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JUNIOR HIGH STUDENTS' PERCEPTIONS OF
THE FITNESSGRAM FITNESS TEST

by

Emily Welch

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Exercise Sciences

Brigham Young University

August 2007

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Emily Welch

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

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As chair of the candidate's graduate committee, I have read the thesis of Emily Welch in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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ABSTRACT

JUNIOR HIGH STUDENTS' PERCEPTIONS OF THE FITNESSGRAM FITNESS TEST

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Master of Science

The Fitnessgram is a battery of fitness tests designed for children and adolescents. These tests include aerobic capacity, body composition, muscle strength and endurance, and flexibility. Students are not compared to each other, rather to health fitness standards, specific to age and gender, which indicate good health. The purpose of this study was to identify student perceptions of the Fitnessgram fitness test. This study used surveys (N=82), and follow-up focus group interviews (N=16) to identify student perceptions of the Fitnessgram fitness test. Results using the constant comparative method revealed three major categories: (1) students' perceptions of the purpose of fitness testing, (2) motivation, and (3) test administration. Findings indicated that students clearly understood the purpose of fitness testing, female students were success oriented while males expressed an attitude of learned helplessness in the category of motivation, and

students preferred the PACER over the mile run, enjoyed partner-based stations, but did not care for the body fat assessment.

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Junior High Students' Perceptions of the Fitnessgram Fitness Test

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Abstract

The Fitnessgram is a battery of fitness tests designed for children and adolescents. These tests include aerobic capacity, body composition, muscle strength and endurance, and flexibility. Students are not compared to each other, rather to health fitness standards, specific to age and gender, which indicate good health. The purpose of this study was to identify student perceptions of the Fitnessgram fitness test. This study used surveys (N=82), and follow-up focus-group interviews (N=16) to identify student perceptions of the Fitnessgram fitness test. Results using the constant comparative method revealed three major categories: (1) students' perceptions of the purpose of fitness testing, (2) motivation, and (3) test administration. Findings indicated that students clearly understood the purpose of fitness testing, female students were success oriented while the males expressed an attitude of learned helplessness in the category of motivation, and that students preferred the PACER over the mile run, enjoyed partner-based stations, but did not care for the body-fat assessment.

Introduction

It is a well known fact that obesity is a problem among Americans. During the past 20 years, obesity among adults has risen significantly in the United States. The latest data from the National Center for Health Statistics show 30 percent of U.S. adults 20 years of age and older (over 60 million people) are obese (Centers for Disease Control and Prevention, 2005). This increase is not limited to adults. The percentage of young people who are overweight has more than tripled since 1980. Among children and teens aged 6-19 years, 16 percent (over 9 million young people) are considered overweight. These increasing rates raise concern because of their implications for Americans' health (CDC, 2005). It has long been thought one way to improve public health is to improve individual fitness levels (Beighle, Pangrazi, & Vincent, 2001). This poses the question, how can we improve individual fitness levels?

The Origin of Fitness Tests and How They Evolved

In 1953-1961 Dwight D. Eisenhower occupied the presidential office. During this time a comparative study was published by Kraus and Hirschland (1954) which caused concern about the physical fitness of American children relative to their European counterparts (President's Council on Physical Fitness and Sports, n.d.).

The United States of America has the ideal of greatness and honor. Due to this idealism, the Presidential Council was created because our youth were not physically fit. On July 16, 1956, the President's Council on Youth Fitness was created. At this time, Richard Nixon was vice president and chairman of this council with Shane McCarthy as executive director. The council's main objective was to create public awareness of the

importance of fitness (PCPFS, n.d.). In September, 1957, a conference was held and a plan of action was developed. The first nationwide pilot study of 8,500 boys and girls ages 5-12 was conducted. This resulted in the start of the national testing program now known as the President's Challenge.

As the need for fitness testing was recognized, other organizations began doing research on the subject. In 1982 FITNESSGRAM was developed by The Cooper Institute in Dallas, Texas. Their objective was to increase parental awareness of children's fitness levels by developing an easy way for physical education teachers to report the results of physical fitness assessments (Cooper, n.d.). The main difference between the two tests is the manner in how the students are scored. The President's Challenge is a norm-referenced test which scores students in comparison to other students. The Fitnessgram is criterion-referenced and scores students against an age and gender specific health standard.

Traditional Fitness Tests

The President's Challenge. The President's Challenge is most commonly used to test students' fitness capabilities. The goal is to encourage all children, able and disabled, ages 6-17, to participate in regular physical activity (PCPFS, n.d.). The President's Challenge is a fitness test consisting of a five-item test battery. The tests consists of curl-ups, shuttle run, endurance run (mile run), pull-ups, and sit and reach (PCPFS, n.d.). The curl-ups test abdominal strength, the shuttle run tests speed, the endurance run tests cardiovascular endurance, the pull-ups tests upper arm strength, and the sit and reach tests flexibility (PCPFS, n.d.). These test battery standards are based primarily from data

of the 1985 President's Council on Physical Fitness and Sports (PCPFS) National School Population Survey conducted by the University of Michigan Institute for Social Research. Standards for some of the test item options are derived from other sources, including the Amateur Athletic Union Physical Fitness Program, Canada Fitness Award Program, Health Canada, and the Government of Canada with permission. Award standards were most recently validated in 1998 by means of comparison with a large nationwide sample collected in 1994 (PCPFS, n.d.). The scores must be at or above the 85th percentile on all five items to be eligible for the Presidential Physical Fitness Award (PPFA). Those students who score above the 50th percentile and lower than the 85th percentile are eligible for the National Physical Fitness Award (NPFA). The Participant Physical Fitness Award (PA) is given to those who participate, but do not make the 50th percentile.

