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Article



Aleksandra Ivanovna Miheeva
Fergana Polytechnic Institute
Senior lecturer

THE IMPORTANCE OF PHYSICAL EDUCATION IN MODERN SCHOOLS

Abstract: *There are many benefits physical education provides today's students and society. Within a school setting, a physical education program can serve society in many ways if implemented and utilized appropriately. There are many areas physical education can serve and positively affect students and society. One is overall physical fitness. For example, physical education helps students and society improve skill-related components such as speed, agility, reaction time, balance, coordination, and basic movement patterns. Physical education helps students and society improve upon are strength, endurance, flexibility, and cardiovascular/respiratory activities. This paper explores the scientific evidence that has been gathered on the contributions and benefits of physical education and sport in schools for both children and for educational systems. The review suggests that physical education have the potential to make significant and distinctive contributions to development in each of these domains. It is suggested that physical education have the potential to make distinctive contributions to the development of children's fundamental movement skills and physical competences, which are necessary precursors of participation in later lifestyle and sporting physical activities.*

Key words: Physical activity, physical education, sports, health, schools.

Language: English

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Introduction

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Schools are widely recognized as important settings for the promotion of physical activity among young people. The vast majority of children and adolescents spend most hours of their day at school, so it is essential that they be given ample opportunity to be physically active if they are to reach the recommended level of 60 min/day. The school years are a time for teaching young people the skills, knowledge and behaviour for lifelong habits. Physical activity has not only health benefits and contributes to a child's physical, mental and emotional development but also has potentially broad social and academic gains.

Physical activity is central to health, and its importance clearly extends beyond its role in achieving energy balance to prevent and treat obesity and overweight. Adequate daily physical activity

improves cardiovascular health, metabolic health, brain and mental health, and musculoskeletal health—benefits that recent research shows are gained across the life span. Important emerging research has further focused on the association between physical activity in youth and academic achievement.

Clinical and public health guidelines indicate that youth need a minimum of 60 minutes per day of vigorous- or moderate-intensity physical activity to optimize health and development. Because many youths spend a substantial amount of time in school, this report focuses specifically on the role schools can play in increasing physical activity among youth and providing opportunities to meet these guidelines. This role falls squarely within schools' long-standing tradition of providing access to health-related services such as health screenings, nutrition programs, and immunizations. The assumption that school-based physical education can provide enough physical activity for children and adolescents has recently been

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challenged on a variety of fronts. First, the 60 minutes per day of physical activity that is health enhancing is nearly impossible to achieve through physical education, even with the highest-quality physical education curriculum. Second, quality physical education must include time for teaching activities and lessons that may not be physically active. Third, political and economic pressures on education systems to improve standardized test scores have had the unintended consequence of reducing or eliminating physical education curricula and thus students' opportunities for physical activity. Therefore, the purpose of this article is to highlight the central need not only to provide quality physical education for all youth but also to implement other evidence-informed methods schools can use to help all children and adolescents attain a minimum of 60 minutes of vigorous- or moderate-intensity physical activity per day to improve health, development, and academic performance.

Literature review

Physical inactivity is a key determinant of health outcomes across the life span. A lack of activity increases the risk of heart disease, colon and breast cancer, diabetes mellitus, hypertension, osteoporosis, anxiety and depression, and other diseases. Recent studies have found that in terms of mortality the global population health burden of physical inactivity approaches that of cigarette smoking and obesity (Lee et al., 2012). Indeed, the prevalence of physical inactivity, along with this substantial associated disease risk, has been described as a pandemic (Kohl et al., 2012). Further, higher educational achievement and years of schooling are both markers and determinants of better health status, mainly as a result of education's correlation with improved work and economic conditions, enhanced social psychological resources, and the ability to pursue a healthful lifestyle (Ross and Mirowsky, 1999). There is a long-held belief that health is an important determinant of educational performance, yet only recently has evidence begun to accumulate on a plausible physiologic pathway explaining the influence of one important health behavior—physical activity—on brain function and cognitive processes. These data increase confidence that improving physical activity and fitness may result in better school achievement and performance.

