Intuition: The BYU Undergraduate Journal of Psychology

Volume 12 | Issue 2 Article 14

2017

Effects of Extracurricular Activities and Physical Activity on Academic Success

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Abstract

In this paper, I provide a comprehensive review of recent literature (published since 2010) regarding the relation between academic success and participation in extracurricular activities. I examine the direct effects—both positive and negative—that such participation has on the academic performance of students of all grade levels. Subsequently, because sports constitute a large portion of the extracurricular spectrum, I also examine studies that analyze the effects of physical activity on academic performance. These studies suggest that extracurricular activities may have a positive effect on academics, especially when they contribute to a balanced life, self-confidence, an increased sense of personal duty and contribution to the school, and feelings of belonging. Meanwhile, extracurricular activities may have a negative effect when they produce an overloaded personal schedule and cause students to define themselves primarily by their activities rather than as students. Studies regarding the general effects of physical activity included both positive and negative correlations with academic success; however, most studies lacked a layer of depth necessary to form any definite conclusions concerning the relationship. I also discuss the presence of confounding variables in the research, practical applications for parents of the students, and provide suggestions for future research.

Keywords: extracurricular activities, physical activity, academics, academic success, academic performance

Intuition: The BYU Undergraduate Journal of Psychology, Vol. 12 [2017], Iss. 2, Art. 14

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Parenting could be characterized as a never-ending conundrum of decisions about how to provide one's child with the best life possible. Parents face the ever-present task of setting rules, making guidelines, and otherwise teaching their children lessons that will help them become successful, self-sufficient adults. For this reason, it is important that parents acquire the knowledge they need to make wise judgments.

Accordingly, some of the most important decisions parents make are those related to their children's academic success. Considering the amount of time that each young person spends in school or doing related activities, as well as the impact these academic endeavors will have upon their opportunities for success later in life, these types of decisions deserve attention. It is important that parents understand how to foster an environment wherein children can thrive academically.

In this paper, I will explore one of the factors that affect academic success, namely, participation in extracurricular activities. Specifically, I will examine recent literature studying the direct effects—both positive and negative—that participation in extracurricular activity has on academic performance. Additionally, considering that sports constitute such a large portion of the extracurricular spectrum, I will also examine studies which analyze the effects of general physical activity on academic performance. By doing so, I seek to provide parents with information needed to make informed decisions regarding their children's participation in extracurricular activities and suggest possibilities for future research.

Direct Effects of Extracurricular Activities

Several recent studies have contributed to a growing body of knowledge on the subject of extracurricular activities and academic success. These studies analyze ways in which extracurricular activities can positively affect students, as well as ways in which they can negatively affect students.

Positive Effects

In an effort to highlight the positive effects of extracurricular activities on academics, Burrows and McCormack (2011) conducted a

case study involving a successful secondary school in New Zealand. This all-girls high school boasted a high rate of participation in sports, consistently outranked most other schools in the region on national exams, and prided itself on producing well-rounded graduates. The study included personal interviews with students and staff members, detailed observations of activities both in and out of the classroom, documentation of aesthetic features of the school itself, and intense studying of school documents, policies, and so forth. Ultimately, the authors suggested several ways in which extracurricular sports contributed to academic success: by providing balance, promoting self-confidence, increasing a sense of contribution and duty, and cultivating feelings of belonging.

Providing balance. A balanced life could be characterized as a way of life in which a healthy balance between work, leisure, and other personal pursuits is maintained. For developing adolescents, life balance and leisure activities are positive predictors of academic achievement and may help students maintain an optimal level of efficiency (Bergin, 1992). Burrows and McCormack (2011) suggested that extracurricular activities could be an important contributor to a student's life balance. By taking a break from academic endeavors, students have the opportunity to be social, release energy, and have fun. More specific research is needed to confirm the theory that extracurricular activities truly provide this balance, but it is plausible these activities promote a balance that is vital to development and are important in maximizing academic efficiency.

Self-confidence. Burrows and McCormack (2011) also suggested that extracurricular activities provide a way to build self-confidence, which can have a positive effect on academic performance. By achieving personal goals, receiving recognition for accomplishments, and regularly interacting with others in an intricate social system, students were better able to feel productive and self-efficacious. Previous literature provides further support for this claim, ultimately stating that the self-esteem gained through extracurricular activities motivates and drives success, which often extends to other facets of the student's life, including academics (Cosden, Morrison, Gutierrez, & Brown, 2004; Mahoney & Cairns, 1997).

Sense of contribution and duty to one's school. Burrows and McCormack (2011) also found that extracurricular activities created

a greater sense of connection to one's school. As students competed under the name of the school, they were increasingly motivated to give back and represent it well, both in academics and other activities. Again, previous literature supports this claim, reporting that this sense of duty often seems to carry over into the academic realm, resulting in lower drop-out rates and higher academic achievement (Cosden et al., 2004; Mahoney & Cairns, 1997).