Fitnessgram. The Fitnessgram is an alternative to the President's Challenge fitness testing. The Fitnessgram software was developed by The Cooper Institute for Aerobic Research, in Dallas, Texas. Students are assessed in five general areas of health-related fitness. The test components measure aerobic capacity, body composition, muscle strength and endurance, and flexibility. Aerobic capacity is measured using the PACER (a 20 meter progressive, multi-stage shuttle run set to music); a one mile walk/run; or a walk test (available for secondary students). Body composition is measured using percent body fat or body mass index. Muscle strength, endurance, and flexibility are measured by a variety of tests. Abdominal strength is measured with a curl-up test. Trunk strength and flexibility are measured with a trunk lift. Upper body strength can be measured using a 90

degree push-up, pull-up, flexed arm hang, or modified pull-up. Flexibility can be measured using back-saver sit-and-reach, or shoulder stretch. Students are not compared to each other, but to health fitness standards, specific to age and gender, that indicate good health (Cooper, n.d.). The health fitness standards were established by the Fitnessgram Scientific Advisory Board, consisting of fifteen members.

Scores are classified in two areas: needs improvement and healthy fitness zone (HFZ). The HFZ are not averages of everyone else but criterion referenced standards that indicate level of fitness corresponding with health. Zones are set by age and gender (Cooper, n.d.). After assessment, students receive objective, personal feedback and positive reinforcement. This information is designed to be self analyzed by the student and taken home to be shared with parents. It is important to help students make the connection between their assessment and decisions they may need to make to change behavior. The objective is to open communication between parents, students, and teachers concerning students' health.

Students' Perceptions of Fitness Testing

There has been a significant amount of research performed on the validity and reliability of these tests and programs, however, little research has been performed to determine how the tests affect students' attitudes and knowledge of physical fitness (Hopple & Graham, 1995). Pate (1991) summarizes this idea:

It would be desirable to know how children respond to participation in these [physical fitness] tests....Are tests viewed as fun. Do tests have differential effects on different types of children? Though irrelevant from a strict measurement

perspective, these issues may determine the appropriateness of fitness testing in the school setting (p. 233).

Interviewing children in the physical education setting is gaining greater popularity (Manross, 1994; Ratliffe, Imwold, & Conkell, 1994). A study by Hopple and Graham (1995) examined students' perceptions of the mile run. The findings revealed two pertinent categories: students' understanding and test dodging.

The students' understanding was categorized into three sub-categories; abstract understanding, concrete understanding, and no understanding about the purpose for the mile run. Students were represented in each category, but the largest number of students represented the "no understanding" category (Hopple & Graham, 1995). We can conclude that there is an apparent gap between what physical educators expect their students to understand and the knowledge the students actually demonstrate.

Many physical educators can relate to the time-long tale of test dodging. Keep in mind components such as the mile run and curl-ups are based to a degree on a student's genetic ability (Stewart, Boyce, Elliot, & Block, 2005). Several students who know they will do poorly on the test have a tendency to become a test dodger (Hopple & Graham, 1995). The dreaded mile run is a good reason to be excused by a parent's or doctor's note, fake an illness or injury, or just skip out on class. The true message that many students seem to be sending is they are participating in these tests once or twice a year and perceive it as a negative experience (Hopple & Graham, 1995).

Fitness Testing Today

Research indicates the majority of teachers who implemented fitness tests used the norm-referenced President's Challenge, not the criterion-referenced Fitnessgram (Keating & Silverman, 2004; Stewart, Boyce, Elliot, & Block, 2005). A norm-referenced test compares students to other students or to a group of students. A criterion-referenced test compares students to a standard. Achieving the 85th percentile on all tests when compared to other students may be more difficult than it seems. It has been shown that less than 1% of children can earn the President's Challenge award (Corbin, Lovejoy, Steingard, & Emerson, 1990). In 2001 lawmakers in California required all fifth, seventh, and ninth graders to be assessed by the Fitnessgram (Gehring, 2002). It is important that students make the connection between their health and how these tests can help them assess their fitness levels. Do the students understand what these mandated battery of standardized tests mean? Designed by adults, the current fitness tests do not seem to mesh with children's perceptions of the world and what they see as important and meaningful (Hopple & Graham, 1995). Therefore, what is lacking is an understanding of students' perceptions of fitness testing when using the Fitnessgram as a teaching tool to provide personal information to students on their current health level. The purpose of the study was to identify students' perceptions of the Fitnessgram fitness test.