Unless they take a nap or lie down to rest, all people are physically active from the time they get up in the morning until they go to bed at night. Physical activity is a necessary part of everything people do at home, work, or school; while going from place to place; and during leisure time. In the still-emerging field of physical activity and public health, physical activity is commonly defined as “any bodily movement produced by skeletal muscles that results in energy expenditure” (Caspersen et al., 1985, p.

126). Despite this straightforward definition, physical activity is a complex behavior with a wide variety of types and intensities. Types of physical activity may be categorized, for example, by type of movement (e.g., walking, skipping), by sport (e.g., soccer, badminton), by life context (e.g., at school, at home, during transportation), or by predominant physiologic effect (e.g., cardiorespiratory conditioning, muscle strengthening). Regardless of the categorization scheme, physical activity operates through multiple physiologic pathways to influence many health outcomes. Although physical activity can be categorized and discussed in many ways, aerobic activities are the most common and have the broadest physiologic and health effects. Aerobic activities are commonly categorized as being of sedentary, light, moderate, or vigorous intensity based on the rate of energy expenditure.

Physical Education

Physical education became a subject matter in schools (in the form of German and Swedish gymnastics) at the beginning of the 19th century (Hackensmith, 1966). Its role in human health was quickly recognized. By the turn of the 20th century, personal hygiene and exercise for bodily health were incorporated in the physical education curriculum as the major learning outcomes for students (Weston, 1962). The exclusive focus on health, however, was criticized by educator Thomas Wood (1913; Wood and Cassidy, 1930) as too narrow and detrimental to the development of the whole child. The education community subsequently adopted Wood's inclusive approach to physical education whereby fundamental movements and physical skills for games and sports were incorporated as the major instructional content. During the past 15 years, physical education has once again evolved to connect body movement to its consequences (e.g., physical activity and health), teaching children the science of healthful living and skills needed for an active lifestyle (NASPE, 2004). Sallis and McKenzie (1991) published a landmark paper stating that physical education is education content using a “comprehensive but physically active approach that involves teaching social, cognitive, and physical skills, and achieving other goals through movement” (p. 126). This perspective is also emphasized by Siedentop (2009), who states that physical education is education through the physical. Sallis and McKenzie (1991) stress two main goals of physical education: (1) prepare children and youth for a lifetime of physical activity and (2) engage them in physical activity during physical education. These goals represent the lifelong benefits of health-enhancing physical education that enable children and adolescents to become active adults throughout their lives.

Children in elementary and middle school spend about 10-40 percent of their time in physical education

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classes engaged in vigorous- or moderate-intensity physical activity (Simons-Morton et al., 1993, 1994; McKenzie et al., 1996; Sallis et al., 1997; Belsky et al., 2003; McKenzie et al., 2006). On average they have two physical education class periods per week, each for about 30 minutes (Belsky et al., 2003). Assuming that 35 percent of physical education time is spent in vigorous- or moderate-intensity physical activity, children spend an average of 4 minutes per school day doing vigorous-or moderate-intensity physical activity in physical education classes. If elementary school students had 30 minutes of physical education daily (150 minutes per week) and middle school students had 45 minutes of physical education daily (225 minutes per week), the estimated number of minutes per day spent doing vigorous or moderate-intensity physical activity during physical education would increase to 11 minutes and 16 minutes, respectively. If the proportion of time in vigorous- or moderate-intensity physical activity during physical education were increased to 50 percent through the use of standardized high-quality physical education programs, the average time per day would increase to 15 minutes and 23 minutes for elementary and middle school students, respectively. High school students also average 2 days per week of physical education classes (Delva et al., 2006). If the proportion of time they spent in vigorous- or moderate-intensity physical activity during physical education were assumed to be similar to that for primary school students, they would average 4 minutes per day currently, 16 minutes per day if they attended the classes daily, and 23 minutes per day if the classes were both daily and of high quality. These estimates are a bit lower than those in a recent analysis (Bassett et al., 2013).

