

## **Physical and Health Education in Germany**

*From School Sports to Local Networks for  
Healthy Children in Sound Communities*

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### **Abstract**

Health education as a part of physical education (PE) in schools has a long history in Germany. This chapter outlines the most important steps of PE development in Germany and explains the current status of health education within PE. Regarding relevant problems of the German school health system, various practice models are introduced. A special focus is on the long-term community-based intervention project Healthy Children in Sound Communities, a unique curricular program for primary school children. The evidence-based outcome of this project leads to future visions of health education in Germany, including a monitoring system for motor and health development and social well-being of children.

### **Keywords**

*Health, physical education, physical activity, obesity, motor skills*

## Introduction

The term *health* has had and still has many different meanings. Various domestic German names also exist for the term *physical education* (PE) with different purposes of education in German school history. However, in each epoch in German school-based PE since the 1860s, health has been considered a part of any physical activity taught in PE (Balz, 1995; Naul, 2002a; Richter, 2006). With the roots of health promotion in German schools as a part of the subject of PE, and with current developments in health-enhanced PE in Germany, it must be acknowledged that up to the foundation of the German Empire (1871) until the end of World War I (1918) and in the years of the Nazi regime (1933–1945), Germany has never had a central government across the geographical region of the country. Today, 16 regional German states exist, all culturally independent. That means they rule different systems of schooling with different PE curricula and different syllabuses of PE (Geßmann, 2008; Stibbe & Aschebrock, 2007). References that report on the development of the roots of health and PE in Germany give only two main German states: the former state of Prussia and the current state of North Rhine-Westphalia, established by the British occupation authority in 1946. The education ministries and policy making in both states promote PE and health and are valid German examples that have become models for other German states.

## History

For the first time, a gymnastics curriculum in Prussia (1862) was designed after the Ling system. One purpose of teaching PE was to improve health in folk schools. However, after the “Quarrel of Parallel Bars,” of which the first curriculum was a part, it was replaced by the new school gymnastics system of Adolf Spieß (1868). Another important impact started in 1882 when the Prussian Minister of Education at Berlin, von Gofßler, administered an act to support gymnastics teaching more outdoors and not in small gymnasiums. In the 1880s and 1890s, outdoor games and sports became new elements for extracurricular activities in German secondary schools. A new wave of health-enhanced Swedish gymnastics was incorporated into the first Prussian PE curriculum for girls (1913). However, before World War I neither English sports nor Swedish gymnastics weakened the traditional gymnastics system of German order-, free-, and apparatus exercises (the Spieß system; Naul, Jonischeit, & Wick, 2000). In the Weimar Republic (1918–1932), PE at school was double-binded between new educational purposes and curriculum elements and traditional, more law-and-order-oriented discipline and gymnastics exercises to replace the lost military service.

For Nazi-state authorities (1933–1945), the out-of-school Hitler Youth Organization became more important than the regular school system. Nevertheless, in 1937 a new state PE curriculum was introduced for boys, and PE was extended to 5 hours per week. Daily physical activities were a part of the official school curriculum, but less for health purposes than for strong Aryan body-training. The ideology of the Aryan strength of power and racial superiority remained a long-lasting hurdle for postwar acceptance of PE in the 1950s. An important step forward was taken in 1956 when the “Recommendations on the Promotion of Physical Education in Schools” (Wolf, 1974, p. 46) were approved. It was a call for daily PE during the first two years of primary school and from the third school year onward, three times per week. The purpose of PE was less shaped by health than by social and moral values of education to reshape the subject for teaching. However, to the mid-1960s, PE at school gained less support in real school life. As early as 1968, North Rhine-Westphalia had become the first German state to abandon

the term *physical education* in favor of *subject sport* (Naul & Großbröhmer, 1996), and in the early 1970s, all German states adopted the name *sports education* for the subject. In the second half of the 1970s, Kurz (1977) took the lead in reformulating the educational function of sports education in more realistic terms, omitting the level of social and moral outcome of education. The aim was to create sporting *Handlungsfähigkeit* to prepare pupils for lifelong exercise and pursuit of recreational sports. The concept of *Handlungsfähigkeit* in sports represents three general objectives: The intention behind sports education must account for objectives other than the performance principle, must include fundamental forms of movement (running, jumping, throwing), and must encompass the advancement of social skills and a cognitive approach to sports (Kurz, 1986). As a part of *Handlungsfähigkeit* within sports, nine pedagogical tasks were demanded as the purpose of a new school subject. The first task mentioned on the list was “preventive training and healthy lifestyle” (Naul & Großbröhmer, 1996, p. 33).

