

Integrating the NETS•S into Physical Education

A long-time physical educator, author, and entrepreneur helps address technology and PE standards in easy-to-integrate activities, presented in the table below.

By Bonnie Mohnsen

Physical educators often see their students only once a week for 40 minutes and/or have 60 or more students in a class. Thus, it is a tremendous challenge for them to address all of the information and skills contained in both the National Educational Technology Standards for Students (NETS•S) and the National Standards for Physical Education (NSPE). My goal in the table below is to provide several examples and ideas to help you simultaneously address both sets of standards. You can find books, software, and other tools to help you with this task at my Web site (Bonnie's Fitware Inc.) and others.

NSPE	1 Competency in motor skills and movement patterns needed to perform a variety of physical activities	2 Understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities	3 Regular participation in physical activity
NETS•S			
1 Basic operations and concepts	Students use computers to play video files illustrating motor skill performance.	Students use instructional software (e.g., Biomechanics Made Easy) to help them learn movement concepts.	Students use pedometers to measure how many steps they take during class, during the school day, or outside of school.
2 Social, ethical, and human issues	Students use camcorders to record each other's motor skill performance. Through this experience, they gain an appreciation for the use of camcorders as a means for receiving personal feedback.	Students learn the copyright issues related to research on the Internet and then use it to investigate the practice strategies of professional athletes. Using this information and their knowledge of motor learning, students create practice plans for a specific skill or game.	Students use e-mail to exchange activity logs and discussions of local activities and habits with students from another country.
3 Technology productivity tools	Students work in small groups to create digital images illustrating a tumbling skill. These images can be grouped in an electronic format (e.g., videotape, electronic presentation).	Students use software (e.g., SimAthlete) to develop a practice plan for a sample athlete. (Find a complete lesson plan in the supplement to this article. http://www.iste.org/LL)	Students use pedometers to determine how many steps they take during class. Then, using a spreadsheet, they graph their steps for a period of time for analysis.
4 Technology communications tools	Before a lesson on a skill, students are instructed to conduct an Internet search on the correct technique for that skill. Then, they summarize their findings and e-mail their summary to the teacher.	Students use e-mail to communicate with students or PE teachers in other schools or professionals (e.g., athletes, personal trainers) about the way physical education is handled in other settings.	Students submit activity logs to an Internet-based database (e.g., PE Central's Log It).
5 Technology research tools	Students post summary results of motor skill performances on a class Web site.	Students find pictures on the Internet that illustrate various movement concepts. They print the pictures and label them according to the qualities of movement they represent. Finally, they post the photos and descriptions in the gym for all students to use.	Students wear heart monitors over several days while participating in a variety of activities. The heart monitor data is transferred to a computer and charted by the students so that they can compare the physical activity demands of the various activities.
6 Technology problem-solving and decision-making tools	Students practice putting using a golf simulator to determine if they are aligning and swinging the club correctly.	Students use Inspiration to create a mind map that depicts the relationship between soccer and team handball.	Students research and analyze opportunities for physical activity available to them outside of school. They use a database to summarize their findings and to select the best options for their own participation in physical activity.

Resources

Bonnie's Fitware: <http://www.pesoftware.com>
 Mitchell, M., McKethan, R., & Mohnsen, B. S. (2004). *Integrating technology and physical education*. Cerritos, CA : Bonnie's Fitware Inc.
 Mohnsen, B. S. (2004). *Using technology in physical education* (4th ed.). Cerritos, CA: Bonnie's Fitware Inc.
 National Association for Sport and Physical Education: <http://www.aahperd.org/naspe/template.cfm>

PE Central's Log It: <http://www.peclogit.org/logit.asp>
 Personal Fitness Trainer WebQuest: <http://www.itdc.sbccss.k12.ca.us/curriculum/personaltrainer.html>
 SimAthlete: <http://www.pesoftware.com/Products/software/simathl.html>



Dr. Bonnie Mohnsen is the CEO and chief programmer/designer for Bonnie's Fitware Inc. She was a physical education teacher for 15 years and a physical education administrator for 15 years. In 1997, Bonnie was named the National Physical Education Administrator of the Year. She is the author of several books and more than 100 articles. She has also provided more than 250 presentations.

4

Achievement and maintenance of a health-enhancing level of physical fitness

Students use heart rate monitors during cardiorespiratory endurance activity.

Students use heart rate monitors on a regular basis to ensure continuous feedback about their heart rate during physical activity.

Students use Health Related Fitness Tutorial/Portfolio to investigate the difference between safe and dangerous stretches. Then, they create a database that lists all of the dangerous exercise along with a safe alternative.

Middle or high school students create a Web page for elementary students that depicts the components of health-related fitness.

Students use spreadsheets to report fitness information from their exercise logs. They use the graphing features to track patterns in their physical activity and then share their findings with their family and friends.

Students participate in the Personal Fitness Trainer WebQuest. They are given a fictional character for whom they must find an appropriate goal weight, develop a weekly exercise program, develop a menu for one week, provide helpful survival tips, and provide specific recommendations.

5

Responsible personal and social behavior that respects self and others in physical activity settings

Students use e-mail to interview older students about the importance of recognizing and respecting differences among people during physical activity.

