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Health-Related Fitness Models

in Physical Education

By Jennifer Houston and
Pamela Kulinna

Physical education has been an integral part of the school curriculum for more than 100 years. Although the focus during the last century has changed, the major objectives have remained relatively constant: to provide students with the knowledge, skills, abilities, behaviors, and confidence to be physically active throughout their lifetime (Sallis et al., 2012). A quality physical education program has the potential to make (at least) four unique contributions to the lives of students: (1) daily physical activity, (2) a personalized level of physical fitness, (3) development of competency in a variety of physical and sport skills, and (4) acquiring the requisite knowledge for living an active and healthy lifestyle (Darst, Pangrazi, Sariscsany, & Brusseau, 2012). Students should leave high school with the knowledge and perceived competence to participate in physical activities and sports with other adults. Unfortunately, according to Darst et al. (2012), many people will not join community clubs, gyms, or organizations because they lack the physical competence or fear embarrassment. The purpose of this article is to discuss the relationships among three health-related physical education models: (1) conceptual physical education (CPE) or fitness education (FE), (2) public health approach (PHA), and (3) the health-fitness club approach (Bycura & Darst, 2001; Darst et al., 2012). The article also presents an example of an established program using the health-fitness club model to help prospective and current teachers of physical education.



According to the Centers for Disease Control and Prevention (CDC, 2010), mapping out for teachers what students should be taught and how their acquisition of knowledge and skills should be assessed is what shapes a well-designed physical education curriculum, as in any other academic subject. A physical education curriculum then should be based on national, state, and/or local standards. This curriculum should maximize physical activity during lessons and keep students moderately to vigorously active for at least 50% of the class time. Curricula must include student assessment criteria to determine whether or not students are accumulating enough moderate-to-vigorous physical activity (MVPA) during physical education, as well as whether they are meeting lesson objectives.

School physical education programs are the ideal setting for teaching youth the benefits of leading a healthy lifestyle.

Education, in general, has undergone significant reform to meet new challenges encountered in modern society. Physical education programs are also greatly influenced by current social and professional perspectives (Darst et al., 2012). Since the turn of the century, the development and appreciation of sport skills have been the emphasis of most physical education programs. In the 1950s, President Eisenhower, concerned about the results of a test comparing the fitness levels of American and European students, established the President's Council on Physical Fitness and Sports. This started a fitness phenomenon that has continued to this day. However, with the current obesity rates in the United States, several public health organizations (e.g., World Health Organization, CDC, American Alliance for Health, Physical Education, Recreation and Dance [AAHPERD]) are calling for the use of physical education as a public health tool as a way to increase the amount of physical activity in which youth engage each day (National Association for Sport and Physical Education [NASPE], 2004a).

School physical education programs are the ideal setting for teaching youth the benefits of leading a healthy lifestyle. Physical education models such as PHA (Sallis et al., 2012) and CPE (e.g., Fitness for Life; Corbin & Lindsey, 2007) are just two examples that have been popular with physical educators who understand the importance of not only teaching sports and games, but also providing physically active classes that lead to fitness as well as teach the knowledge aspects of health and wellness in K–12 programs. These models are largely driven by public health concerns over the growing negative health trends of overweight, obesity, and diabetes in children and adults. PHA and CPE often include technology, such as pedometers or heart rate monitors, to track

physical activity behaviors as an outcome of programs. With so many curricular choices on the market and all the demands put on a teacher's time, the physical educator is hard-pressed to study all the available information.

As more physical education programs become interested in providing students with a curriculum based on developing active and healthy behaviors for life, this article will empower teachers in their curricular choices and ability to understand the differences among the three models, and will provide an example program that combines them (i.e., a health-club approach).

Conceptual Physical Education/Fitness Education Programs

CPE or FE programs merge the practice and science of the field through a lecture–laboratory approach (Corbin & Cardinal, 2008) and have been implemented during the past 50 years. The CPE classes involve the teaching of conceptual material and often have a physical activity and/or laboratory component (Corbin & Cardinal, 2008). These programs, which emphasize cognitive understanding of the subject matter, are widely used at the secondary and college levels (Corbin & Lindsey, 2007). There are also conceptually based programs used at the elementary level, such as the Physical Best elementary curriculum (NASPE, 2004b) and the Fitness for Life elementary curriculum targeting classroom teachers and other elementary staff (Corbin, LeMasurier, Lambdin, & Greiner, 2010), which can be used in concert with another physical education curricular model. Few data, however, are available to support the effectiveness of conceptually based elementary physical education programs at this time.