In the late 1980s and early 1990s, the concept of *Handlungsfähigkeit* was challenged regarding the lost impact of social and moral character building (Naul, 2002b) and by the Ministry of Education to focus the subject on “health education through sports” (Becker, Pack, & Uher-Derigs, 1995; Stibbe & Aschebrock, 2007). Later, the term *health education* was replaced by *health promotion*. A turning point occurred with the new PE curriculum for the Vocational College Schools (secondary school level) in the late 1990s when the subject’s name changed to sport and health promotion (Naul, 2000). A new type of PE curricula was also established in the years 1999 to 2001. The former task of “preventive training and healthy lifestyle” was changed into a pedagogical perspective of “improving fitness and developing health perception” but was also ranked lower in physical terms but higher in social terms than before.

## Current State of Well-Being of Children and Youth

Problems that counteract health development of children and youth in Germany are manifold but could be summarized into two groups: internal problems of school life and PE teaching that counteract health development and external problems in the out-of-school environment and in societal development.

A nationwide audit of PE in German schools reported facts that highlight important internal problems, the SPRINT Study (Deutscher Olympischer Sport Bund, 2006). In this study (Brettschneider & Brandl-Bredenbeck, 2011), almost 200 school principals; more than 1,000 teachers; about 9,000 pupils from Grades 4, 7, and 9; and their parents (approximately 4,300) participated. Time allocation for PE was about 2.3 hours per week instead of the 3 hours demanded by state curricula. In elementary schools, almost 50% of all PE lessons are given by nonlicensed PE teachers. The most essential aim and objective of PE viewed by school principals was fairness and social understanding (79%). Physical fitness and health were added as the third important aim and objective (63%) by the school principals, and of the extracurricular activities offered, only up to 36% were specially designed school-based health programs. Pupils, however, ranked fitness and health first place in their aims and objectives in PE. However, PE teachers and their school principals gave less importance to health-enhanced PE. In addition, the main internal problem in German PE to support health is that teachers untrained in PE teach about 50% of all PE lessons in German elementary schools. A variety of problems also exist due to societal changes and out-of-school environmental developments (Schmidt, 2003, 2008). From a socio-ecological perspective, the physical environmental changes of the conditions at home and the housing where children grow up have to be considered. Social environmental changes have affected lifestyle patterns of children and youth, including physical activity, enrollment in sports,

nutrition habits, and an increase of sedentary leisure activities, particularly accompanied by modern electronic devices.

Parental overprotection goes with the increase of overmotorized areas that offer no real walkability nor safe, clean footpaths. Children do not experience their living physical environment regularly on their own but are transported by cars and buses. Children now play more inside at home with electronic devices (Lampert, Mensink, Rohmann, & Woll, 2007) instead of playing outside with nearby friends (Lampert, Sygusch, & Schlack, 2007). Although memberships of youth in German sports clubs went up to 60%–70%, their health condition and body shape decreased in basic motor abilities and sports skills (Bös, Worth, Opper, Oberger, & Woll, 2009). Particularly, reduced aerobic endurance capacity and muscular imbalances in children entering elementary schools are more visible in the last 10 to 15 years across Germany. Bös (2003) and Bös, Worth, Opper, Oberger, and Woll (2009) reported that reduced motor development basics with regard to coordination, muscular power, and aerobic endurance capacity were down 10% to 25% on average in different school ages. The representative German Health Survey for Children and Adolescents (KIGGS) of the Robert-Koch-Institute at Berlin reported 15% of Germans aged 3 to 17 are overweight or obese (Kurth & Schaffrath Rosario, 2007). Meanwhile, representative state data of the North Rhine-Westphalia recorded 18.6% (WHO Collaborating Centre for Child and Adolescent Health Promotion, 2012). In special urban quarters of big cities, 70% or more of children of a school class have a migration background from Southern Mediterranean (Muslim) countries, often in conjunction with a low socioeconomic status (SES). The number of obese children is double that of German origin. Schools with a range of 35% to 40% overweight and obese children are no longer rare. On the other hand, results of the national KIGGS study show that up to 20% of children spend 3 hours or more per day on sedentary screen time with no fewer differences compared to different ethnic groups and low–high SES of families. The higher the amount of screen time is among children, the higher the prevalence of obese children (Lampert, Sygusch, & Schlack, 2007).