Significance of the Study

Recent research is causing a directional change in how physical educators view fitness and physical activity, especially as these components relate to good health (Beighle et al., 2001). A broader movement called 'New PE' is shaping a philosophy of

physical education more focused on encouraging healthy lifestyles (Gehring, 2002). Though many physical educators are part of this directional change some continue to view fitness testing as an isolated part of Physical Education and do not strongly associate fitness testing with their fitness or physical activity instruction (Keating & Silverman, 2004). Differences between teacher's personalities and viewpoints need to be taken into consideration. Despite teacher's different approaches as they prepare students for fitness testing, (Keating & Silverman, 2004), for students to be fit, they must make healthy lifestyle decisions. One 40-minute class of physical education cannot produce fit children; however, physical education class can definitely help shape the attitudes and decisions made toward a fit lifestyle. Students need to be included in this directional change. Physical educators need to imagine what it is like to be an unfit student (Stewart et al., 2005). Researchers need to identify students' perceptions of fitness testing, so teachers can begin to understand the role and influence they have on students' overall health.

Methods

Setting

This study was conducted at a junior high school with a student population of approximately 1,200 in the southwestern United States. The students were administered the Fitnessgram which consisted of the PACER, curl-ups, trunk lift, back-saver sit-and-reach, 90-degree push-ups, and body fat assessment using skin fold calipers. In semesters previous the students had only been administered the President's Challenge.

The school is in a predominately urban setting and employed two full-time physical educators, one male and one female teacher. The male physical education teacher administered the Fitnessgram to boys' physical education classes and the female physical education teacher to the girls' physical education classes. Physical fitness testing was administered the first day of the ultimate frisbee unit for the girls and a soccer unit for the boys. Both physical educators administered the same test items to all students. The same verbal dialogue was given to each class, by each teacher, the day the Fitnessgram was administered. The verbal dialogue included the reason why fitness testing is administered as well as a brief description of the differences between the norm-referenced President's Challenge and the criterion-referenced Fitnessgram. Variation between each teacher's personality and approach to fitness testing was a consideration. Each student was given a Fitnessgram report card where they were instructed to record their scores for each test. Students were able to see the set up of the stations throughout the gymnasium, were verbally instructed how the test would be administered at each station, picked a partner, and rotated through each station. In addition to verbal instruction there were brief descriptions, placed at each station, on a piece of poster board reminding students how each test was to be performed. After the testing was completed the students turned in their cards for the teacher to enter a grade for completing the fitness testing. The students were not graded on how well they did on their fitness tests; they received a score only for completion of the tests. The students were given the card back the following class period and were to take it home to show their parents. Results from testing were known only to student, parent, teacher, and possibly the student's partner.

Both classes of students were encouraged throughout the semester to participate in an at-home program that focused on staying active for 20 minutes or more at a time. To accomplish that, students kept a daily exercise log. Entries were recorded in class. No formal instruction was given that was separate from the regular curricular units that focus on health-related concepts of fitness.

Participants

Participants in this study were purposely selected (Bogdan & Biklen, 1998), for the interview, from male and female seventh and eighth grade physical education classes. The class sizes were 40 students from the girls' class and 42 students from the boys' class. Only those who participated in the physical fitness tests and returned a signed parental permission letter were eligible to be interviewed. Fitness testing, surveys, and interviews were completed in one week.

Data Sources

Data were collected during the course of the winter semester. Three different data sources were used; surveys, follow-up focus group interviews, and the researcher's field notes.

Surveys

All students were administered the Fitnessgram; the following class period the students completed a short survey (Table 1). It consisted of questions pertaining to their perceptions of the Fitnessgram test. The survey questions were derived from five separate sources: (a) pilot interviews with students who have participated in fitness testing previously, (b) Pangrazi and Corbin's (1993) research on questions teachers ask

pertaining to physical fitness, (c) Hopple and Graham's (1995) study of students' perceptions of the mile run, (d) Silverman and Subramaniam's (1999) research of students' attitudes towards physical education, and (e) Stewart et al., (2005) research of effective teaching practices during physical fitness testing. The survey questions attempted to ascertain what students think is the purpose of fitness testing, their likes and dislikes, and their suggestions for improvement. Students were assured this survey would have no effect on their physical education grade.

Follow-up Focus Group Interviews

Interviews were conducted according to a technique suggested by Patton (1990) who asserts survey results can be better interpreted with additional meaningfulness if follow-up interviews with a sub-sample of respondents are conducted. Follow-up questions based on the participants' responses to the survey were used as a source of data (Patton, 1990).

This study used a nonrandomized selection of 16 students who were chosen by purposeful and selective sampling (Bogdan & Biklen, 1998). To do this the researcher and peer-debriefer purposely selected the 16 interview participants whose perceptions represented the demographics of all survey respondents (Bogdan & Biklen, 1998). The demographics of survey responses included students who thoroughly enjoyed the Fitnessgram to students who did not enjoy it at all and those students in between. The interview participants consisted of nine boys and seven girls.

Interviews took place the following class period, after the physical fitness testing and survey. The interview was conducted in the physical education indoor area during

students' regular physical education period, each lasted approximately 30 minutes. Each participant sat on the floor forming a circle. Interviews were conducted in groups of three or four and were sex segregated. There were two separate sessions consisting of females. The first session consisted of three females; the second session consisted of four females. The boys had three sessions, each session consisting of three males.

