

A Pilot Study of Teachers' Acceptance of a Classroom-Based Physical Activity Curriculum Tool: TAKE 10!®

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In response to increases in obesity and other health-related problems (such as type II diabetes and cardiovascular disease) among children, the Texas State Legislature has recently passed Senate Bill 19 into law (SB 19, 2001). By September 2007, each elementary school in Texas will be required to implement a comprehensive health-program comprised of structured physical activity, classroom health education, nutrition services, and parental involvement. As part of this initiative starting in the Fall 2002, all elementary students (kindergarten through sixth grade) are required to participate in 30 minutes of physical activity per day or 135 minutes of physical activity per week.

For the majority of elementary schools, the challenge will be to meet the required minimum of either 30 minutes of physical activity per day or 135 minutes of physical activity per week (Texas Association of Health, Physical Education, Recreation, and Dance [TAHPERD], 2001). Meeting this mandate through traditional forms of physical education would require hiring additional physical education teachers, which is difficult in times when school boards are trimming budgets. Because of current state budgetary constraints, many Texas school districts are searching for new cost-effective advances and innovations to supplement their current physical education programs. Ideally, such approaches will be easy to implement and require few, if any, additional resources (e.g., money, equipment, and time for both training and implementation).

In meeting the new physical activity requirements, additional expenses can be minimized by utilizing current classroom teachers. For instance, TAKE 10!® is a classroom-based curriculum tool implemented by elementary teachers (International Life Sciences Institute Center for Health Promotion [ILSI CHP], 2002). It is designed to integrate frequent, 10-minute periods of physical activity into the academic curriculum objectives of mathematics, science, social studies, and language arts. The program is intended to supplement, not replace, traditional forms of physical activity in elementary schools, including physical education, recess, and after-school activities.

Since 1999, nearly 90,000 children in more than 260 schools in 18 states in the United States have participated in the TAKE 10!® program, including several schools in Houston ISD and Navarro ISD in Texas (Kohl, Moore, Sutton, Kibbe, and Schneider, 2001). Although TAKE 10!® has been used in well over 200 elementary schools

throughout the United States, systematic research into teacher acceptance of such an approach to promoting physical activity in the classroom is limited. Although TAKE 10!® may be appealing to various school districts, its success in helping school districts meet the new physical activity requirements lie with the teachers who will be implementing it into their curricula. The purpose of this study was to determine the teachers' acceptance of the TAKE 10!® program. Results may provide support that TAKE 10!® is an acceptable tool used by elementary teachers to promote physical activity while supporting academic learning.

METHODS

Participants

Study participants were 4 Kindergarten, 1 First, and 3 Second grade teachers from Navarro Independent School District (NISD) in Geronimo, Texas. The teachers were recruited during an after school meeting of all Kindergarten through Second Grade Navarro Elementary School teachers. Combined, the participating teachers exposed approximately 200 students to TAKE 10!® activities.

This study was approved by both the NISD School Board and by the Protection of Human Subjects Committee, Texas State University-San Marcos, and written consent was obtained from all participating teachers after a detailed description of the procedures was provided.

Design and Procedure

TAKE 10!® (www.take10.net) is a classroom-based physical activity program for students in grades K-5 developed by the International Life Sciences Institute Center for Health Promotion (ILSI CHP) in Atlanta, Georgia. This curriculum tool is designed to integrate at least 10 minutes of moderate-to-vigorous physical activity into the elementary classroom while simultaneously reinforcing academic objectives and appealing to multiple learning styles (ILSI CHP, 2002). Based on results from a previously conducted pilot study (Stewart, Dennison, Kohl, Doyle, and Moore, 2002), TAKE 10!® activities averaged 5 to 7 Metabolic Equivalents (METs) and required 25 to 43 kilocalories per session (kcal). Teachers incorporate the activity-based lessons into their typical day, replacing a traditional seated lesson with a movement activity that is integrated with language arts, math, science, social studies, and/or general health concepts. First evaluated

in Fall 1999, TAKE 10!® activities provide students and teachers with a unique, structured opportunity to perform short bouts of physical activity while reinforcing specific learning objectives (ILSI CHP, 2002). For example, the "Invisible Jump Rope" is a TAKE 10!® activity for first graders that incorporates counting skills, simple addition and subtraction, and physical activity by requiring the students to pretend to be jumping rope while counting by 1s, 2s, 5s, and 10s or by adding and subtracting simple math problems. The teacher continues to task the students with such math problems for 10 minutes.