Methodology

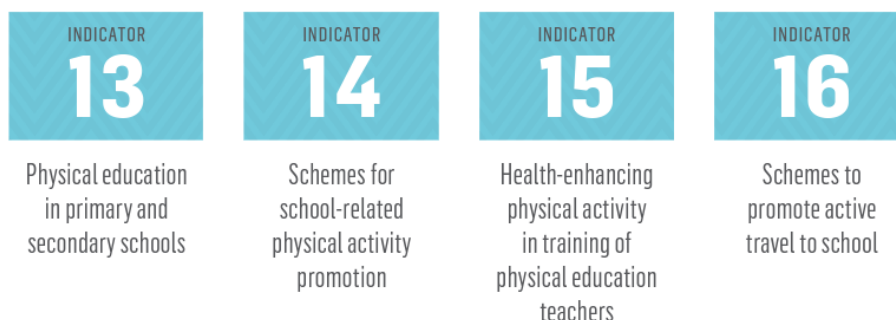
This article provides a snapshot of the current status of promotion of physical activity in the

education sector in EU Member States. It presents data collected on several indicators (Box 1) designed to monitor physical education in primary and secondary schools throughout the EU, diverse schemes for school-related physical activity promotion, specialized training for physical education teachers and schemes to encourage active travel to school.

For indicator 13, countries were asked to report the total number of hours of physical education provided in primary and secondary schools per week, how many of those hours were mandatory and how many optional and whether the quality of physical education was monitored. Countries were also asked whether they had national schemes for increasing physical activity before, during and after the school day (indicator 14) and if they had national schemes to promote active travel to school (indicator 16). An additional indicator was whether health-enhancing physical activity was a module in the curriculum of physical education teachers and whether it was a mandatory or an optional part of their training.

Physical activity in schools can be increased in several ways. The most broadly used practice is physical education, which is part of the school curriculum in all EU Member States; however, the number of hours of physical education provided, whether compulsory or optional, and the quality vary widely among countries. In order to provide good-quality, regular physical education and promote safe physical activity to all young people in schools, physical education teachers must be adequately trained in promoting health-enhancing physical activity, in addition to traditional sports. More inclusive, varied activities should be offered, as traditional, competitive sports are often not suitable for all young people and especially those who are most in need of physical activity.

Box 1. Indicators of physical activity addressed in this article.



Results

Member States provided various examples of initiatives to promote physical activity through the education sector or in schools, nationally or subnationally. The most common were improving the

quality or increasing the quantity of physical education lessons and promoting active travel to school. Some of the examples consisted of after-school programmes, and only a few were for active school breaks and active breaks during school lessons,

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in line with the responses to the questionnaire. These examples of good practices can provide inspiration for policy-makers, schools and researchers. They provide a broad overview of the type of actions taken to increase physical activity among children and adolescents in EU Member States.

All Member States provide physical education classes in schools, and most included 2 h/week in the

school curriculum. In many cases, the number of hours depended on school or subnational policies. Twenty countries reported that the number of hours of physical education was mandatory in primary schools, and 21 reported the same for secondary schools (Fig. 1).

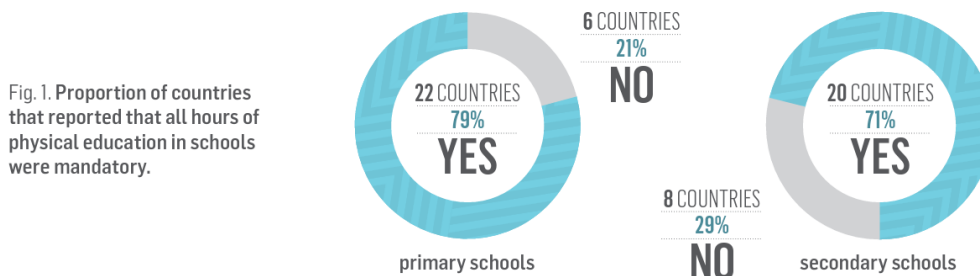


Fig.1

In the remaining countries, the hours were either partly or entirely optional. The answers to the questionnaire showed that 20 countries monitor the

quality of physical education in primary or secondary schools (Fig. 2).

