Ideas to Enhance your K-12 Physical Education Curriculum

Brad Strand, Ph.D  
North Dakota State University

Nathan Knudsen  
West Fargo, North Dakota

Matt Bowar  
West Fargo, North Dakota

Rollie Swedberg  
West Fargo, North Dakota

Abstract
The article explores some of the issues facing K-12 physical education. It opens with a brief discussion of new trends in physical education related to physical activity and academic achievement and transitions into a discussion of student input on one’s choice of curriculum offerings. Next, the article explores evaluation and standards and concludes with a brief discussion of what physical education might look like in the future.

Schools across the nation are implementing new research based physical education curricula that are redefining what students learn in physical education. The benefits of physical education have transformed classes and districts throughout the United States. An example can be found in the Naperville School District 203 of Chicago, Illinois. Naperville’s physical education classes focus on getting students moving and active. According to Ratey and Hagerman, authors of the book *Spark* (2008), “kids are spending an average of 5.5 hours a day in front of a screen like televisions and computers” (p. 19). This statistic causes concern among physical educators as they must adapt and change physical education classes in order to compete with screens and hand held devices for the attention of youth. The purpose of the ‘new’ physical education is to get students moving and active in activities that are moderate to vigorous in effort. Recent research suggests that moderate to vigorous physical activity can improve learning in other content areas and student academic scores (Coe, Pivarnik, Womack, Reeves, & Malina, 2006; Fox, Barr-Anderson, Neumark-Sztrainer, & Wall, 2010). Ratey and Hagerman continued, “exercise provides an unparalleled stimulus, creating an environment in which the brain is ready, willing, and able to learn” (p.
In fact, Ratey and Hagerman suggest that exercise and aerobic activities serve as the catalysts or “miracle-grow” for the brain development. Going one step further, Medina (2008) stated that “physical activity is cognitive candy” (p. 22).

Some school districts are looking at cutting physical education programs in order to meet guidelines set out by the No Child Left Behind Act (Robert Wood Johnson Foundation, 2003). School districts are seeing students’ math, reading, and science scores drop, causing districts to look at increasing learning time in core subject classes and eliminating physical education. However, Naperville School District 203 implemented a zero hour physical education class that starts before the school day that is specifically designed to boost students’ scores. Students get engaged in moderate to vigorous activities that raises their heart rate. The positive results Naperville experienced have triggered other states and school districts to lengthen their physical education classes as well as add physical education classes to their curriculum versus shortening or dropping physical education classes (Ratey & Hagerman, 2008). Students have developed healthy skills and knowledge to become successful in and out of the classroom. Ratey and Hagerman said that “physical activity has positive impacts on mood, attention, self-esteem, and social skills”, (p. 24) which makes daily physical education in our schools an even greater priority.

Other examples of new and unique physical education programs are found in Miami, FL where schools have developed wellness centers within their physical education programs (Greenberg & Stokes, 2007) and in Sierra Vista Middle School, Canyon Country, CA. The Sierra Vista program has been recognized by the President’s Council on Physical Fitness/Sports as a Demonstration Center for the Nation by focusing on individual student fitness rather than traditional team sports (Motion Fitness, 2013). The Sierra Vista Middle School physical education program has demonstrated improved fitness scores and the school’s Academic Performance Index (API) scores (API) have increased every year since the physical education department changed their philosophy from the “Old PE” to the “New PE”. The 2003-2004 API was 746 while the 2011-2011 API increased almost 100 points to 840 (Sierra Vista Junior High School, n.d.).

Today’s new physical education is focused around two objectives. The first objective is to promote lifelong physical activity and the second is to improve current physical education classes. First, schools need to add physical education classes that promote and teach lifelong skills that students use outside the classroom (gymnasium). Teachers should educate students about health and fitness concepts and the benefits of regular physical activity. Physical educators should also introduce students to equipment and trends that are commonly found in health clubs such as treadmills, elliptical machines, indoor bikes, rowing machines, and other various aerobic exercises and routines.

Second, teachers should improve physical education classes by getting more students active and engaged in physical activity during their class period. Traditional sports in physical education may not be the best way for students to be active. Instead, sports can be modified into smaller games that include more students, allowing them to become more active for longer periods of time. One way to monitor activity time is to have students wear heart rate monitors that indicate if students are below, in, or above their target heart zone.

Naperville School District 203 attributes their academic achievement to their physical education classes. Naperville’s academic scores are in the top ten out of all Illinois public schools. More notably,
Naperville School District 203 scored first in science and sixth in math on the Trends in International Mathematics and Science Study (TIMSS), a test designed to compare student’s knowledge from different countries (Ratey & Hagerman, 2008). The test scores might be attributed to the zero hour physical education class that is taught before the other regular school classes begin.