## Current Practices

Current practice of teaching PE in German schools varies between 2 PE hours (90 minutes) and 4 PE hours (180 minutes) per week. Four major concepts of PE exist for current practices: *Handlungsfähigkeit*, educational school sports, body experiences, and movement education (Naul, 2002b). Only the first two concepts include “health education through school sports” and “health promotion.” Both concepts also focus more on secondary schools than the other concepts, which receive special support in modern comprehensive schools. Health promotion in German schools has become an important item of concern for school physicians, teachers, and principals, yet less with PE teachers, parents, and surprisingly, experts in the field of PE pedagogy, although a broad definition of health as a pedagogical target is given in many PE curricula across Germany. Brettschneider and Gerlachs recently reported, “In short: PE programs generally do not focus on health in any systematic or specialized way. Consequently, empirical evidence for health-related effects of PE in Germany is almost non-existent” (Pühse et al., 2011, p. 8). This outcome reflects only on a nationwide level. Due to the regional cultural structure of the German states, it is incorrect in terms of physical conditioning, as well as for social well-being and mental health efforts in recently conducted health-enhanced intervention projects (Knoll, 2010; Knoll & Fessler, 2012; König, 2012). Instead, health promotion and empirical studies focus in Germany on three different levels/areas of school life covered with the new term

*active schools*: active sitting, active breaks, and physical activities (Regensburger Projektgruppe, 2001).

Studies of active breaks in learning and physical active learning in school subjects could positively impact the outcome of teaching and learning, although a cause–effect relationship of a single factor could not be verified. About 80% of all intervention studies focused on Grades 1 to 4 in elementary schools and only 20% on secondary school classes (Naul, Schmelt, & Hoffmann, 2012). Recently, attention has arisen in how far an active school with extended physical activities in school life and better PE teaching may affect psychosocial and executive-cognitive competencies in children and youth. However, these intervention activities significantly differ between elementary and secondary schools and between different types of secondary schools on lower (*Hauptschule*) and higher educational levels (*Gymnasium* = German grammar school). Many investigations have been done, particularly on how the range of physical activities, the level of intensity and performance, and the weekly load will affect physical self-concept (e.g., Tietjens, 2009). But these studies did not control any treatment program in the classes. Today, two studies promote daily physical activities at school and evaluate the outcome of the physical self-concept after 1 and 2 school years. There is an ambivalent outcome on health promotion and practice in PE and school sports: extended intervention studies on a daily basis with elementary pupils for up to 2 years and more documented health effects, but not continuously over 3 and 4 years. Effects do not solely depend on time, but sustainability and improvements accompany an extended qualitative offer at school and in combination with other stakeholders, if possible, as partners of a local network (Kriemler et al., 2011; Naul, 2012).

The “Dortmund Intervention Study of Daily Physical Education in North Rhine-Westphalia” (Thiele & Seyda, 2011) investigated the effects of daily PE on self-concept and on class climate of elementary pupils in Grades 1 to 3. Nonsignificant effects were found on psychosocial well-being and on class climate, but as a tendency, it was reported that girls assessed more positively the effects than boys did. More positive results were documented by Henze’s (2007) “Fit for Pisa” study and by Dreiskaemper, Schmelt, Hoffmann, and Naul (2011) for the “Healthy-Children Sound Community” study. Henze found positive correlations between regular attendance of daily PE classes and physical self-concept for girls and boys. Dreiskaemper et al. found identical positive correlations for self-concept, but also an improvement of class climate assessed by boys and girls. Most of the reported diseases/deficits in physical fitness and health development of children and youth, which are related to overweight and obesity, are not caused by a single factor, for example, physical inactivity or bad nutrition habits or lack of “walkability” of the physical environment. Also, a “one factor–one intervention component” relationship did not counteract the development of obesity in children and youth, as some review studies reported (Ferreira et al., 2006; Sallis, Prochaska, & Taylor, 2000). However, the majority of interventions for overweight and obese children still focus on these different “single component–single stakeholder” strategies, which did not reach their main target: stabilization or reduction of an overweight body mass index (BMI) profile of the intervention group in most of the German projects (Braun, 2007).