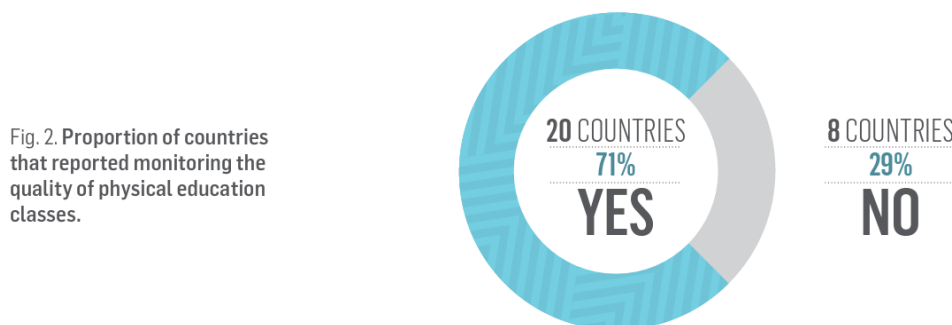


Fig.2

Monitoring is conducted in various ways in Member States, including school inspections, screening, quality audits, qualitative and quantitative research with students and teachers and, in some cases, reaching targets as part of the curriculum.

Twenty-one countries (75%) reported that training in health-enhancing physical activity was included as either a mandatory or an optional module in the curriculum for physical education teachers (Fig. 3).



Fig.3

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Many activities to increase physical activity before, during and after school hours were reported. After-school activities were the most common scheme, 19 Member States offering this at national level. Additionally, 14 countries reported national

initiatives for active school breaks; 14 had programmes for active travel to school, and 11 countries had schemes for active breaks during school lessons (Fig. 4).

Fig. 4. Proportion of countries with schemes for physical activity promotion at school and for active travel to school



Fig.4

In addition, 12 countries (43%) reported that physical activity in the education sector was monitored or surveyed, and 18 (75%) reported that funding had been allocated specifically to health-enhancing physical activity; 26 (93%) had at least one policy or action plan to promote physical activity in the education sector.

BELGIUM

Sport after school pass (Sport na school pass)

The “Sport after school pass” (SNS pass) offers affordable after-school sport for all secondary school pupils with the goal of increasing their participation in sport, especially for those who are inactive. The programme introduces young people to local sports facilities and inspires them to participate in sports throughout their lives. It also encourages secondary school pupils to use the sports facilities of selected local sports clubs and sports providers immediately after school. Pupils can choose where, when, with whom and how often they engage in sports. Various activities are tailored to the interests of the target group and take place in different sports facilities or schools in the neighbourhood. The local programme of sports activities is established in consultation with the municipal sports department(s), local sports clubs, schools and private sports centres. The “Flexible assignment of physical education teacher” (Follo) is responsible for organization, coordination and cooperation with the various partners. In the academic year 2017–2018, 12 780 passes were active in 852 schools in 208 municipalities. The number of Folloes will be increased shortly, and guidance on afterschool sports activities will be included in the “lessons package” of physical education teachers. There are plans to expand the programme throughout Flanders.

CROATIA

Polygon for physical activity of schoolchildren¹

In Croatia, approximately 14% of the main elementary schools and 83% of peripheral schools do not have sports facilities. To support teachers in providing physical education that meet students’ needs for physical activity, kinesiological equipment known as the “Polygon for physical activity of schoolchildren” was designed in the National Health Promotion Programme, “Healthy living”. This set of moveable equipment consists of 25 elements, which are easy to assemble and disassemble. The materials in the equipment were tested for safety at the Faculty of Mechanical Engineering and Naval Architecture, and the equipment was tested for functionality and for use by children with disabilities by experts at the Faculty of Kinesiology. Additionally, a manual was prepared to help teachers to use the equipment. The Ministry of Health has pilot-tested a multisectoral intervention for developing and maintaining the habit of physical activity in school-aged children through use of the Polygon equipment. The equipment has been provided to 120 main elementary schools with no sports facilities, and three-member teams from each school have been trained in its practical use. In the near future, all peripheral schools without sports facilities will also be provided with the equipment, with training of three-member teams at each school.

