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The PE Central Challenge: A Program to Encourage Voluntary Physical Activity

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Students could not get enough of the Challenge. Fantastic motivational activity. Students were eager to participate." *Kathy James, North Elementary School*

Exercise is a bad word for many Americans. It reminds them of unpleasant experiences that were all too often humiliating and devoid of personal meaning and value. Unfortunately many of these unpleasant exercise experiences are associated with their memories of physical education classes. Recent estimates suggest that 61.5% of children aged 9-13 do not participate in any organized physical activity after school (CDCP, 2003) and that fewer than 3% are engaging in vigorous physical activity that promotes cardiorespiratory fitness (Pate, 2002). Clearly this lack of regular exercise is one of the reasons 28.9% of adolescents were classified as overweight or at risk of being overweight (CDCP, 2004). Contemporary physical educators are working hard to reverse this trend so that exercise is no longer a bad word, but rather one that connotes enjoyment, personal satisfaction and improvement.

One of the many ongoing questions faced by teachers of any subject is how to devise learning experiences that are both enjoyable and personally satisfying for their students. This is especially difficult for those elementary school teachers, typically art, music and physical education, who only teach their students once or twice a week. Physical educators are continually searching for programs that encourage youngsters to be voluntarily physically active after school and on weekends.

In the past 30 years or so, most of the motivational programs designed and implemented for youngsters in the United States have focused on physical fitness (AAHPERD, Physical Best, 19--; Corbin, Lovejoy, Steingard & Emerson, 1990; PCPFS, 1987). Clearly physical fitness is an important aspect of any physical education program (NASPE, 1995; 2004). Increasingly,

however, experts are recognizing the importance of motor skill competence and self-efficacy, as factors explaining why individuals choose to participate in voluntary physical activity (Malina, 2001; Okely, Booth & Chey, 2004; Sallis, Prochaska & Taylor, 2000). The National Association for Sport and Physical Education (NASPE) defines a physically educated person as having “competency in motor skills and movement patterns” (NASPE, 2004, p. 11). NASPE further suggest that a physically educated person “demonstrates competency in motor skills and movement patterns needed to perform a variety of activities“ (NASPE, 2004, p.11). The National Centers for Chronic Disease Prevention and Health Promotion also recommends that the emphasis in elementary schools be on “developing basic motor skills that allow participation in a variety of activities” (NCCDPHP, 1997, p. 20).

Despite these recommendations, few programs currently exist that are designed to assist teachers to motivate youngsters to practice motor skills. Probably the two most widely known programs focus on the motor skills of jumping rope (*Jump Rope for Heart*) and basketball shooting (*Hoops for Heart*) (American Heart Association). Given the widespread popularity of these programs, the authors were among a group of physical educators who set out to develop a program designed to encourage 4th and 5th grade children to practice a variety of motor skills as suggested in *Moving into the future: National standards for physical education* (2004). The program was named the PE Central Challenge because of the authors’ affiliation with the popular Web site for K-12 teachers (www.pecentral.org).

PE Central is an award winning Web site designed specifically to provide physical educators with a plethora of developmentally appropriate lesson ideas, assessments and resources. It also provides links to other physical education Web sites and up-to-date information about conferences and the latest publications. Because of its popularity it seemed reasonable to

develop and offer a program designed to motivate youngsters to practice some of the motor skills suggested in the National Standards for Physical Education (NASPE, 2004).

The Challenge, when implemented as recommended, incorporates many of the principles recommended by Weiss (2000), for the purpose of encouraging youngsters to master a series of fundamental motor skills that are also used in sport contexts, albeit in much different settings. The 4th and 5th graders are provided with “optimal challenges” designed to promote “learning effort, and self-improvement, (with) mistakes viewed as part of the learning process; success is self-referenced” (Weiss, 2000, p. 5). The Challenge was not intended to be a one time (summative) test, but rather an ongoing (formative) assessment that youngsters could practice over a period of several months at recess, before and after school and at home. We also designed this voluntary program to be both enjoyable and motivating to youngsters with the goal of contributing to “enhanced self worth” and a “fondness for doing physical activity” (Martens, 1996, p. 305).

The Challenge began in 1999. The remainder of this article describes the six motor skill challenges that comprise the PE Central Challenge, a brief description of the “rules” for administering the Challenge, the reward system for earning pins, and some of the demographic data for participants along with the teachers’ evaluations of the entire program. The article concludes with a description of our goals for future years.

