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How Does Physical Activity Affect Cognitive Functions, Academic Performance and Positive Attitude?



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Abstract. The aim of this paper is to explain relationships between physical activity (PA) and cognitive functions (CF), academic performance (AP) and positive attitude (PA). Physical activity refers to all forms activity that requires physical effort, from simple house tasks to performance sports. This paper focuses on basic and specific movement skills, exercises, and sport skills. According to many research results, physical activity has an important roles on improving cognitive functions, raising academic performance and developing positive attitude. For instance, physical activity promotes children's and young people's health and well-being in many ways. It has also been noted to have a positive effect on learning and cognitive functions, such as memory and executive functions and, as a result, possibly on academic performance (Hilman et al., 2009; Kwak et al., 2009; Tomprowski et al., 2008). Because, physical activity is an important medium of learning offered by the growth environment, and physical activity increases brain volume and activity, in particular in regions associated with memory and executive functions (FNBE, 2012). Furthermore, many previously conducted studies have demonstrated that all forms of physical activity – from physical education to passive exercise – have a positive effect on the academic performance of children, and on the development of their cognitive characteristics. Reliable results from other studies have also indicated that physical activity has no negative effect on the academic performance of the children (Tomprowski et al., 2008). Physical activity also affects development of positive attitude. According to the results of the study conducted by Koca and Demirhan (2004), Hünük and Demirhan (2010) and Cairney et al. (2012); the attitude points of the children who do sports regularly for Physical Education and Sports are higher than those of the other children. As a result, it can be said that there are associations among PA, CF, AP and PA.

Biography. Prof. Dr. Giyasettin Demirhan is working at Hacettepe University Faculty of Sport Sciences. He is Dean of the Faculty and Head of Physical Education and Sport Teacher Education Department. Also, he is a former president of Turkish Sport Sciences Association. He is a member of some international scientific association like AIESEP, FIEP, ECSS, ISHPES. Currently his research interests are critical thinking, instructional technology in PE, relationship between physical activity and academic performance and cognitive process, risk perception in outdoor-adventure sports. He published 23 articles in international refereed journals and 43 articles in national referred journals. Also, he has two books and 10 book chapters in physical education and sport pedagogy. He presented more than 100 papers in international and national scientific congresses and completed 12 international and national scientific projects in his own research field. He was as keynote and invited speaker at many national and international scientific meetings. Also, he organized many international and national scientific meetings. One of them is Global Forum for Physical Education Pedegogy 2016. He has 131 citations in scientific journals which are indexed in SSCI and SCI and 373 citations in Google Scholar.