CYPRUS

Run for my health²

The Ministry for Education and Culture organized a large running event for students in secondary schools, in cooperation with the company OPAP Limassol International Marathon GSO, in January 2018. The race consisted of 1500-m and

¹ <https://www.hzjz.hr/wp-content/uploads/2016/10/POLIGON-ZA-TJELESNU-AKTIVNOST-%C5%A0KOLSKE-DJECE.pdf>

² <http://enimerosi.moec.gov.cy/archeia/1/ypp6747a>

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3000-m distances for male and female students. The purpose of the event was to motivate participants to increase their physical activity outside school hours. To ensure students' participation, they were required to train during extracurricular school sports periods and to pass a test organized in each school to limit the number of participants in the final race. The schools, and physical education teachers in particular, were fully informed and given instructions during seminars for conducting activities. The race was organized in a festive spirit in the presence of public figures in sports, whom students had the opportunity to meet, such as the Cypriot Fair Play Ambassador football player Constantinos Charalambidis and Cyprus #Be Active lifelong Ambassador Kalli Hadjiosif.

CZECHIA

Tell me your story³

"Tell me your story" is a campaign for schools, low-threshold facilities and sports clubs targeting Roma children and children at risk of social exclusion. The attendance of children from poor socioeconomic backgrounds in sports clubs is low, probably because of difficulties of integration and financial means. The targeted clubs are usually poorly equipped for outdoor activities for children. In May 2016, about 60 schools and low-threshold facilities in vulnerable localities took part in this campaign. Altogether, 7 primary and special schools and 12 lowthreshold facilities for children and young people were involved. They organized sports tournaments and competitions in various disciplines, of which ping pong, athletics and ball games were the most popular. The campaign included a challenge for individual children to write or record their experience of sports, with the goal of motivating them to continue to be physically active in their area of interest. The purpose of the stories was to show children that sport can help overcome obstacles and improve various aspects of life. The campaign lasted for 2 years and is planned to continue and be extended.

DENMARK

45 min of physical activity in schools daily

Daily physical exercise was introduced as part of a school reform in 2013. Students in Danish public primary and secondary schools are required to engage in 45 min of physical exercise per day to ensure consistent or improved learning, health and overall well-being. The method by which the 45 min are incorporated into the school day is the responsibility of the school. Activities can be integrated with learning structures or be conducted during time dedicated to exercise. The Ministry provides inspirational material online and invites professionals

to learn how to provide physical exercise in the classroom. Schools and municipalities are assisted in designing systematic, structured plans. Motivation, variety and student involvement are emphasized. The activities may be joint ventures with local sports clubs or companies and can stretch over a longer time. They can take place in the classroom, in sports grounds and playgrounds or in the environment surrounding the school. It is planned to continue integrating physical activity into lessons and into the curricula of primary and secondary schools. An evaluation of the initiative showed that inclusion of physical activity in lessons in the Danish language and maths improved the students' well-being and learning. Furthermore, 14% of teachers now incorporate physical activity into everyday teaching; 74% of teachers do so at least once a week, and only 2% never include physical activity in lessons. The students themselves report quieter classrooms, better concentration and a better ability to learn when physical activity is part of a lesson.

ESTONIA

Redesigning physical education⁴

One of the aims of the Fundamentals of Estonian sports policy 2030 is to redesign physical education to include the promotion of lifelong physical activity, habits and motivation to be active. The aim in the near future is to increase the health literacy of all pupils about physical activity. Physical education is to be changed into exercise education, corresponding to today's requirements, at all levels of education. To achieve this, the objectives of exercise and sport curricula will be updated, and integration of this subject into others will be increased, and training sessions will be organized on the main types of exercise (running, swimming, cycling, skiing, orienteering) and games. The objective is to establish a desire and the habit of engaging in exercise and sports. New versions of physical education curricula have been prepared.

Schools in motion⁵

The project "Schools in motion" is a multicomponent approach to physical activity in schools by providing active lessons, active recess, active transport, physical education lessons for lifelong physical activity and indoor and outdoor environments that encourage physical activity. Key elements of the project are the involvement of all school personnel, students and parents in these active solutions. Schools are given various ideas for supporting physical activity among students during recess. Pilot schools have used the solutions that suit them best. Examples include dance recess, providing sports equipment for recess activities, outdoor recess, obstacle courses and changes in the environment.