Sense of belonging. Consistent with the previously mentioned ideas, one could also reasonably hypothesize that the more a student feels that he or she belongs at school, the more likely that student will perform well academically. Moreover, considering that extracurricular activities provide a social atmosphere where students are encouraged to achieve in the name of the school, it is reasonable to conclude that extracurricular involvement might provide an ideal setting to feel that belonging. Ultimately, the results of several studies appear to support these hypotheses. Knifsend and Graham (2012) discovered a curvilinear relationship between sense of belonging, academic performance, and the number of extracurricular activities a student chose to engage in. This suggests that a student's sense of belonging and academic achievement may be highest when the number of extracurricular activities is moderate. Involvement in too many activities may result in an overloaded schedule, but involvement in too few may result in missed opportunities. However, a moderate amount of activities (about two) may provide a perfect setting to learn skills, find one's place, and maintain enough time to focus on schoolwork. Additionally, Fox, Barr-Anderson, Newmark-Sztainer, and Wall (2010) found that participation in school sports teams encouraged students to identify with their school and its values, which, in turn, was associated with higher grade point average (GPA).

Notably, an enhanced sense of belonging may depend on the types of extracurricular activities a student engages in. (Martinez, Coker, McMahon, Cohen, & Thapa, 2016). For example, a student in an art club might feel more connected than a student athlete would, or vice-versa. The connection might depend on the quality of the program, values of the school or community, or other social factors. Unfortunately, there is little information in that area at this time, and future research is needed.

Negative Effects

Few studies have found negative correlations between extracurricular activity and academic achievement. There are, however, two factors sometimes caused by participation in these activities that may produce negative effects: an overloaded schedule and a narrow sense of identity.

Overload. Those who oppose participation in extracurricular activities often call attention to the possibility that extracurricular activities might interfere with time that could be spent doing schoolwork. Knifsend & Graham (2012) confirmed this time interference as a factor in determining academic success. As noted previously, they found that a high number of extracurricular activities (three or more) was detrimental to academic performance. This decline in academic performance can likely be attributed to overload, as students devote so much time to extracurricular activities that they are rendered unable to keep up academically. However, they also found that a moderate number of extracurricular activities (about two) contributed positively to academic performance. Thus, extracurricular activity may only produce a negative effect if the student is left with insufficient time and energy to devote to academics.

Narrow identity. Some students choose to define themselves by their extracurricular activities and place little emphasis on their roles as students, which also may be detrimental to academic success. Two studies support the legitimacy of this effect. Beron and Piquero (2016) found that the only situation in which the relationship between identity and GPA was consistently negative was when the student identified himself or herself primarily as an athlete, rather than as a student. Similarly, Bimper, Harrison, & Clark (2012) observed successful African-American collegiate athletes and found that the athletes were encouraged to identify as athletes more than they were encouraged to emphasize any other "pertinent role" (p. 19). One individual in the study asserted, "The White athlete comes to school to get a great education and hopefully be a good football player. The Black athletes . . . are taught to come to be a great football player and go to class because that's what keeps you eligible" (p. 14). The authors later implied that casting off such a narrow identity was an important factor in determining their academic success. The results of this second study should be applied with caution, due to the fact

that this study focused largely on race, which could be a limiting factor. The consistency of results between the two studies, however, supports the idea that identity plays an important role in determining academic outcomes. This concept may be applicable to other domains of extracurricular activity as well; when students allow any non-academic activity to define who they are, negative academic results may be expected to follow

Physical Activity and Academic Achievement

While there are numerous types of extracurricular activities students can participate in, many of the activities offered to students are sports. For this reason, it is appropriate to briefly examine the effects that physical activity has on academic success. Several recent studies have analyzed the relationship between these two variables, and both negative and positive correlations were reported.

Positive Outcomes

Several studies reported positive associations between physical activity and academic achievement. Three studies indicated that the more physical activity the students participated in, as well as the more fit they were, the more likely they were to get good grades (Ayan, Carral, & Montero, 2014; Morita et al., 2016; Pellicer-Chenoll et al., 2015). A fourth study found a positive correlation, so long as the physical activity was at a moderate or high intensity (Ardoy et al., 2013). Additionally, Koivusilta, Nupponen, and Rimpela (2011) asserted that students who are physically active during their adolescent years tend to achieve higher levels of education and better socio-economic status as adults.

Negative Outcomes

Meanwhile, two studies found negative correlations between physical activity and academic success. Dijk et al. (2014), reported a negative correlation between physical activity and academic success only among middle school students. The authors speculated that middle school students might be more prone to prioritizing physical activity over school-related work. In the second study, researchers used accelerometers to objectively measure physical activity in a sample of 1,778 students aged 6-18 and found a weak but negative correlation between the physical activity and academic success

(Esteban-Cornejo, Tejero-González, Martinez-Gomez, Cabanas-Sánchez, et al., 2014). The use of objective measures gives this study credibility; however, the authors did not categorize participants in different age groups, which raises the question of whether one group (for example, middle school students) may have skewed the results.