The PE Central Challenge

Development

In the fall of 1998 several doctoral students with physical education teaching experience, and two professors associated with the Health and Physical Education program at Virginia Tech,

brainstormed possible motor tasks appropriate for fourth and fifth grade children. Five criteria for the motor tasks (challenges) were agreed upon. They were:

- That most of the challenges be represented in the National Standards (NASPE, 1995);
- The motor skills could be improved with reasonable amounts of quality practice, i.e. success was not thought to be based primarily on hereditary factors or physical fitness;
- Each of the challenges had to use materials and equipment typically available in elementary schools, or that was easy to acquire at minimal expense.
- The criteria for each challenge needed to be easily understood by the children, i.e. they were not based on a teacher's subjective judgment.
- Some of the challenges chosen for the PE Central Challenge had to be done with a partner or in triads to encourage cooperation and working together to achieve a common goal.

After several meetings to discuss potential tasks, ten were piloted with 4th and 5th grade classes at a nearby elementary school. The veteran physical educator at the school also provided valuable suggestions. During the pilot phase we judged a task to be reasonable for youngsters to achieve if about 50% of the children were able to meet the criteria with virtually no practice on that specific task. We continued to modify the challenges until this figure was reached. The final six challenges that comprise the PE Central Challenge for 2005 are described in Table 1. They were modified after the first year based on feedback from teachers who participated in the 1999 Challenge.

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Delivery of the PE Central Challenge

The PE Central Challenge is delivered to participants via the Internet. The Challenge section on PE Central describes and illustrates the six challenges, the rules and guidelines for

administering the Challenge, access to free certificates for the youngsters, sample letters to send out to parents and administrators describing the Challenge, and a frequently asked question page (FAQ). Teachers are encouraged to provide those children, who choose to participate in the Challenge, many chances to complete each of the tasks--in class, at lunch, before or after school. Teachers are also encouraged to "teach" children to successfully complete the challenges by providing them with appropriate cues and ideas for practicing on their own at home. As one of the incentives for children to participate in the PE Central Challenge, teachers reserve free pins for their students by completing an on-line form. Table 2 describes the number of free pins that were made available to teachers along with the number of children and schools that have participated in the PE Central Challenge in the 5 years of its existence. In 2004, 40,000 free pins were available to youngsters, up from 5,000 in the first year of the Challenge. Pins are distributed to children according to the following criteria

GOLD—Criteria met for all 6 challenges

SILVER—Criteria met for 5 of the six challenges

BRONZE-- Criteria met for 4 of the six challenges

When the teachers request the number of gold, bronze and silver pins their students earned at the end of the Challenge, they also complete an electronic survey evaluating the entire program. This information is used to improve and update the Challenge for the next year. The pins are then mailed to the schools for distribution by the teacher prior to the end of the school year.

Analysis of PE Central Challenge

At the end of each year's PE Central Challenge in April, it is interesting to explore whether the children enjoyed and were appropriately motivated by participating in the various

tasks with the intent of determining how to make it better for the following year. To make these decisions, the results of the online survey, email comments and questions, and postings to an online threaded discussion forum about the Challenge are analyzed. The survey asks teachers to report the number of children who participated, how the overall Challenge worked (or did not work) and what changes the teachers recommended for the following year. There are also two open-ended questions that invite teachers to comment on the Challenge. The teachers also include a mailing address to which the pins are sent along with how many gold, silver, and bronze pins they need for their students. In 2004 teachers were able to reserve 30 free pins (Table 2). Schools are also able to purchase additional pins.

What has been learned about the PE Central Challenge?

When the PE Central Challenge started in 1999, questions arose regarding whether physical education teachers would incorporate the Challenge into their programs. The answer was a resounding “yes”. Since its inception, an estimated 400,000 children have participated in the PE Central Challenge (Table 2). In 1999, 59 schools participated in the Challenge (between 5,180 and 6,555 children according to teacher estimates). In 2004 approximately 1,000 schools and more than 130,000 youngsters participated. Anecdotal evidence suggests that many more teachers have incorporated the Challenge into their programs but were unable to reserve pins for their schools, and therefore did not complete the survey at the end of the Challenge.