Before implementation, the volunteer teachers attended a one-hour workshop on how to integrate the TAKE 10!® activities into daily classroom curriculum. In addition, research assistants were assigned to each teacher to help with program implementation. From March 12, 2001, to May 18, 2001, TAKE 10!® was integrated into the participating teachers' daily classroom curricula. Teachers were instructed to use the TAKE 10!® materials during the course of the day at their discretion.

To determine how many TAKE 10!® activities were implemented per week and how compatible the TAKE 10!® activities were with daily classroom curriculum objectives, teachers were asked to complete daily an implementation log. Specifically, after administration of a TAKE 10!® activity, the teachers were asked to respond (i.e., strongly agree, agree, neutral, disagree, strongly disagree) to the phrase, "This TAKE 10!® activity was compatible with my classroom curriculum objectives for the day." To further characterize teachers' acceptance of the TAKE 10!® program, the teachers were also asked to complete a 10-item evaluation at the end of the 10-week program. The teachers were asked to respond (i.e., strongly agree, agree, neutral, disagree, strongly disagree) to 10 phrases about their acceptance of the program.

Descriptive statistics (e.g., mean, median, range, and frequencies) were determined to characterize: (a) the weekly implementation of TAKE 10!®, (b) teachers' responses to the compatibility of TAKE 10!® with their daily classroom objectives, and (c) teachers' responses to the post-study evaluation of TAKE 10!®.

RESULTS

All eight teachers completed the daily implementation log; however, one teacher did not respond to the compatibility statement following administration of any TAKE 10!® activity. Seven out of the eight teachers completed the post-study evaluation. Approximately 62.5% of the teachers implemented one to two TAKE 10!® activities per week and 37.5% of the teachers implemented three to four TAKE 10!® activities per week. More specifically, three Kindergarten, one First, and one Second grade teacher implemented one to two TAKE 10!® activities per week and one Kindergarten and two Second grade

teachers implemented three to four TAKE 10!® activities per week. The average number of TAKE 10!® activities administered tended to increase as grade level increased.

Teacher impressions of the compatibility of the TAKE 10!® activities with daily academic curriculum objectives according to each teacher are presented in Table 1.

Table 1
Perceived Compatibility of TAKE 10!® Activities with Daily Academic Curriculum Objectives by Teacher

Teacher	Grade	Strongly Agree - Agree	Neither Agree/Disagree	Strongly Disagree - Disagree
1	Kindergarten	75%	0%	25%
2	Kindergarten	71%	29%	0%
3	Kindergarten	100%	0%	0%
4	Kindergarten	67%	11%	22%
5	First	89%	11%	0%
*6	Second	-	-	-
7	Second	0%	90%	10%
8	Second	35%	53%	12%

*Responses not given.

All four of the Kindergarten teachers and the First grade teacher agreed or strongly agreed that a majority of the time the activities were compatible with their daily classroom curriculum objectives. For example, Teacher #3 agreed or strongly agreed that 100% of the TAKE 10!® activities were compatible with the daily curriculum objectives. The two Second grade teachers that responded to the compatibility phrase on the daily logs were neutral about how compatible the activities were to their daily curriculum objectives. Moreover, as a group, the teachers agreed or strongly agreed that 47% of the time the TAKE 10!® activities were compatible with the academic lesson. Kindergarten and First grade teachers tended to agree more often than Second grade teachers that the TAKE 10!® activities were compatible with their daily classroom curriculum objectives.

Seven out of eight teachers completed the post-program evaluation. The percentage of responses by teachers to acceptance of TAKE 10!® is presented in Table 2.

DISCUSSION

With passage of Senate Bill 19 (SB19) into law, Texas elementary administrators are faced with a challenging task. Not only are elementary schools required to meet rigorous academic standards, but are also now required to provide adequate time for physical activity. Many schools were already offering structured physical education two to three times per week, and thus, providing the students with about 100 minutes of activity weekly. However, offering additional physical education classes to meet

SB19's requirements may be especially difficult for school districts facing budgetary cutbacks. An alternative may be to incorporate structured physical activity into the classroom. TAKE 10![®] may help school districts meet SB19's physical activity requirements while supporting academic learning.

