

Can Physical Activity and Musical Training Help Academic Performance

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ABSTRACT

Regularly engaging in particular free-time activities has the potential to impact the quality of an individual's life. Certain activities, or hobbies, have been found to be a predictor of academic success. This study aimed to observe the relationship between two specific types of hobbies with successful academic performance. To gather these findings, searches were conducted on databases such as PubMed, BioMed Central, and ResearchGate. Along with this, reputable secondary sources were also consulted.

Keywords: Hobbies, physical activity, musical instrument, academic performance, learning.

Subject: Neuropsychology

INTRODUCTION

The measure of success in a classroom is most commonly defined by a student's test results and grade point average. Academic performance is influenced by a variety of factors, some of which are physiology, cognition, and environment (WHO). Bergin (1992) theorized that adolescents choosing to experience more recreational activities would develop more skills crucial to learning in school. How much one achieves academically may depend on what they do every day outside of the school setting. For instance, hobbies involving physical activity and musical training can increase the likelihood of success with academic performance by improving cognitive function.

LITERATURE REVIEW

As defined by Cambridge Dictionary, a hobby is "an activity someone does for pleasure when they are not working." Hobbies are often associated with extracurricular activities, but extracurricular activities are tied to school and its education. Hobbies can be viewed more generally as what a person does for enjoyment regardless of school. Hobbies are important because they may help with the development of skills useful for education (Bergin, 1992). A study by Bergin (1992) observed that high academic achievement had the potential to be caused by leisure activity participation, but not because participation produced academically useful knowledge and resulted in the learning of content relevant to school. The researcher suggested that future studies delve deeper into what students *do* in their hobbies that affect how much they can achieve academically. Since then, there has been more research done on different types of activities.

Analyses on physical activity (PA) show that fitness and participation in sports have a collectively positive effect on children's academic performance (Howie & Pate, 2012). A recently published WHO fact sheet summarized the physical and psychological benefits of PA: prevention and management of diseases such as diabetes, proper development in youth, diminished depression and anxiety symptoms, and enhanced executive function ("Physical"). Another type of activity, one that includes playing an instrument, has a list of benefits as well. In an experiment, auditory neuroscience researchers highlighted the long-term benefits of musical training, reporting that older musicians responded to sound just as well as young musicians, and significantly better than non-musicians. The research also discovered that age-related memory loss was minimal for musicians compared to non-musicians (Parbery-Clark et al., 2012). Furthermore, musical experience improves language comprehension (Trei, 2005). Simply listening to music, itself is already helpful, as it can create positive moods with the release of dopamine ("Music").

BENEFITS OF PHYSICAL ACTIVITY

Physical activity is known to have many benefits. Physical activity, especially consistent aerobic exercise, has a considerable impact on academic achievement (Barbosa et al., 2020). In adolescents, brain structure can be altered by physical activity. Protein needed to maintain brain health is formed through chemicals in the body produced through Aerobic exercise. This protein, called Brain-Derived Neurotrophic Factor, can promote hippocampus growth, which as a result affects an individual's ability to recall and retain memory (Ha, 2018). In fit children, hippocampus brain volumes are larger than in unfit children, meaning their memories may be more enhanced (Chaddock-Heyman et al., 2014). Aerobic fitness is linked to how well a student does in math, reading, and English. This has been expressed by experimental randomized control trials and correlational studies ("Activity").

BENEFITS OF MUSICAL ACTIVITY

Playing an instrument is one of the best ways to engage the brain. It can reap even better results than just listening to music, which is already proven to have positive effects. Musical training makes both hemispheres of the brain work together and "exercise" (Sapega, 2017). Again, music itself is powerful. It activates the auditory cortex in addition to areas in the brain that control memory and movement, keeping neuronal pathways healthy for learning and cognition. Compared to others, music listeners also report better mental health (Budson). 3185 eighteen or older U.S adults were surveyed by AARP. Only 50% of people who never encountered musical exposure as an adolescent rated "excellent" or "very good" for their ability to learn new things, while approximately 68% did among those introduced to music young (Mahegan & Rainville, 2020).

CONCLUSION

A growing number of schools prioritize having their students engage in sedentary learning (Chaddock et al., 2011). Public schools with low budgets commonly cut music programs from the curriculum (Giacomini, 2015). Many students are not provided with enough opportunities to engage in physical activity (Chaddock et al., 2011). For this reason, individuals should realize the value of what they can do, on their own, with leisure time. It is important that pursuit of interest lasts beyond school, as self-organized, self-maintained activities. Science today communicates how plastic the human brain is. How much is achieved academically depends on how the body and mind are nurtured through healthy daily activities like playing an instrument or sport. Hobbies that involve exercise or musical training contribute to one's overall mental and physical well-being, which must be in good condition for effective learning.

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