Before the interview, all students were asked for permission to be interviewed (if a student declined, another eligible student was purposely selected). All students that were selected accepted to be interviewed. IRB approval was received from Brigham Young University to interview students. Each student was assured of the confidentiality of their responses, was asked permission to have the interview audio taped, and was also informed they may exit the interview or decline to answer a question at any time. These interviews focused on their overall perceptions of fitness testing, the purpose of physical fitness testing, and suggestions they had to improve fitness testing.

Field Notes

The researcher kept field notes. Field notes were taken before and after the focus group interviews in both classes. These notes consisted of insights, emerging ideas, hunches, and summaries of conversations obtained during the data collection and analysis process (Bogdan & Biklen, 1998). These were used to guide the data analysis process in the formulation of themes and categories that emerged from the data.

Data Analysis

The survey and focus group interview transcripts were analyzed using the constant comparative method (Lincoln & Guba, 1985).

Using this method (Lincoln & Guba, 1985) the common, broad themes occurring throughout the data were identified and defined. Following this, data were “copied and pasted” into electronic files according to the identified themes, similar to a process followed by Graham, Hopple, Manross, and Sitzman (1993). If a passage applied to more than one theme it was copied and pasted accordingly. Data from each theme were further examined to confirm, disconfirm, or combine prior insights about the data or even to form a new theme.

Establishing Trustworthiness

While involved in qualitative research, a researcher may assume diverse membership roles. Adler and Adler (1994) imply three principal researcher membership roles: (a) the complete member researcher, (b) the active member researcher, and (c) the peripheral member researcher. The primary researcher took on the role of active member researcher, interacting closely enough with the members being studied to establish an insider’s identity without participating in those activities that may constitute group membership (Adler & Adler, 1994).

Peer Debriefing

To help avoid bias on the part of the researcher and ensure the students’ responses were correctly interpreted during data analysis, a university pedagogy professor with physical education experience and expertise in fitness testing was asked to review and assist in analyzing the data. He met weekly with the primary researcher to discuss categories and themes as the findings emerged. This role is known in qualitative research

as the peer-debriefer (Hanson & Newburg, 1992). All questions raised by this expert were discussed and appropriate revisions were made.

Results

Three main categories became apparent using the survey, focus group interview transcripts, and field notes: the purpose of fitness testing, motivation, and test administration. Each category had an accompanying theme or themes (Table 2). Each category and its accompanying themes will be addressed in the paragraphs to follow. Some categories contained additional themes but lacked a significant number of comments for it to be labeled a theme. Pseudonyms will be used to maintain confidentiality of students. Written and verbal comments were edited for minor grammatical mistakes.

The Purpose of Fitness Testing

The first category, the purpose of fitness testing, consisted of one main theme: health and well-being. Both male and female students clearly understood that the overarching purpose of fitness testing was to gain a personal understanding of their fitness compared to a healthy fitness standard.

Health and Well-Being. This theme (Table 2), health and well-being, was defined as an understanding of personal health in relation to healthy standards set forth by the Fitnessgram assessment. James described his idea of the purpose of fitness testing in this way: “It’s when you test yourself on endurance and everything like that, just to see where you’re at.” The same idea was similarly expressed by Serena who said: “There are certain things you might need to work on than others, so you can see certain parts you need to

work on, and what parts you are already healthy at, and just stay healthy at those parts.”

The students understood that being administered the Fitnessgram was a chance to evaluate themselves and gain an understanding of where they stood in relation to healthy standards. A female student expressed her idea of the purpose of fitness testing by stating simply: “To increase self awareness of how ‘fit’ you are.”

Motivation

The second category had two accompanying themes (Table 2): (a) success orientation and (b) learned helplessness orientation. Success orientation was dominated by 31 female responses compared to seven male responses. Learned helplessness orientation was made up of 36 male student responses.

Success Orientation. Success orientation was defined as students being enthusiastic about results since they were compared to a standard instead of their peers. The female students expressed a strong desire to improve their health after learning their results. Many female students did not reach the healthy standard for certain components of the testing. They were not deterred by these results, but actually expressed a desire to change their lifestyle and reach the healthy standard. A student named Jessica wrote, “It showed me that I am good at most things, except the running portion which I am going to work on.” Another female student who was interviewed recognized she met the healthy standard, but was not satisfied with her score on that standard. She said, “I started jogging. I was at a healthy level, but what I wanted to be at; I wasn’t quite there, so I wanted to have my endurance level higher...” A student named Jane typified the success

orientation attitude when she wrote: “Well it is a lot better than the Presidential fitness test and I like it because I’m not compared to others.”

Learned Helplessness Orientation. Learned helplessness orientation was defined as using an “I do not care attitude or I strongly dislike fitness testing” as a way to cope with poor performance.

Many of the male students similar to the female students did not reach the healthy standard in certain components of the testing. Instead of having a desire to improve, many took on an attitude of not caring. Jason stated, “I don’t really care, because I know a lot of people can run long distances. But I don’t really care because I don’t like long distances.” Other male students thought certain components should be removed from the testing since they did not meet the healthy standard. John suggests, “I think you should just take it out because I don’t know many kids that will say, ‘Oh I’m not good, I want to try harder.’” When interviewed William summed up the learned helplessness orientation when he expressed: “They’re just numbers and if you can’t make them and you know you can’t and that’s all you’re effort, then what’s the use in trying at all.” Many of these types of responses were found on the answers given from the survey. However, upon further questioning during the follow-up interviews male students expressed interest in wanting to improve as mentioned by Spencer. He said, “This got me started because I live right next to the new Gold’s gym, and it got me excited about that, and now I run a mile everyday on the treadmill.” Further examination of this difference will be explained in the discussion section.