During the pilot study, five teachers implemented one to two TAKE 10![®] activities per week while three teachers implemented three to four TAKE 10![®] activities per

Table 2
Percentage of Responses by Teachers to Acceptance of TAKE 10![®] (N=7)

Item	Strongly Agree - Agree	Neither Agree/Disagree	Strongly Disagree - Disagree
1. It is possible to implement one TAKE 10! [®] activity each day.	28.5%	28.5%	43%
2. It is possible to implement more than one TAKE 10! [®] activity each day.	0%	0%	100%
3. I will continue to implement TAKE 10! [®] next school term.	71%	29%	0%
4. I will recommend TAKE 10! [®] to another teacher or school.	71%	29%	0%
5. Activity breaks help students to refocus during long academic blocks.	86%	14%	0%
6. TAKE 10! [®] activities provide a tool for me to be a more effective teacher.	43%	43%	14%
7. TAKE 10! [®] activities provide a positive outlet for students.	86%	14%	0%
8. TAKE 10! [®] activities are age and gender appropriate.	100%	0%	0%
9. TAKE 10! [®] activities are easy to implement.	86%	0%	14%
10. My students actively participate and enjoy TAKE 10! [®] sessions.	86%	14%	0%

week. Most teachers surveyed believed that it was not possible to implement one TAKE 10![®] activity per day (Table 2). The time of year of the study may have been a factor because follow-up interviews with the teachers indicated that review for the Texas Assessment of

Academic Skills (TAAS) tests impeded daily integration of TAKE 10![®] activities.

Approximately half of the time teachers agreed that the TAKE 10![®] activities were compatible with the daily classroom curriculum objectives. Interestingly, although Second grade teachers were more neutral than the Kindergarten and First grade teachers about the compatibility of the TAKE 10![®] activities with daily curriculum objectives, they implemented more TAKE 10![®] activities per week. Based on such results, future studies are needed to determine whether second grade teachers are more neutral about the compatibility of the TAKE 10![®] activities with daily curriculum objectives because they are held more accountable for academic learning than Kindergarten and First grade teachers.

From review of Table 2, the majority of the teachers surveyed felt that TAKE 10![®] activities were easy to implement, positive outlets for their students, and enjoyable to the students. In addition, the majority of the teachers indicated that they would continue to implement TAKE 10![®] beyond the study period and would recommend TAKE 10![®] to fellow colleagues. Although they were neutral when asked if they felt that TAKE 10![®] added to their effectiveness as teachers, responses to other questions seemed to suggest differently. For instance, most agreed or strongly agreed that the TAKE 10![®] activity breaks helped students to refocus during long academic blocks.

TAKE 10![®] is intended to be a cost-effective and physically challenging program that can be used by schools to supplement current physical education programs, allowing those schools to meet the state mandated requirements of 135 minutes of physical activity per week. However, the potential success of TAKE 10![®] rests on how feasible and attractive the program is to classroom teachers, as well as the program's compatibility to various academic learning environments. As demonstrated in this pilot study, TAKE 10![®] appears to be accepted by classroom teachers. Because most of the teachers felt that the activity breaks helped students to refocus during long activity blocks (Table 2), future studies are warranted regarding whether integration of daily TAKE 10![®] activities will help student's academic performance, esp. on standardized tests. In addition, the number of teachers surveyed in this study was small, and thus, large studies investigating teachers' acceptance of TAKE 10![®] as well as TAKE 10![®]'s impact on teachers effectiveness are warranted

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IN MEMORY



Dr. Shelby Torrance

1923- 2004

Dr. Shelby Frizzell Torrance passed away October 30, 2004. Born in Athens, Texas October 21, 1923, the third child of Jo Ella and John Bunyan Frizzell, she had just celebrated her 81st birthday. Dr. Torrance is survived by her daughter, Susan Shelby Torrance, and sister, Bess Casanova. Friends, Dr. Mary Jane Haskins and Susan East, assisted the family in providing loving care for Shelby in her final years as her health and memory began to fade.

Dr. Shelby Torrance served as chairman of the Women's Health, Physical Education, and Recreation Department for Del Mar Jr. College beginning in 1950. In addition, she was the varsity coach for the Men's and Women's tennis teams when Del Mar participated in Junior College athletics. Always a pioneer and community leader, she became the coordinator for Health Education at Del Mar College before completing 34 years of teaching.

Throughout her long career, Dr. Shelby Torrance loved people, promoted education, and believed in tennis and swimming as the most beneficial lifetime sports available. As a tennis competitor, she held the Texas high school 4A singles champion from Austin High School and the Texas Women's Open titles in Singles and Doubles while playing for the University of Texas in Austin. Following a lifetime of achievement, she was inducted into the Texas Tennis Hall of Fame in 1990.