Dr. Charles B. Corbin developed the first college-level personal fitness text at Texas A&M in the 1970s. In 1979, he published the first high school personal text entitled *Fitness for Life*. To date, his books are the most widely adopted college and secondary school texts in the area of fitness and wellness (Arizona State University [ASU], 2012). The first edition of the *Fitness for Life* high school text was published before the development of national physical education standards. Therefore, the authors consulted with teachers and experts in the field to develop appropriate program objectives for physical education students in grades 9 through 12. In addition, the authors of the *Fitness for Life* texts then served as consultants to many different states as they developed their own physical education standards (ASU, 2012).

The first set of national physical education standards was published in 1995 (NASPE, 2004a). Although the fourth and fifth editions of the *Fitness for Life* texts were designed to meet selected national standards, it should be noted that the three previous editions of the text (1979, 1985, and 1990) would have met most of these standards before they were available (fitnessforlife.org) (C.B. Corbin, personal communication, August 12, 2012). In 2007, Dr. Corbin, along with his coauthors Guy LeMasurier and Dolly Lambdin, later introduced the middle school version of the *Fitness for Life* text. Then, in 2011, Meg Greiner, an award-winning elementary physical education teacher, was added to the team, and the elementary version, which targets all elementary classroom teachers, physical education teachers, and other school personnel for a comprehensive school-based approach to well-

ness, was also launched. The *Fitness for Life* lesson may include fitness and a skill component with activities that are developmentally appropriate and that reinforce physical activity, nutrition, and concepts from other academic areas. This program is also designed to teach students facts about fitness and physical activity and how to use self-management skills to incorporate healthy habits into their daily routine so they are less likely to be sedentary later in life. At the elementary level, these concepts can be taught in mini lessons throughout the day in the classroom. At the secondary level, when students attend a daily physical education class, students might spend two days in the classroom learning healthy behavior concepts and three days in the gymnasium doing cardiovascular and weight-training activities along with various sports and games.

A number of studies have been published showing positive student-learning outcomes from the *Fitness for Life* physical education curriculum model, including a study that showed that students who had the course in high school were more active in college three years later compared with students from the same school who had a traditional physical education program (Dale & Corbin, 2000).

The Public Health Approach

The PHA places a high priority on students developing physically active behaviors inside and outside of class. It was designed to help PK–12 students acquire knowledge and skills for lifelong participation in physical activity for optimal health benefits. For example, the *Sports, Play and Active Recreation for Kids!* (SPARK) curriculum is designed for both skill and physical activity behavior development (with a skill and fitness activity component in each lesson). SPARK is both a curriculum for children's physical education and, as an integral component, a set of prescriptions for teacher development. The potency of that combination is attested to by research studies that show an increase in physical activity for SPARK students (Locke & Lambdin, 2003). Specifically, elementary school students involved in a SPARK physical education program showed significant increases in MVPA and energy expenditure during elementary school physical education (Sallis et al., 1997). In addition, improvements in fitness, sport skills, academic achievement, and teaching quality were also documented (Sallis et al., 2012). For example, one study showed that students taught by teachers using the SPARK curriculum spent more minutes per week being physically active and gained more cardiorespiratory fitness than did those in control classes (Sallis et al., 1997). The SPARK curriculum is perhaps the most comprehensively evaluated curriculum in physical education.

A sample elementary lesson from the SPARK curriculum includes a fitness and skill activity in a 30-minute lesson. The lesson might begin with a chase-and-flee fitness activity focused on



increasing students' heart rate. The fitness activity would be followed by skill development time in which students play modified games that improve physical ability as well as provide increased movement opportunities.

Morgan, Beighle, and Pangrazi (2007) also studied the dynamic physical education (DPE) curricular model in relation to student physical activity levels using pedometers. The authors found that physical activity levels were comparable to those found in the SPARK curricular model, with students engaged in physical activity for more than 50% of the physical education class time. The authors suggested that quality physical education programs contribute to students' physical activity levels throughout the school day. Although there have been various studies on student outcomes, there are few studies addressing teacher fidelity to curricular models (Morgan et al., 2007).

If secondary physical education is to survive, it may need to change its fundamental focus, as well as its delivery (Prusak et al., 2011). In his 2012 article, Sallis and others recommended that the term "health-related physical education," which was introduced in 1991 by the same author, be replaced with "health-optimizing physical education" or HOPE. In addition, HOPE is defined as a physical education curriculum with lessons focused on health-related physical activity and fitness that keeps students active for at least 50% of class time, engages all students regardless of physical ability, and contributes to students' overall physical activity participation, thus improving their health (Sallis et al., 2012). HOPE then is another way of explaining the PHA discussed earlier.

The Health-Fitness Club Approach

Maria Corte at Mesa High School in Mesa, AZ already provides such a curriculum, and it has been coined the health club or health promotion model (Bycura & Darst, 2001; Darst et al., 2012; Prusak et al., 2011). By encompassing aspects of both CPE

and HOPE, the students who enroll in a physical education class that implements a health-fitness club approach may have the opportunity to improve their personal fitness and health while they learn the joys and benefits of leading a healthy lifestyle. The health-fitness club approach may include different lifetime activity classes offered at several levels, and students can sign up for the activity and level that meets their needs and abilities.