Another measure of the popularity of the program has been how quickly the pins have been reserved each year (Table 2). While this is an indicator of success, it is also a frustration for PE Central, and for the teachers who are unable to reserve pins for their youngsters. PE Central continues to explore ways to make more pins available—and also decrease the frustration of trying to connect to the Internet only to learn that it is too late to reserve pins for that year. It is

encouraging that the number of free pins available has risen from 5,000 in 1999 to 40,000 in 2004 (Table 2). Interestingly more gold pins have been distributed each year than silver or bronze, although typically youngsters have earned more bronze than silver pins. While the numbers of participants, pins distributed, etc. are interesting, some of the more meaningful information was obtained via the open-ended responses to the end of the year survey along with unsolicited e-mails and responses to a threaded discussion group.

What Teachers Said About the PE Central Challenge

Analyses of the open-ended comments from the self-reports of the teachers have revealed that:

- 1) the Challenge motivates children to practice motor skills outside of physical education classes,
- 2) the Challenge encourages youngsters to help each other succeed at the challenges,
- 3) the Challenge allows children of varying skill ability levels to succeed, and
- 4) the Challenge is appealing to parents as well as teachers.

Motivation to Practice Outside of Class

As hoped, the Challenge did encourage youngsters to practice the six motor skills that combined to make up the Challenge. One teacher wrote, "My students enjoyed doing the activities. We liked the challenges and trying to work on their own. It provided good practice on their skills". Another teacher wrote:

I was thrilled by their determination and continuous practice. I was glad to give every spare moment I had, for, in return, I shared the joy and elation of the children who finally succeeded in something practiced so long.

Some of the teachers also wrote that the Challenge encouraged their students to practice these skills outside of their physical education class. "My students are very psyched and are excited about using their lunch (their only recess) to complete these tasks." "We had one boy give up his entire recess, on a day when it was 80 degrees outside, to stay in and work on the tennis volley challenge," wrote another teacher. A third teacher wrote, "All students were really excited about the challenges and practiced every recess that they could. When other students, not involved in the challenge, saw the students practicing at recesses they wanted to do it too." Of course these comments were encouraging as teachers told us that the Challenge motivated their students to practice motor skills - both in and out of physical education class.

Children Helping Others

Some teachers also said the Challenge encouraged children to help each other succeed at the challenges. One teacher wrote:

The children who completed the challenges first were then able to help the ones having more difficulty. They would teach and work with them. More than anything, they began to understand that each person's skill level is different and they wanted everyone to succeed.

Another teacher stated, "There was a great deal of camaraderie and encouragement as they practiced the skills and tried to achieve the personal goals they set. We use heart rate monitors in class and we were surprised at the level of activity when we rotated from challenge to challenge." Finally this comment was contained in the end of the year survey:

The children really came through for each other. It was nice to see some of my "problem" students rally and help some of the ones who were having trouble with some of the challenges. It was also nice to see some of the non-athletes do as well or better than the

ones who are more athletic because they know the meaning of cooperation. I think it helped teach the meaning of teamwork to some of them.

We were pleased to learn that some teachers used the PE Central Challenge to create a spirit of encouragement and cooperation among their children.

Varying Abilities

Teachers who implemented the Challenge also discovered ways to allow youngsters of varying abilities to succeed on a number of the Challenge tasks. One teacher commented, "The PE Central Challenge has been great for our kids. We have kids coming in to participate that struggle in the regular PE class. Our students represent every shape size and ability level and they all enjoy the Challenge." Another teacher said,

The highly skilled came in and passed with flying colors, but those less skilled worked, and worked, and never gave up. I was thrilled by their determination and continuous practice. I was glad to give every spare moment I had, for in return, I shared the joy and elation of the children who finally succeeded in something practiced so long.

Another teacher wrote: "I think this Challenge gives the less skilled children something to strive for and lets them be successful, also. The increased self-esteem it gives them is extremely satisfying to me." As might be expected, however, not all of the youngsters were "happy" with all of the Challenges. One teacher told us "many of her boys just cannot hula-hoop, as much as they tried. They were disappointed that (they) could do everything else but (were) not (able) to get the gold pin."

Nevertheless, these comments, and others like them, were encouraging because it suggests the Challenge can be made developmentally appropriate and serve as a motivation to youngsters of varying abilities.

Parent Involvement

The final series of comments we want to share in this article are serendipitous, i.e. they were not an intended outcome of the Challenge. From the surveys we learned that a number of teachers found ways to involve parents in the PE Central Challenge. Gerry Cernicky, a teacher from Leechburg, PA set up a system for parents to verify some of the challenges at home. “It was great to receive parents’ signatures in witnessing the test at home, which means there was a family involvement.” Mary Lubner from Grafton, WI had parents come to her school and assist with the Challenge. She wrote: “The parents I had help (administer the Challenge) thought the skills were wonderful and were intrigued by which skills were chosen. They realized which skills were more difficult for the kids and were glad to know that many chances to pass were allowed.”