³ <http://www.szu.cz/tema/podpora-zdravi/je-to-i-tvuj-pribeh-kampan>

⁴ <http://www.kul.ee/et/tegevused/sport/arengustrateegia-cesti-sport-2030>

⁵ <http://liikumislabor.ut.ee/avaleht>

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Furthermore, playground leaders, mostly older students, have been trained to organize active games for younger students during recess. Regarding active lessons, teachers in the pilot schools participate in seminars at which possibilities for physical activity during school hours are introduced, such as active breaks, integration of physical activity into lessons and outdoor lessons. Additionally, supportive materials and tools have been developed and are disseminated to teachers, who are encouraged to report good practices. Schools in motion receives support from the Ministry of Social Affairs, the Estonian Ministry of Culture and the Ministry of Education and Research.

FINLAND

Finnish schools on the move⁶

“Finnish schools on the move” is a national programme for establishing a culture of physical activity in Finnish comprehensive schools. The schools and municipalities that participate in the programme implement their own plans to increase physical activity during the school day. The aims are to increase physical activity during lessons, school breaks and after school in order to improve well-being, decrease sedentary behaviour and enhance learning, student participation and active travel to school. The programme is conducted by the Finnish National Agency of Education and the Ministry of Education and Culture. It is financed from the national lottery and coordinated by the LIKES Research Centre for Sport and Health Sciences. Finnish schools on the move started with a pilot phase in 2010–2012. In May 2017, more than 90% of municipalities and 80% of comprehensive schools (2000 schools) were involved in the programme. This is one of the main projects in knowledge and education in the Government programme, which is to be extended throughout the country to ensure 1 h of physical activity by children each day.

GERMANY

National recommendations for physical activity and the promotion of physical activity⁷

The national recommendations were made in the context of the national action plan “In form”, the national initiative to promote healthy diets and physical activity. Since 2008, In form has been an important basis for various activities for sustainably improving people’s diets and physical activity. The national recommendations for physical activity and physical activity promotion were introduced in 2014

by an intersectoral working group at the Federal Ministry for Health for physical activity promotion in daily living and were made possible by project funding from the Ministry. The recommendations for physical activity and physical activity promotion are for professional stakeholders and organizations, which include all experts and organizations in sports (e.g. sport clubs), education (e.g. child care facilities and schools), the health system (e.g. health insurers), local authorities (e.g. in urban development and spatial planning), politics (e.g. health or education policy) and other relevant areas of society that directly or indirectly influence the development and implementation of measures to promote physical activity or physical activity-related health promotion. They serve as a scientific guide for those stakeholders and organizations in their daily work and in developing strategies for future activities in physical activity promotion. National recommendations for physical activity and the promotion of physical activity were published in 2016, which apply to all age groups as well as to adults with chronic diseases. The next phase is dissemination of the national recommendations, and the methods have been discussed by stakeholders in various fields, including target group-oriented information material. A brochure is being prepared to increase physical activity in settings such as child day-care facilities, schools, workplaces and long-term care facilities.

Conclusion

Clearly, physical activity has the potential to make significant contributions to the education and development of children and young people in many ways, although further research and evaluation will help us better understand the nature of these contributions. Nevertheless, in each of the domains discussed—physical, lifestyle, affective, social, and cognitive—there is evidence that physical activity can have a positive and profound effect. In some respects, such an effect is unique, owing to the distinctive contexts in which physical activity take place. Consequently, there is a duty for those who teach and acknowledge the value of physical activity to act as advocates for its place as a necessary feature of the general education of all children. They need to argue not just for the inclusion of physical activity within the curriculum, and for the provision of sufficient time, but also to stress the importance of the quality of the program and share information on the benefits of physical activity among administrators, parents, and policy makers.

⁶ <https://liikkuvakoulu.fi/english>

⁷ <https://www.sport.fau.de/files/2015/05/National-Recommendations-for-Physical-Activity-and-Physical-Activity-Promotion.pdf>

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