Research suggests that there is a positive relationship between participation in physical education and academic achievement (Centers for Disease Control and Prevention, 2010). The new physical education classes are impacting not only the overall health of students but are also increasing academic performance. The findings provide strong support as to why physical education needs to be taught and required. Credits for physical education classes need to increase throughout our nation’s school districts. The goal is for more physical education classes and more time in physical education with an emphasis on getting students moving and learning skills they can use for the rest of their life. A great way to get students moving is to obtain student input. The next section of this paper looks at the how student feedback can improve physical education classes.

**Student Input on Curriculum**

Students who participate in the same games and activities for several weeks may lose interest and enthusiasm in those activities resulting in boredom. Boredom occurs when external stimuli are excessively scarce or excessively monotonous (Chen, 1990). Chen suggested that students feel bored when “they are engaged in activities that are repetitive, habitual and unchallenging” (p. 2). Chen described another type of boredom that includes students being forced to interact with a task in which they have no interest. Boredom can be caused when the task learned requires excessive effort. It can also come from expectations students might have about an activity when the quality of instruction is poor. This negative perception can be carried to future classes when students choose not to participate to avoid boredom. Chen’s data indicated that the more difficult an activity was perceived, the less control students felt during the learning process, the more likely they would resistance the content, thus causing boredom. Figley (1985) identified six determinants that affect students’ positive or negative attitudes toward physical education. The six determinants are: teacher, curriculum, atmosphere, and student perceptions of self, other, and peer behavior. The new physical education should include student input, variety, and a challenging age appropriate curriculums for students to stay interested.

Physical educators need to take students’ interests and concerns about physical education into account when developing a strong physical education curriculum in which students will be active as well as educated about the benefits of physical activity. Student attitudes towards class and activities are important as curriculums are developed. Students may be turned off to physical education if teachers do not adapt to newer approaches and teaching styles. Barney and Deutsch’s (2009) research on the effects of middle school physical education curriculum on student attitudes said “If the activity is fun, revealed that there is a better chance of keeping a student’s interest in the activity” (p.15). The more interested that students are, the more engaged they likely will become. When teachers are aware of student’s views towards certain curriculum choices, modifications can be made to positively change games and activities to promote higher participation and interest. Barney and Deutsch (2009) also suggested that one aspect that can affect student’s attitudes is by giving them a voice or getting their input on the curriculum. When students have choices, they are more
likely to invest and find enjoyment in physical education and participating. Students enjoy giving their input. The input has impacted teachers to include new activities such as snow shoeing, rock climbing, kayaking, and hiking and camping trips.

**Implementing New Curriculum Models**

After students have expressed their input, physical educators can incorporate a curriculum model that best fits student interests. Sport Education, Social Responsibility, Teaching Games for Understanding, and Fitness Education are four curriculum models that can help school districts and physical educators improve their classes. The research based models are redefining what and how students learn.

Sports education provides students with an authentic and complete sport experience. This is accomplished by allowing students the opportunity to experience all of the roles in a sport unit which include coaching, scorekeeping, statistics, managing equipment, and refereeing. Students enjoy this approach because there are more opportunities to be leaders and work cooperatively in a team setting. Students may also have an increased sense of belonging and trust with their peers, which are two of the six determinants (Figley, 1985).

The teaching games for understanding model provides students with the opportunity of playing games first, helping increase the amount of activity students achieve. The teaching for understanding model also helps students accept units teachers are teaching. The original model has six parts, 1) playing the sport but a modified game version, 2) understanding the rules that shape the game, 3) learning the tactics used to play the game, 4) making appropriate decisions on how the game is played, 5) practicing the skills needed to play the game better, and 6) playing the game again after students have understood the value of developing the skills necessary to play the game. This model is similar to the traditional sports model with the biggest difference being that games are played before skills are taught. Many teachers practice skills and progressively play more of the game throughout a unit. Teachers can implement this model by having students start with modified game play and then continue through the rest of the steps.

Fitness education maintains a focus on the process of learning about physical activity rather than the production of physical fitness. Fitness education educates students about developing lifetime physical activity habits, as opposed to getting kids fit by doing fitness to kids. Fitness education is not fitness boot camp (McConnell, 2010). This model helps students develop the knowledge and skills necessary to maintain a lifetime of physical activity and fitness. Students have the opportunity to participate in both classroom activities and gymnasium activities that reinforce lifetime fitness principles. Less time within the class period is based around sports while a greater portion of the class period is focused on the development of health related fitness components (cardiovascular, muscle strength, muscle endurance, muscle flexibility, and body composition). Fitness education can be implemented in two different ways.

The first way fitness education can be added to a current physical education class is to spend 15 minutes every day on fitness education and participation from the fitness related components. This option works best for teachers who are unwilling to make a complete change to their current curriculum.