Test Administration

This third and final category had three themes (Table 2) that emerged from the data: (a) PACER over mile run, (b) partner-based stations, and (c) body fat assessment. For the first two themes female and male students had similar responses. The third theme, body fat percentage test, was predominately female responses.

PACER Over Mile Run. PACER over mile run was defined as students enjoying the opportunity to choose running the PACER rather than the mile. A female student expressed why she preferred the PACER over the mile run by writing: “I like that you can stop when you feel you need to.” Similarly another female student added, “I think with the P.A.C.E.R. test, when you were really tired, and you couldn’t go, you could stop, so that’s more accurate on how well you can go.” In addition to the idea that the PACER was a more accurate measurement of endurance, the male students expressed a desire to do their best in the PACER due to the perceived competition component. One male student said, “I liked the competition. If I did it by myself I wouldn’t have gone as long as I did with other people.” Another male student while being interviewed stated, “Yeah, like, me and Jonathan were on the same track team, so we were trying to see who could stay in the longest. Even if we were like, dying.” The PACER seemed to be a nice diversion from the routine mile run.

Partner-Based Stations. The second theme, partner-based stations was defined as students feeling that it was beneficial to rotate through stations with a partner rather than perform tests in front of the entire class. A female student expressed, “I like it where you, and just like, a partner, would see your scores, and if you didn’t want to show anyone else

you didn't have to." Students felt privacy was a distinct advantage to the Fitnessgram testing. Another female student said, "This is more private, and I think it's more for yourself to benefit, just to know where you are, not everyone else's health." Male students felt similar. A male student being interviewed said, "The other people can't notice what's wrong, and know that some people can't do something other people can." Students also felt testing was less demanding by rotating through stations. A male student stated, "There's not a lot of pressure to do it in front of other people, you can just do it when you're ready." A female student said, "I liked that you have different stations with different things to do..."

Body Fat Assessment. The third and final theme, body fat assessment, was defined as sensitivity to the measuring of their body fat percentage. As anticipated, this test was not well received by junior high girls. One student said, "It's kind of like, if you don't know, and if you have more than you thought you would and everyone's standing around it's really embarrassing, because you think everyone's staring at you because you have a bunch of body fat." Another student stated, "It's embarrassing to do, because you don't know if you're going to be over what you need to be." Some female students did not seem to mind and others felt slightly uncomfortable. Sara said, "The only thing that was a little embarrassing was the skinfold, that was the only one that made me a little uncomfortable, but everything else was fine." Very few male responses were received concerning this component of the fitness testing.

Discussion

The results of this study suggest three major implications concerning students' perceptions of fitness testing. First, the vast majority of students have a cognitive understanding of the purpose of fitness testing. Second, the teacher's attitude toward fitness testing has a profound influence on students' perceptions and reaction to fitness testing. Finally, certain components of the Fitnessgram have students engaged in fitness testing and having fun while other components need to be improved.

First, physical educators should feel a sense of success knowing that the students cognitively understood why the Fitnessgram testing was administered. This finding is nearly opposite of Hopple and Graham's study in 1995 when students did not know why they were running the mile. Students were represented in each category (abstract understanding, concrete understanding, and no understanding), but the largest number of students fell into the "no understanding" category (Hopple & Graham, 1995). In comparison to the current study, it appears that physical educators have helped students to understand the purpose of fitness testing. This is an important step; students who understand why they are performing the fitness tests may be more likely to use the results to improve their health.

The second major implication has to do with the teacher's attitude toward fitness testing. A teacher's attitude toward fitness testing is reflected in the student's responses and perceptions of whether or not fitness testing is fun and can help move them towards healthy lifestyle choices. An overwhelming number of females compared to males in this study expressed interest in improving their health. The males expressed disregard for

fitness testing and were not as motivated to improve their scores. The male students exhibited a sense of learned helplessness similar to the results of Hopple & Graham's (1995) test dodgers. Dodging the mile run by faking a variety of illnesses or injuries, being absent on days the test was administered, or producing a written note from a doctor or a parent was common (but not exclusive) to students who scored poorly on the test (Hopple & Graham, 1995). These test dodging tactics paralleled the "I do not care attitude or I strongly dislike fitness testing" taken on by the male students in the current study. All of these actions and attitudes seem to be coping skills for poor performance. It may be that this occurrence was in large part due to the attitude of the physical educator. Whitehead and Corbin (1991) suggest that differences among the approach teachers take, may be more powerful than potential experimental effects. Floher and Williams (1997) also support findings which suggest the attitude of the physical educator while administering fitness tests may greatly sway a child's attitudes toward physical fitness and physical activity.

As cited in the field notes, the female physical educator demonstrated enthusiasm about fitness testing whereas the male physical educator, perhaps unintentionally, administered the tests with an attitude that expressed fitness testing is tedious and not very useful. Students, both male and female, seemed to have reflected the teacher's perspective. There were a few male students who expressed motivation to improve their scores despite the male teacher's attitude however there were many male students whose attitude reflected that of their teacher. Yet, upon being interviewed by the female physical educator, some male students who originally responded with comments of disdain for

fitness testing later expressed motivation to improve their health. With positive reinforcement the male students seemed to change their perceptions of fitness testing and gauged the results as an opportunity to begin improving their health.