However, regardless of the outcomes of the studies, most of the studies failed to analyze the many layers and facets of their material deeply enough to form any definite conclusions concerning physical activity and academics. Given the contradiction between negative and positive results, it seems there must be more that factors into this debate. Taking all of these studies and ideas into account, research seems to indicate that the relationship between physical activity and academic achievement is more complex than simply stating that physical activity yields a better (or worse) academic performance.

Confounding Variables

In order to ascertain the relationship between physical activity and academic achievement, it is therefore important to examine the potential role of other variables that might affect the relationship—or in other words, confounding variables. In general, most of the studies examined the relationship without factoring in confounding variables, an oversight which weakens their arguments. Future researchers must include more extensive explorations of these variables if they wish to fully expose the issue. However, a few studies did take some of these alternative variables into account, namely age, intensity, and type of physical activity.

Age. Only one study (Dijk et al., 2014) examined results based on different age groups. As noted above, the authors only found negative correlations between physical activity and academic performance in middle school students. All other studies (Ayan et al., 2014; Esteban-Cornejo, Tejero-González, Martinez-Gomez, Cabanas-Sánchez et al., 2014; Jaakkola, Hillman, Kalaja & Liukkonen, 2015; Koivusilta et al., 2011; Morita et al., 2016; Pellicer-Chenoll et al., 2015) either focused solely on one age group or failed to distinguish between age groups. Based on the relationship found by Dijk et al. (2014) and the lack of related research in the other studies, age could have a significant effect on the value of physical activity in an academic context. For this reason, I recommend that future studies should include longitudinal research designs in order to identify the relation between physical

activity and academic achievement as a function of students' age.

Intensity. Research suggests that the intensity of the physical activity also plays a role in the academic consequences. Three studies looked into this phenomenon, and the results suggest that higher intensity activities equate with increased academic performance (Ardoy et al., 2013; Ayan et al., 2014; Phillips, Hannon, & Castelli, 2015). Ayan et al. (2014) suggested that moderate and intense physical activity activates certain areas of the brain, which can lead to increased attention, concentration, and general cognitive functioning. Future research should account for this relationship and focus on determining the upper and lower thresholds at which physical activity might affect academics.

Type of physical activity. The type of physical activity also affects academic outcomes. One particularly revealing article found that activities promoting cardiorespiratory capacity and motor ability benefitted students' academic performance, but activities promoting muscular strength were not significantly correlated with such performance (Esteban-Cornejo, Tejero-González, Martinez-Gomez, Del-Campo, et al., 2014). Similarly, Jaakkola et al. (2015) found that fundamental movement skills (basic movements such as stretching, throwing, kicking, and running) predicted academic performance in 9th grade students, suggesting that activities promoting those skills might be beneficial to students as well. This process works similarly to those described in the section concerning intensity. Some physical activities seem to activate neural pathways that lead to better cognitive functioning while others do not (Jaakkola et al., 2015). Again, future research should focus on different kinds of physical activity and the way they might affect academic performance.

Conclusion

The purpose of this paper was to provide a comprehensive review of recent literature studying the effects of extracurricular activity and physical activity on academic achievement. Research seems to suggest that extracurricular activities do more benefit than they do harm, provided that the student does not allow those activities to control his or her life (Knifsend & Graham, 2012). Parents should monitor the time and effort their children devote to these activities and play an active role in promoting a healthy balance between the activities

and academic endeavors. Given these circumstances, parents should feel reasonably assured that allowing their children to participate in extracurricular activities would not ruin their children's academic lives, but rather may benefit their children's academics.

Meanwhile, research does not yet provide consistent conclusions concerning physical activity's effect on academic achievement. The relationship is affected by a wide variety of confounding variables that need to be taken into account before definite conclusions can be reached.

Future research is necessary concerning both extracurricular activity and physical activity. Such research should examine confounding variables like those listed above, as well as other variables, such as the duration of the activity and the time of day the activity is performed. Additionally, a more holistic approach to the relationship between extracurricular activity and academics would also be beneficial, as there are many factors related to extracurricular activities that affect academic performance and one can reasonably believe that a combination of these factors determines the academic outcome.

Furthermore, future research should employ more sophisticated measures of physical activity. Self-report measures were commonly used to measure physical activity, but better methods of measurement would likely secure more accurate results

The relationship between physical activity and academics, as well as the relationship between other extracurricular activities and academics, is complex. Nonetheless, these relationships deserve attention, because in a sense, these relationships are about more than activities and grades—they are about the well-being of the children that will go on to shape the future. Their success deserves undivided attention.

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