When Ms. Corte first started at Mesa High, she had just graduated from ASU with a degree in physical education. The physical education teacher education program at ASU had effectively trained her to teach K–12 students in sports and activities based on the multiactivity curriculum. The Mesa School District, however, wanted Ms. Corte to teach “aerobics” classes to high school students. They provided her with a gym and that was it. Ms. Corte’s first purchase was a quality stereo, and from there, she slowly started integrating fitness trends that were popular at the time into physical education.

The health-fitness club approach of physical education is designed to help students become familiar with the latest trends in lifelong physical fitness, leading to coordination, flexibility, cardiovascular endurance, muscular strength and endurance, and improved body composition. In addition, students will have the opportunity to learn about the physiological aspects of fitness as they increase their fitness levels (M. Corte, personal communication, April 11, 2012). Goals of the program should include

educating the students on many different types of activities and giving them the opportunity to set and monitor goals, as well as develop their own personal training programs.

The health-fitness club curriculum replaces games or activities that tend to provide lower levels of physical activity (e.g., softball, volleyball) with activities that are naturally more active (e.g., kickboxing, jumping rope, aerobic dance and aerobic games, and cardio team sports). Workouts such as the “Zig Zag Circuit,” “X-Factor Circuit,” “Rep-N-Run Circuit,” and “Cardio Boxing” (M. Corte, personal communication, April 11, 2012) have been specially designed to allow no downtime so that students are moving (at MVPA levels) and having fun during most of the class session. Each lesson is designed using TARGET structures (Treasure & Roberts, 1995) that have been shown to guide teaching behaviors, curricular decisions, and instructional practices that create a favorable physical education climate. The components of TARGET are task, authority, reward, grouping, evaluation, and timing (see Table 1).

Ms. Corte has been teaching at Mesa High in Arizona since 1994, and in that time, she has accumulated enough equipment (by making the Elite Fitness class into a club and fundraising) so that every student can have a body bar, a kettle bell, a medicine ball, a loop band, and a heart rate monitor or pedometer during class. Every class includes music and is based on current trends in society, whether it is Pilates, yoga, Parkour, kickboxing, the Insan-



Table 1. The Components of TARGET as Applied to the Health Club Model

Recommended Application in PE Settings	How Each is Implemented in the Health Club/Promotion Model
Task: <ul style="list-style-type: none"> • Use variety and diversity • Individuals engage in different tasks and assignments • Set own short-term, realistic goals 	Variety: A different activity each day instead of activities taught in units; students choose where and with whom to start each activity. Goals: Students are self-directed as to which outcome they wish to pursue and goals are personal depending on the result of fitness testing.
Authority: <ul style="list-style-type: none"> • Locus of responsibility shifts from teacher to student • Self-evaluation is emphasized 	Instructional cards allow for students to be self-directed; choices are made for reasons intrinsic to the activity itself; students assume responsibility for completing each activity indicated on the instructional cards.
Rewards: <ul style="list-style-type: none"> • Intrinsic value of each activity is emphasized • Individual interests and choice are emphasized 	Students learn to appreciate the joy and benefits of exercise and leading a healthy lifestyle.
Grouping: <ul style="list-style-type: none"> • Working together competitively, cooperatively, or individually 	Students push one another through each task, circuit, or station; the teacher has the opportunity to walk around and encourage and teach proper form instead of playing “task master.”
Evaluation: <ul style="list-style-type: none"> • Evaluations are private, criterion-based, and focused on process rather than ability 	Fitnessgram, body mass index, hip-to-waist ratio, and physical activity logs
Timing: <ul style="list-style-type: none"> • Pace of instruction: Is the allotted time appropriate for the goals and objectives of each activity? • Interaction between time and task 	Each activity, circuit, or station is self-paced; students compete with themselves; exercise is done for time, not necessarily for a certain number of repetitions.

Source: Treasure and Roberts (1995).

ity workout, P90X, step aerobics, circuit/interval training, boot camp, the stability ball, HI²T (high-intensity training), or a combination of many of these innovative workouts. Although all the aforementioned activities have something different to offer, Ms. Corte has worked very hard to make fitness fun and manageable for all of her students. No matter what their fitness level, all students participate together and everyone finishes together.

One of the most significant aspects of the class is the fact that the students motivate one another to perform at their best. Although Ms. Corte is constantly walking around supervising, assessing, and connecting with her students, she rarely has to ask any student to “get moving.” Students are highly motivated and want to participate, get fit, and feel healthy. This attitude comes from the atmosphere created by Ms. Corte, other teachers at Mesa High, and the students themselves. In addition, Ms. Corte keeps an open line of communication with the parents of her students, as she believes that parents can have a significant level of influence on a student’s level of physical activity.