Excellent suggestions for teacher considerations are given in an article by Stewart et al, (2005). They suggest the physical education instructor make fitness testing fun for students, being flexible, use stations to optimize time and space, allow students the opportunity to make choices, and be empathetic. All of these suggestions can be implemented while administering the Fitnessgram. Stewart et al, (2005) concludes “Instead of facing disappointed students when you tell them there will be fitness testing...make the extra adjustments needed in order to provide a valuable, fun experience in fitness testing” (p. 24). The students in turn may just decide they want to make healthier lifestyle choices and improve their scores next time. Students, both male and female, in the current study liked the use of partners and stations in a self-assessment approach, which provide further support for findings from Stewart et al (2005).

Lastly, this study revealed that students enjoyed most components of Fitnessgram. The PACER was much preferred over running the mile, students felt successful reaching the healthy standard in curl-ups, push-ups, and flexibility. One component of Fitnessgram which several students gave suggestions for improvement was the body fat assessment. There were concerns about crowding around the station and fear of embarrassment due to its sensitive nature. These findings suggest that teachers use two or more stations with skin fold calipers and/or possibly a partition placed in the gym so students would be allowed some privacy while performing the assessment. Students also suggested that the

teacher possibly administer the test to each individual student, for a more accurate assessment. The last suggestion for improvement was that students would liked the opportunity to be tested at the beginning and the end of the semester. The students wanted to track their progression.

Students' perceptions of fitness testing may be more positive if we as physical educators teach cognitively the "why" of testing, demonstrate an enthusiasm during the administration of the tests, make the appropriate accommodations to give students the opportunity to be successful, and use the results to help students make better decisions concerning their health.

Conclusion

Further qualitative research needs to be conducted concerning students' perceptions of the Fitnessgram test. Replications of this study are needed to investigate students' perceptions of Fitnessgram results over a period of time to understand if students will or will not make healthy lifestyle choices due to results from the test.

Research examining the teacher's influence on students' perceptions of fitness testing is recommended. While it was a subjective observation in this study it seems to hold merit that a teacher's attitude towards fitness testing can affect the student's perceptions of fitness testing and whether or not they are motivated to improve or maintain healthy fitness standards. There has been little research published in this field of study. It would be advantageous to better understand how students feel about fitness testing so we can be better informed as physical educators and provide a motivating,

accommodating, and enthusiastic environment for students to be tested. In this way students may be more apt to choose healthy habits for a lifetime.

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Table 1

Questionnaire

Roll Call Number:

Please Circle: Male Female

Age:

Grade Level:

1. In your own words define what you think the purpose of fitness testing is?
 2. What, if anything, do you like about fitness testing?
 3. What, if anything, do you dislike about fitness testing?
 4. What suggestions, if any, do you have for improving the fitness test?
 5. How has the feedback from the Fitnessgram helped you in relationship to your own health, if at all?
-

Table 2

Junior High Students' Perceptions of Fitness Testing

Category	Theme	# of Responses (Girls Boys Combined)		
The Purpose of Fitness Testing	Health and Well-Being	65	36	101
Motivation	Success Orientation	31	7	31
	Learned Helplessness	0	36	36
Test Administration	PACER over Mile Run	26	20	46
	Partner-Based Stations	14	14	28
	Body Fat Assessment	25	1	26

Appendix A
Prospectus

Chapter 1

Introduction

It is a well known fact that Americans struggle with obesity. During the past 20 years, obesity among adults has risen significantly in the United States. The latest data from the National Center for Health Statistics show that 30 percent of U.S. adults 20 years of age and older - over 60 million people - are obese. This increase is not limited to adults. The percentage of young people who are overweight has more than tripled since 1980. Among children and teens aged 6-19 years, 16 percent (over 9 million young people) are considered overweight. These increasing rates raise concern because of their implications for Americans' health (Centers for Disease Control and Prevention, 2005). It has long been thought that one way to improve public health is to improve individual fitness levels (Beighle, Pangrazi, & Vincent, 2001). This begs the question, how can we improve individual fitness levels?

For children ages 11-18, physical education class provides physical fitness testing. These tests remain the most commonly used tool in public school to assess fitness. Fitness tests measure body composition, muscular strength and endurance, speed, agility, flexibility, and aerobic capacity. There are two well-known fitness tests used in the public schools: Fitnessgram, which measures health-related fitness and the President's Challenge which measures health-related fitness and performance of specific skills. Research indicates the majority of teachers who implemented fitness tests used the norm-referenced President's Challenge, not the criterion-referenced Fitnessgram (Keating & Silverman, 2004). A norm-referenced test compares students to other students or to a

group of students. A criterion-referenced test compares students to a standard. Six years ago lawmakers in California required all fifth, seventh, and ninth graders to be assessed by the Fitnessgram (Gehring, 2002). Do the students understand what these mandated battery of standardized tests mean? It is important that students make the connection between their health and how these tests can help them assess their fitness level. Data suggests that fitness testing is viewed as merely an isolated part of the physical education program (Keating & Silverman, 2004). Designed by adults, the current fitness tests do not seem to mesh with children's perceptions of the world and what they see as important and meaningful (Hopple, Graham, 1995).