## Unique Curricular Models and Community Programs

Various curricular models for PE to promote more physical activities have existed since the mid-1990s when many active school programs were established. Since then, four models at school were promoted: (1) Brain Breaks with physical activities in regular school lessons with active learning (e.g., language and math); (2) physical activities and games in recess times; (3)

games/sports in after-school programs, mainly organized in school yards; and (4) extension of weekly PE lessons up to four and five times at school. Different models of daily physical activity programs exist, particularly for primary schools, but results about health promotion were evaluated ambivalently (Naul, Schmelt, & Hoffmann, 2012).

The European Year of Education Through Sport (EYES) in 2004 became a turning point for the promotion of PE in the European Union (EU). As a part of EYES, a commissioned study was launched to investigate the lifestyles of children and youth and the role of sports to counteract sedentary behavior. The recommendations given in the final report referred to the establishment of local networks with multisector stakeholders to promote active lifestyles because an individual setting cannot provide sufficient time and access to ensure daily PE or exercise programs for school-aged children. The recommendations of the study led to the inauguration of the first EU working group of Sports and Health at the European Commission in Brussels in 2006 (Kornbeck, 2009). This group became responsible for selecting 22 experts across the EU to elaborate *EU Physical Activity Guidelines* (European Commission, 2008). The core item of these EU guidelines is a cross-sectoral approach to linking all settings of a child for health promotion on a community level (European Commission, 2008, p. 9). Three policy areas were recommended: sport, health, and education. For the education sector, PE in the community has become essential according to the EU guidelines (European Commission, 2008):

To accomplish major health changes one hour of daily physical activity organized as play in the schoolyard or in physical education lessons is necessary... Therefore, every effort should be made to encourage schools to provide physical activities on a daily basis in all grades, inside or outside the curriculum and in cooperation with partners from the local community. (p. 23)

In line with this recommendation is a unique community-based model with a multicomponent health program for children implemented with a multistakeholder approach titled “Healthy Children in Sound Communities” (HCSC). The HCSC intervention project has implemented all essential criteria for a cross-sectoral approach and a multistakeholder network on community level according to the EU review study recommendation and the EU guidelines. The German–Dutch Interreg IV-A project Healthy Children in Healthy Communities (HCSC or GKGK in German/Dutch) addressed these two essential criteria early in 2007 with a pilot study (Hoffmann & Naul, 2009) and later in 2008 with the main study. The project is designed as a 4-year intervention study of children aged 6 to 10. It looks at four key lifestyle components: exercise, nutrition, leisure-time consumption of media, and the social and geographical movement environment (Naul, Schmelt, Dreiskaemper, Hoffmann, & L’Hoir, 2012).

The promotion of more than three weekly school exercise periods means a joint action concept coordinated and agreed between schools and sports clubs. Improved nutrition and eating habits can occur through practical lessons, including information on nutrition and modern media with its sedentariness and health-related consequences, in general and social studies classes. Community health care (public health) means local authorities prioritize physical activity for ensuring healthy growth and an active lifestyle in children and youth and facilitate more cooperation among school, youth, health, and sports departments. The improvement of the community infrastructure for movement, play, and sports makes children’s and youth’s everyday life settings (residential districts, school routes and school yards, play streets, etc.) safe, clean, and attractive and allows more modern activity-friendly space for informal sports activity—a further motivation for children and youth to exercise.

In the GKGK project, these four core program areas between the educational partners in a municipality are developed and coordinated by a “local network,” the “front office.” This integrated approach to promote an active lifestyle consequently leads to a transdisciplinary inter-

vention strategy for students within a socioecological context for individual development that must consider all important social settings (home, school, leisure and sports clubs, informal community spaces), as well as different stakeholders as partners at the community level (Naul, 2012, p. 34).