Students, working in groups, investigate the pros and cons of virtual-reality based sports (e.g., Dance Dance Revolution, EyeToy-based games).

Students use a digital camera to record responsible and irresponsible behaviors for use in a character education or personal/social responsibility bulletin board.

Students use a chat room (set up by the teacher) to discuss issues of personal responsibility with high school, college, or professional athletes. They address such questions as "Why is attention to positive and negative behaviors in athletic situations important?" or "Why do you think negative behaviors occur at athletic events?"

Students find Web sites that provide safety information for potentially risky physical activities (e.g., inline skating, snowboarding, skateboarding, surfing, archery). They then assess the sites using a rubric that includes such criteria as whether the site includes a description of the activity, safety tips, and links to similar sites; whether it is easy to navigate; and whether the content is relevant to their course content.

Students respond to an online survey about personal and social responsibility in class, on the playground, and out of school. The teacher uses the results to discuss various behaviors in class.

6

Value of physical activity for health, enjoyment, challenge, self-expression, and social interaction

Students use word processors to respond to prompts (e.g., "I enjoy playing games with my friends because . . ." "Participating in physical activity helps me make new friends by . . .")

Students learn the ethical issues related to using the Internet. Then, students research the history of basketball using the Internet and create an electronic presentation on the topic.

After a dance lesson, students write an essay describing their feelings about participating in the dances. Then, students create a database to compare and contrast the different feelings expressed by classmates.

Students use e-mail to conduct interviews, with students at other schools about their physical education programs and physical activity preferences. The students then summarize the data and compare/contrast their own preferences with the data collected from the interviews.

Students find images and recordings on the Internet that illustrate the beauty of the human body in motion. They identify the aesthetic features, discuss what the items represent (e.g., a clip from the movie *Chariots of Fire* shows the pride athletes take in competing in the Olympics; paintings by Degas show the care ballerinas take when preparing for a dance recital), and discuss their personal responses to the pieces.

Students respond to an online survey, which includes prompts related to competition, fair play, sportsmanship, and activity choices. Students collect and analyze the responses using a spreadsheet. They then develop suggestions to address any identified problems.

Topic	Soccer/motor learning concepts
Cross-Reference	<p>NETS-S 3: Technology productivity tools. NETS-S 5: Technology research tools, Performance Indicator 4: Use content-specific tools, software, and simulations to support learning and research.</p>
Lesson Objectives	<ol style="list-style-type: none"> 1. Apply the concepts and principles of giving specific feedback in order to facilitate skill improvement.
Lesson Summary	<p>This is the first day of a new unit on soccer. Throughout the unit, students will practice the various soccer skills while receiving feedback from a partner. Today’s lesson focuses on teaching students the correct method for providing feedback. This particular lesson takes place in the computer lab.</p>
PE Equipment Requirements	<ul style="list-style-type: none"> •None.
Technology Requirements	<ul style="list-style-type: none"> •Computer Lab: One computer for every two-three students for use during physical education. •Software: <i>SimAthlete</i>.
Other	<ul style="list-style-type: none"> •Task sheet (one per student) with step-by-step directions for software use (available with the software).

Instructor's Responsibilities & Roles

Students' Responsibilities & Roles

Pre-Instructional Phase

- | Instructor's Responsibilities & Roles | Students' Responsibilities & Roles |
|---|--|
| <ol style="list-style-type: none">1. Loads <i>SimAthlete</i> on each computer.2. Assigns students to computers.3. Creates and distributes task sheets with directions for software use. | <ol style="list-style-type: none">1. None.2. None.3. None. |

Instructional Phase

- | | |
|---|--|
| <ol style="list-style-type: none">1. Discusses key concepts related to feedback:<ul style="list-style-type: none">•Feedback related to performance and results is critical for learning.•Saying “good” or “bad” is not as effective as having more precise feedback.•Feedback should be based on the most critical error made during a practice attempt.•There should be a slight delay between executing the performance and receiving feedback.•Extraneous feedback interferes with learning.•Feedback needs to be reduced as performance improves.2. Demonstrates the application of feedback concepts to someone learning the instep kick for soccer.3. Describes the software activity. | <ol style="list-style-type: none">1. Listen to discussion.2. Watch demonstration.3. Listen to description. |
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Application(S)	<ol style="list-style-type: none"> 1. Supervises and provides feedback to students as they work through the <i>SimAthlete</i> tutorial. 2. Supervises and provides feedback to students as they work through the <i>SimAthlete</i> simulation. 	<ol style="list-style-type: none"> 1. Work through <i>SimAthlete</i> tutorial section. 2. Create a practice plan in the <i>SimAthlete</i> simulation section focusing on feedback concepts and any other concepts that have been taught.
Lesson Closure	<ol style="list-style-type: none"> 1. Asks students to identify the concepts/principles related to giving feedback. 	<ol style="list-style-type: none"> 1. Respond to request for concept/principle identification.
Lesson Reflection and Extensions	<ol style="list-style-type: none"> 1. This same lesson can be repeated for any motor learning concept/principle. 2. Other options for executing this lesson include: <ul style="list-style-type: none"> • The computer tutorial and simulation are done as a whole class activity using one computer and a projection system. • The computer tutorial and/or simulation is performed for homework. • The computer tutorial and/or simulation is performed as a station. 	