Purpose Statement

The purpose of the study is to identify student perceptions of the Fitnessgram fitness test.

Assumptions

It is assumed that as the students are interviewed and answer survey questions all will respond with true and honest perceptions of fitness testing.

Delimitations

Delimitations include seventh and eighth grade boys and girls. Students are in sex-segregated classes at a junior high school located in the southwestern United States. It will be the first time the students have been administered the Fitnessgram test battery. The researcher is one of the teachers who will administer the Fitnessgram.

Limitations

This study will be limited to students at one Junior High School in Utah.

Significance of the Study

Recent research is causing a directional change in how physical educators view fitness and physical activity, especially as they relate to good health (Beighle, Pangrazi, & Vincent, 2001). To be fit, one must make healthy lifestyle decisions. One forty-minute class of physical education can not produce fit children; however, physical education class can definitely help shape the attitudes and decisions made toward a fit lifestyle. For example, some students may get discouraged in physical education if they score poorly on fitness tests despite them being physically active (Welk & Morrow, 2002). Studies have demonstrated that negative feedback from fitness testing can lead to reduction in a child's level of intrinsic motivation toward physical activity (Whitehead & Corbin, 1991). The students need to be included in this directional change. Physical educators need to imagine what it is like to be an unfit student (Stewart, Boyce, Elliot, & Block, 2005). Researchers need to identify students' perceptions of fitness testing, so teachers can begin to understand the role and influence they have on students' overall health.

Chapter 2

Review of Literature

Physical fitness tests are some of the most memorable tests in physical education class, though the memories are not ones that most children love to recall. Designed by adults, the current fitness tests do not seem to mesh with children's perceptions of the world and what they see as important and meaningful (Hopple & Graham, 1995). Should students' perceptions of fitness testing have an impact on how fitness tests are administered? This chapter will examine (a) the origins of fitness tests and how they have evolved, (b) traditional fitness tests currently administered such as The President's Challenge and Fitnessgram, and (c) students' current perceptions of fitness testing.

The Origin of Fitness Tests and How They Evolved

In 1953-1961 Dwight D. Eisenhower occupied the presidential office. During this time a comparative study was published by Kraus and Hirschland (Kraus & Hirschland, 1954) which caused concern about the physical fitness of American children relative to their European counterparts (President's Council on Physical Fitness and Sports, n.d.). The United States of America has the ideal of greatness and honor. Due to this idealism, the Presidential Council was created because our youth were not physically fit. On July 16, 1956 the President's Council on Youth Fitness was created. At this time, Richard Nixon was vice president and chairman of this council with Shane McCarthy as executive director. The council's main objective was to create public awareness of the importance of fitness (PCPFS, 2003).

In September 1957 a conference was held and a plan of action was developed. The first nationwide pilot study of 8,500 boys and girls ages five through twelve would be conducted. This resulted in the start of the national testing program now known as the President's Challenge.

As the need for fitness testing was recognized, other organizations began doing research on the subject. In 1982 FITNESSGRAM was developed by The Cooper Institute in Dallas, Texas. Their objective was to increase parental awareness of children's fitness levels by developing an easy way for physical education teachers to report the results of physical fitness assessments (Cooper, n.d.). The main difference between the two tests is the manner in how the students are scored. The President's Challenge is a norm-referenced test which scores students in comparison to other students. The Fitnessgram is criterion-referenced and scores students against an age and gender specific standard.

Traditional Fitness Tests

The President's Challenge. Throughout fifty years of evolution of fitness testing there are mainly two traditional fitness tests administered, The President's Challenge and Fitnessgram. The President's Challenge is a fitness test consisting of a five-item test battery. The goal is to encourage all children, able and disabled, ages 6-17, to participate in regular physical activity (PCPFS, n.d.).

President's Challenge is most commonly used to test student's fitness capabilities. A five-item test battery is administered. The test consists of Curl-Ups, Shuttle Run, Endurance Run (mile run), Pull-Ups, and Sit and Reach (PCPFS, n.d.). The curl-ups test abdominal strength, the shuttle run tests speed, the endurance run tests cardiovascular

endurance, the pull-ups tests upper arm strength, and the sit and reach tests flexibility (PCPFS, n.d.). These test battery standards are based primarily from data of the 1985 President's Council on Physical Fitness and Sports (PCPFS) National School Population Survey conducted by the University of Michigan Institute for Social Research. Standards for some of the test item options are derived from other sources, including the Amateur Athletic Union Physical Fitness Program, Canada Fitness Award Program, Health Canada, and the Government of Canada with permission. Award standards were most recently validated in 1998 by means of comparison with a large nationwide sample collected in 1994 (PCPFS, n.d.).

The scores must be at or above the 85th percentile on all five items to be eligible for the Presidential Physical Fitness Award (PPFA). Those students who score above the 50th percentile and lower than the 85th percentile are eligible for the National Physical Fitness Award (NPFA). The Participant Physical Fitness Award (PA) is given to those who participate, but do not make the 50th percentile.