At the beginning of the 2008–2009 school year, the project was launched with the entry-level classes of six elementary schools in three German cities (Moers, Rheinberg, Velen). Today 12 cities with 39 schools participate in the German–Dutch GKGK project. The objectives of the HCSC/GKGK project for the protection and promotion of healthy lifestyles in children coincide with the aforementioned EU guidelines and recommendations of the EU review study and also with the first three proposals of the 2010 Global Forum for Physical Education Pedagogy consensus statement:

- “Focusing on content and methodologies to develop healthy active lifestyles for children and youth. This requires integration of skill development, physical fitness, health, nutrition, and planning for leisure.
- “Redesigning the physical education curriculum to promote active student-centered learning and empowering individuals to develop life skills that lead to life-long self-directed engagement in physical activity.
- “Accentuating the importance of co-operation of stakeholders in the community (teachers, administrators, parents, community members, business leaders, and others) to advocate, promote, educate, and develop individuals to incorporate physical activities into their daily life through formal and informal education.” (Edginton, Chin, Geadelman, & Ahrabi-Fard, 2011, p. 40)

### **Physical Education**

Ordinary PE in GKGK schools is allotted 3 PE hours (135 minutes) per week in Germany and 2 PE hours (90 minutes) per week in the Netherlands: a first basic PE lesson for all children in the class (basic motor skills, elementary PE, promotion of flexibility, coordination, endurance, and strength); a second basic sports lesson involving different types of games to extend these basic motor skills in games and sports; a third differentiated PE lesson for all the students, given by additional teaching staff in small groups and separate rooms according to the children’s individual development profile (BMI and motor development). Results of development will be reported to students and their parents at school-based consultations with class teachers and documented by individually printed cards detailing BMI development and the current record of motor ability development each school year with comparable reference norms regarding age and gender.

### **General and Social Studies**

The curriculum for general and social studies in North Rhine-Westphalia (NRW) includes 1 hour per week (45 minutes) for each school year on the topics body, diet, lifestyle, and health promotion, highlighting their joint contribution to healthy development. To more effectively and more directly promote the raising of healthy children, our joint health project needs to monitor the motor and physical development of each child, and we also need to learn more about those lifestyle components that either encourage or hinder that development, particularly those factors that influence their exercise habits, eating habits, and media consumption, because all three have a lasting effect on lifestyle. They also learn about the relationship of calorie intake/calorie expenditure of different kinds of physical activity, what “couch potatoes” means, and why a good relationship between the timeframe for physical activity and sitting in front of a screen is important for their lifestyle.

### **Extracurricular School Sports**

For the GKGK project, each school is cooperating with at least one sports club in the municipality. Therefore, it is possible to offer all students in the project two additional afternoon classes of movement/exercise to broaden the improvement in their health and supplement the three school PE lessons, specifically to bring their daily exercise time to 60 or 90 minutes. In the two extracurricular periods, more individual support is possible to balance the physical development of all motor abilities, particularly for overweight and obese students and classmates whose parents with a migration background seldom support active living.

### **Active School Route and Sports During Break Times**

The “walking bus” provides an active route between school and home. Walking bus means that children walk to school along safe sidewalks accompanied by individual parents or other persons. On this route, there are “stops” near to the children’s homes where the walking bus halts at prearranged times for individual children from each residential area to join it. Also, other physical activities are offered in recess time labeled “school on the move,” when games and sports equipment are offered for active breaks between lessons and for after-school programs.

### **Healthy Eating and Food Preparation**

As part of the general and social studies class, and as events in the afternoon and early evening, separate and joint cookery courses and “school fruit events” for the school children and their parents are offered. Similarly, during break periods, many GKGK schools organize and prepare a healthy breakfast for the teachers. Most of the GKGK schools in NRW take part in the EU’s school fruit project. In practical lessons, students learn the smell and taste of fresh vegetables and fruits and learn how to prepare dishes. The “nutrition pyramid” with various types of food and soft drinks is explained, along with density of foods, calories, and workloads for caloric expenditure.

