a brief survey on their past and current extracurricular activities. In order to protect your student's privacy and ensure my own objectivity, each child's name will be removed from the surveys before I receive them. The data will be coded in such a way that neither I nor my intended audience will be able to identify any individual student based on his or her responses. Because participation in this research project is completely voluntary, I am asking for your and your child's permission before administering the surveys.

If either you or your child elects not to consent to participation in this study, there will be no penalty associated with that decision. If your child does choose to participate, he or she may withdraw from the study at any time. This study and its results will not impact your child's grades in any way. While the results of this study may be published, any information collected regarding your child will be kept confidential.

If you have any questions regarding this study or its implications, please feel free to contact me at ameadows@southern.edu. Thank you for your time.

Sincerely,

Amy Meadows

Participant Consent Form

I, _____, DO/DO NOT (please circle one) consent
Parent/Guardian Name
for my child, _____, to participate in the research
Child's Name
study referenced above.

I understand that my child's participation is voluntary, and that any information collected regarding my child will be kept confidential.

_____ _____
Parent/Guardian Signature Date

Dr. Gary Bradley, Ph.D, Professor of Education, acted as supervisor and consultant for this undergraduate research project and provided guidance to the student author.