To fund the program, Ms. Corte took it upon herself to make one of her classes an actual club on campus. Once you become a club (in the Mesa School District), you can fund-raise. She used the club status to sell “candy grams,” local coupon books, and T-shirts, for example. By fundraising, Ms. Corte has been able to raise up to \$2,000 per year for her program.

There are three fitness classes taught at Mesa High School, and all have upwards of 60 students signed up each semester. The first two classes are called “Complete Fitness/Aerobics,” and the third is “Advanced Fitness/Elite.” To participate in the complete fitness class, students need to register for the class and hope they get in. In past years, there has been a waiting list. To be part of the elite class, students must try out and be able to complete 60 pacer laps, 80 sit-ups, and 15 push-ups.

Assessments

Students in the health-fitness club approach, begin the semester with FITNESSGRAM® fitness testing. Fitnessgram is a

Table 2. Visual Representation of All Three Health-Related Curricular Models

Conceptual Physical Education/ Fitness Education	Public Health Approach	Health-Fitness Club Approach
"Fitness for Life"	"SPARK," "DPE"	Bycura & Darst, 2001; Darst et al., 2012
Involves the teaching of conceptual material	Skill and physical-activity behavior development	Elements of both PHA and CPE
Physical activity and/or laboratory component	Skill and fitness component in each lesson	Focuses on students' personal fitness level
Emphasizes cognitive understanding of the subject matter	Increased physical activity during physical education	Emphasizes what is current in society
Elementary curriculum targets elementary classroom teachers to increase physical activity throughout the day	Set of prescriptions for teacher development	Replaces games/activities that provide lower levels of physical activity with activities that are naturally more active

complete battery of health-related fitness items that are scored using criterion-referenced standards that are age- and gender-specific and have been established based on how fit children need to be for good health (Meredith & Welk, 2007). For muscular strength and endurance, the sit-up and push-up test is used, and for cardiovascular endurance, the pacer test is used. The students are tested every month, or five times during the semester, to measure and document their progress. Pre- and post-test assessments are also given to measure and document learning in the cognitive domain. An introductory exam is given to assess students' knowledge before delving into any lectures on physiology and nutrition. Periodic quizzes are also given to ensure all students are keeping up with the material (from the Fitness for Life curriculum). At the end of the semester, a final exam is given to measure students' cognitive learning improvements.

Assessments used with health-related fitness curricula often include physical activity patterns and components of health-related fitness. The Fitness for Life program was created to be integrated with Fitnessgram/Activitygram® and Physical Best so students can become proficient at self-assessment. The SPARK cur-

ricular model assesses students using something called Personal Best Day designed for students to track their fitness progress over time. Both programs involve individual goal setting, fitness tests consisting of cardiovascular, muscular endurance and strength, and endurance components, as well as self-assessments. Both the Fitness for Life program and SPARK curriculum also incorporate cognitive assessments that ask students to demonstrate what they have learned and how their behaviors have changed over the course of the program.

Conclusion

A well-rounded physical education class can potentially provide students of all abilities and interests with a foundation of movement experiences designed to help them lead active and healthy lifestyles well after graduation from high school. In addition, effective physical education can provide children with the tools for participating in safe and healthy activities throughout their lives. In spite of physical education having been an integral part of the school curriculum for more than 100 years, obesity rates in the United States continue to rise. Physical education curricula such as CPE, PHA, and the health-fitness club approach offer physical education teachers creative ways to instill the benefits of a healthy lifestyle in their students. Although all three approaches share similar objectives, such as empowering students with the facts about fitness, the benefits of healthy behaviors, and the enjoyment of physical activity, each has a unique set of characteristics (see Table 2).

Though the roots of physical education actually lie in health promotion, the field has been sidetracked from this mission for several decades (Prusak et al., 2011). The curricular models discussed in this article focus on developing healthy physical activity behaviors (PHA), the understanding of conceptual material along with participation on fitness activities (CPE), and the students'

Effective physical education can provide children with the tools for participating in safe and healthy activities throughout their lives.

personal fitness levels (health-fitness club approach). By informing physical educators of the similarities and differences among these three models, teachers can set goals for their classes and choose activity experiences to meet those goals, thereby creating a physical education curriculum that is taught using an instructional process reflecting the values of these models (Siedentop & van der Mars, 2012).

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To learn more about this topic, refer to these American Alliance for Health, Physical Education, Recreation, and Dance resources at <http://www.aahperd.org/shop>: *Physical Best Activity Guide: Elementary Level, Third Edition*; *Physical Best Activity Guide: Secondary Level, Third Edition*; *Physical Education for Lifelong Fitness: The Physical Best Teacher's Guide, Third Edition*.



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