This unique new curriculum model of PE supported with a multicomponent design of intervention and by different stakeholders on the community level needs, of course, new skills for PE teachers and youth sports coaches. Teachers and coaches need to know how to perform measurements and how to use motor ability and fitness tests, what the results mean, and how to supply individual support for their students according to the results. Therefore, further education and training courses are given by experts on a local and regional level, which include cross-border clinics and seminars. The homepage of the project ([www.gk-gk.eu](http://www.gk-gk.eu)) provides a special download center in the German and Dutch languages where specially designed lesson plans for health-enhanced PE and physical activity education are available.

Within the project, the term *healthy community* is understood to include the networking of those bodies and caregivers who constitute the “roundtable” in the community. As representatives of families, schools, sports clubs, and community, they and the measures they take are responsible for the children’s healthy growth within their life-worlds (settings), and they are also jointly accountable for this. The design of the GKGK project depicts a network, a “local educational landscape” (Weiß, 2011), which, in joint planning and responsibility over an intervention period lasting a number of years, implements the four program points outlined above for the promotion of active lifestyles in children and youth, bringing together key stakeholders for education and youth welfare, health, and sports in the community. The municipality is largely responsible for maintaining schools and youth services, as well as being a key partner for preventive health care, and the concerns of organized sports.

In each of the 12 German and Dutch municipalities of the HCSC project, a “roundtable for active living” was established before the project started. These local roundtables represent the different front offices for the project, which interact with a “back office.” The back office



is responsible for all front offices for funding and general steering of the project on a common regional, cross-border level. At each municipality, a “municipality moderator” is hired as a modern public health manager who manages the needs and demands of each stakeholder of the front office to implement the various parts of the intervention program in coordination with the local schools and sports clubs, as well as with and between the municipality offices responsible for education, health, social work, and physical activities. The local municipality moderator links all partners and furthers cooperation between the partners to implement the tailored intervention program. The municipality moderator works together with one scientific staff member of the Willibald Gebhardt Research Institute, which manages the back office and gives applied support by staff for the intervention program at each municipality.

Intermediate results after 2 years (Naul, Schmelt, Dreiskaemper, et al., 2012) of intervention and final results of the HCSC project after 4 years showed that up to 40% of the former overweight and obese pupils changed their mean BMI into a normal weight percentile and that almost all overweight and obese children improved their motor development level from age- and gender-related under-mean performance levels up to national-referenced mean levels, particularly in coordination and endurance strength.

## Future Visions

Each intervention project is better than none, but to achieve an evidence-based outcome, more than one component and more than one stakeholder of intervention is needed. There are also examples where “health-enhanced physical activities” have been combined with nutrition lessons and information campaigns to parents; however, a “multicomponent” intervention strategy restricted to only one setting by a single stakeholder gives a poor outcome. All livelihoods of children and youth must be covered by an intervention strategy and by the three most important lifestyle components related to overweight and obesity (nutrition intake, physical inactivity, sedentary screen time), which are linked and targeted in a comprehensive intervention program (Acker van et al., 2011; Dzewaltowski, 2008; Kriemler et al., 2011; Naul, 2012). The concept and approach of “Healthy Children in Sound Communities” is still a future vision for many German municipalities, but it works, as evaluation results show, after 4 years of commitment of partnership within HCSC networks. A further step will be regular monitoring of health-enhanced PE and physical activity by self-evaluation of pupils and teachers. Modern technological devices can provide self-reports after data entry and individual feedback for individuals who have access to an online databank, open for use by municipalities, schools, teachers, and parents and their children. The current step of the project is to give more flexibility to the local school for self-evaluation of their teachers and individual measurements of healthy development and online feedback for their students.

## Summary

According to EU-wide recommendations and guidelines for physical activity, unique curricular models of PE focus on the impact of health promotion through movement, games, and sports as a part of the school curriculum, extended by extracurricular physical activities organized in partnerships with sport clubs and promoted by local networks of different stakeholders. These new items of health development in German PE at school can be linked with a variety of targets listed in the aforementioned 2010 Global Forum for Physical Education Pedagogy

2010 consensus statement, as well as the outcomes of the 2012 Global Forum for Physical Education Pedagogy at Velen, Germany (Edginton, Chin, & Naul, 2012; Edginton, Chin, Naul, & Herring, 2013).

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