Diane Cramer, a teacher participant from Bolivia, e-mailed us to ask if it was “within the rules” to be a partner with their children at a parent’s night. We agreed that, while not within our original “rules”, this would be an excellent way to involve parents in their child’s physical education program. Diane confirmed our decision when she e-mailed PE Central over 30 photos of the parents and children from her school working together on the PE Central Challenge.

Suggestions for Improvement

While many of the teacher’s comments about the Challenge were positive, there were also many suggestions for improvement. In 1999, for example, the Challenge was only available for about two months. Teachers voiced their concerns with the short period of time the challenge was available, and as a result, the Challenge was made available for six months for the next two years (approximately November to April) (Table 2).

In addition to lengthening the time to complete the Challenge, some teachers suggested increasing the number of challenge tasks. Others suggested making more pins available.

Fortunately, PE Central has been able to make more pins available¹ each year of the Challenge. Some of the challenges have also been modified from year to year based on the recommendations of the teachers.

The Future of the PE Central Challenge

Feedback about the PE Central Challenge continues to be overwhelmingly positive. For this reason, PE Central plans to continue the program - and hopefully expand it. Two specific goals for the Challenge have been identified.

The first goal is to obtain additional sponsorship to allow an increase in the number of pins that are available each year so that children can earn a pin for each of the six challenges, rather than only one pin. Youngsters could then earn six, rather than one, pins each year. This would allow many more youngsters to earn pins, and ideally every youngster in a school, could earn a minimum of one or two pins. A second goal is to expand the Challenge for middle and secondary school students. Ideally, at some point in the future, the Challenge could be offered to students in grades 4-10.

Finally, although the success of the PE Central Challenge as it currently exists is noteworthy, there is reason for further excitement when considering the potential of the PE Central Challenge. While it is not perfect, the developers of the challenge acknowledge it can be changed and improved year by year so that more and more youngsters are encouraged to increase their voluntary physical activity by practicing the six challenges. Teaching physical education is not the easiest job in the world. Programs like the PE Central Challenge that are exciting and beneficial for youngsters also make the job of teaching more interesting and rewarding for those

who work so hard to guide youngsters in the process of becoming physically active for a lifetime.

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Table 1

The PE Central Challenge Tasks

Balance Shuffle: Two children stand on each end of an eight foot long 2" x 4" board placed on the ground (4" sides of board goes on the ground). Each child travels to the opposite end and then back without falling off or touching the ground.

Hula Hooping: Hula hoop for 20 seconds with the hoop starting around the waist and remaining off the ground (floor) the entire time.

Jump that Rope: Jump a single rope continuously (rope must remain in a constant turning motion) for 90 seconds without a miss.

Volley Up: Three children volley a ball (not a beach ball or balloon) 10 times in a row without the ball hitting the ground.

Partner Throw and Catch: With a partner, throw and catch an object with your hands 30 times in a row without miss from a distance of 30 feet.

Paddle Strike: Strike a ball with a short or long-handled paddle or racket in the air continuously 60 seconds to your self while remaining in a 3-4 foot diameter space, e.g. hoop, jump rope formed into a circle.

Table 2

PE Central Challenge Data

<i>Category</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
Dates of Challenge	2/14/98- 4/16/99	11/3/99- 4/16/00	10/23/00- 4/1/01	10/16/01- 4/1/02	10/1/02- 4/1/03	10/6/03- 4/14/04
# of Participating Children	5180- 6555	13232- 18906	61940	101909	118527	134337
# of Participating Schools	59	133	365	680	798	1000
# of States	30	34	44	49	50	50
# of Countries	2	3	6	7	6	10
# of free pins	5000	10000	22500	40000	45000	40000
Time to reserve free pins	2 days	29 hours	17.5 hours	6 days	31 hours	16 days
Free Pin Limit per school	100	75	50	50	50	30
# of Pins Distributed	4845	8650	18251	34810	41392	37029
Gold	1885	3129	7502	14530	16562	15335
Silver	1434	2487	5126	9561	11419	9766
Bronze	1526	3034	5623	10719	13411	11928

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