The second way fitness education can be implemented is by dividing a class period into thirds, two-thirds fitness based and one-third traditional sports based. Students might also have health every other day and learn about the components of fitness. On opposite
days students would have physical education. Students will learn fitness concepts in the classroom and then apply fitness concepts during physical education. Students spend one-third of the class period learning and performing cardio fitness activities, one-third of the class period learning and performing strength training, and the final third learning and playing a sport activity.

The social responsibility model teaches students to be socially responsible citizens for the good of their community and the betterment of society. This is a very important model that can be included into any physical education curriculum. This model can easily be integrated and maintained in all K-12 physical education classes. The social responsibility model should not be the sole model but rather taught in conjunction with any of the other curriculum models.

**Evaluation and Standards**

Physical education must align with state and national standards in order to provide quality instruction and implementation. When designing curricula, educators evaluate what needs to be taught and assessed, as well as what objectives the students should be able to perform. Establishing and implementing high quality physical education programs can provide students with the appropriate knowledge, skills, behaviors, and confidence to be physically active for life (Centers for Disease Control and Prevention, 2010). Standards and benchmarks allow physical educators to lay a solid foundation for a quality physical education environment.

When preparing for curriculum needs and modifications, a good tool to help physical educators through the process is the Physical Education Curriculum Analyses Tool (PECAT) (Centers for Disease Control and Prevention 2010). PECAT provides a vision of what should be included in high-quality physical education curricula and is effective in developing physically educated individuals. This tool helps identify where revisions are needed in the current curriculum, and provides tools for implementation of new material. The process of creating a new curriculum can be tedious, and input and planning from administrators and physical educators within the district is highly recommended.

By having a quality physical education curriculum in place, educators are more prepared when teaching skills and providing instruction. Physical education curriculum should be based on state and national physical education standards, which provide benchmarks and standards so students know what is expected of them (Centers for Disease Control and Prevention, 2010). Highly qualified programs should provide adequate instructional time, be taught by highly qualified physical education specialists, have reasonable class sizes, and provide proper equipment and facilities.

Content and student assessments are measured regularly by physical educators to provide feedback and instruction. Alternative, authentic, and performance assessments are some of the ways to better understand what students are receiving from physical education. These assessments give physical educators the information needed to address concerns by parents, teachers, or administrators. Educators can see if students are improving skill development and knowledge and use this information to plan future activities. Many schools also use fitness tests as a way to measure a students’ progress from day one to the end of semesters. Evaluation in physical education is imperative to gain a better understanding of what students are learning and able to do.

Aligning well designed lessons with state and national standards allows educators to evaluate student performance and provide better instructional strategies. This ensures that all students have many opportunities for...
regular physical activity. Educators must also create a positive environment for student participation. As mentioned earlier, the objective of the new physical education is to promote lifelong physical activity and improve physical education classes. By aligning curriculums with standards and benchmarks and evaluating students regularly, physical educators are creating high quality and respected programs.

Physical Education in the Future

School districts across the nation have redefined physical education using research based curriculums. School districts will be adding physical education programs and active learning into the classroom to meet guidelines required by the federal government. Ratey stated that “exercise provides unparalleled stimulus, creating an environment in which the brain is ready, willing, and able to learn” (p. 18). With the catalyst or “miracle-grow” being moderate to vigorous exercise for the brain, school districts will see students’ math, reading, and science scores improve. Improving students’ scores and health involves four key elements: increased student input on curriculum, implementation of new curriculum models, standards, and routine evaluation of physical education programs.

Students’ attitudes towards physical education will improve because the six determinants are taken into account when physical education curriculums are developed. Students will be more interested and engaged in physical education if their input, concerns, and attitudes are taken into consideration when developing physical education curriculums. Teachers will be more aware of student’s views toward certain curriculums and more willing to make modification to activities to positively change and promote higher participation and interests.

Sport Education, Social Responsibility, Teaching Games for Understanding, and Fitness Education are curriculum models that teachers can follow to enhance student learning. The models can be used so students have an increased sense of belonging and trust with their peers, be vested in units being taught, and be socially responsible citizens within their community. The models can also increase student activity time, and be focused on the process of learning about physical education.

Standard based curricula create a solid foundation for teachers to provide students with feedback so teachers can improve their instruction. Students are graded using performance assessments that measure students’ progress from the beginning to the end of a semester. Students who reach benchmarks and standards will show that they have a full understanding of the curriculum being taught.

Physical education programs will be evaluated on a regular basis. This is accomplished by the administration and physical educators within the district working together to ensure that curriculums are current, aligned with state and national standards, have the tools needed to educate and implement new materials, and are student based. Physical education programs that are evaluated prepare teachers to teach a quality physical education curriculum and ensure that students are eager to learn and participate.

With the four key elements listed above in place, the future of physical education is bright. Schools across the nation will provide creditable research based physical education programs that will affect students’ health and well-being beyond the walls of the gymnasium and school buildings.
References