Fitnessgram. The Fitnessgram is an alternative to presidential fitness testing. The Fitnessgram software was developed by The Cooper Institute for Aerobic Research, in Dallas, Texas. Students are assessed in five general areas of health-related fitness. The test components measure aerobic capacity, body composition, muscle strength and endurance, and flexibility. Aerobic capacity is measured using the PACER (a 20 meter progressive, multi-stage shuttle run set to music); a one mile walk/run; or a walk test (available for secondary students). Body composition is measured using percent body fat or body mass index. Muscle strength, endurance, and flexibility are measured by a variety

of tests. Abdominal strength is measured with a curl-up test. Trunk strength and flexibility are measured with a trunk lift. Upper body strength can be measured using a 90 degree push-up, pull-up, flexed arm hang, or modified pull-up. Flexibility can be measured using back-saver sit-and-reach, or shoulder stretch. Students are not compared to each other, but to health fitness standards, specific to age and gender, that indicate good health (Cooper, n.d.).

Assessment is classified in two areas: needs improvement and healthy fitness zone (HFZ). After assessment, students receive objective, personal feedback and positive reinforcement. This is important to help students make the connection between their assessment and decisions they may need to make to change behavior. The objective is to open communication between parents, students, and teachers concerning students' health.

Student's Perceptions of Fitness Testing

There has been a significant amount of research performed on the validity and reliability of these tests and programs, however, little research has been performed to determine how the tests affect students' attitude and knowledge of physical fitness. Pate (1991) summarizes this idea:

It would be desirable to know how children respond to participation in these [physical fitness] tests....Are tests viewed as fun. Do tests have differential effects on different types of children? Though irrelevant from a strict measurement perspective, these issues may determine the appropriateness of fitness testing in the school setting. (p. 233)

Interviewing children in the physical education setting is gaining greater popularity (Manross, 1994; Ratliffe, Imwold, & Conkell, 1994). A study by Hopple and Graham (1995) researched students' perceptions of the component of fitness testing, known as the mile run. The findings revealed three main categories; students' understanding, test dodging, and opinions for change.

The students' understanding was categorized into three sub-categories; abstract understanding, concrete understanding, and no understanding about the purpose for the mile run. Students fell into each category, but the largest number of students fell into the "no understanding" category (Hopple & Graham, 1995).

Many physical educators can relate to the time long tale of test dodging. The dreaded mile run is a good reason to be excused by a parent's or doctor's note, fake an illness or injury, or just skip out on class. Many students who know they will do poorly on the test have a tendency to become a test dodger (Hopple & Graham, 1995).

When presented with the idea for ways to change the fitness testing the students spoke right up. A student named Roberta who doesn't like the idea of being timed, mentioned that "changing the mile to a half mile would be easier and cause the kids to want to try harder." She says, "You think it is something you have to do, so it's not really fun." It seems that students are willing to participate if we as physical educators will expand our horizons for fitness testing.

This study by Hopple and Graham (1995) demonstrated that there is an apparent gap between what teachers expect their students to learn and the knowledge the students actually obtain. Just because we teach it, does not mean they will learn it. As for the test

dodgers, the true message from the students is that participating once or twice a year in fitness testing is perceived to be a negative experience. When students are given some kind of say in physical fitness testing we may be able to provide them with an appropriate, positive experience that leads to our ultimate goal of an engagement in physical activity over a lifetime.

Physical fitness testing has evolved over the course of fifty years yet is continually redesigned or modified by adults without the input of the participant, the student. The President's Challenge and Fitnessgram are good programs and some have benefited from them. However, published research on students' perceptions of Presidential fitness testing and/or Fitnessgram is limited. Research on students' perceptions of these tests is warranted. Now is the time to explore ways to test components of health-related fitness in ways more relevant and appropriate for children. The use of student choice, testing options, tasks at home, self- and partner assessments, and the inclusion of "fun" in testing situations may hold merit as we look into more developmentally appropriate and authentic methods of testing children's fitness (Hopple & Graham, 1995). Although Hopple and Graham studied students' perceptions of one of the fitness tests (mile run) further research on students' perceptions of fitness testing is needed.

Chapter 3

Methods

Setting

This study will be conducted at a junior high school with a student population of approximately 1,200 in the southwestern United States. The students will be administered the Fitnessgram which consists of the Pacer, curl-ups, trunk lift, back-saver sit-and-reach, flexed arm hang, and body mass index calculation.

The school is in a predominately urban setting and employs four physical educators. Mr. Groves will administer the Fitnessgram to boys' physical education classes and Mrs. Welch to the girls' physical education classes. Physical fitness testing will be administered the first day of the ultimate unit for the girls and a soccer unit for the boys. Physical educators will administer the same test items to all students. Computerized test results will be presented the following week to aid students in setting physical fitness goals. The students will be encouraged throughout the semester to participate in an at-home program that focuses on staying active for 20 minutes or more at a time. No formal instruction will be given that is separate from the regular curricular units that focus on health-related concepts of fitness.

Participants

Participants in this study will be purposely selected (Bogdan & Biklen, 1998) from male and female seventh and eighth grade physical education classes. The class sizes will be 45 students from Mrs. Welch's class and 40 students from Mr. Grove's

class. Only those who have participated in the physical fitness tests and have returned a signed parental permission letter will be eligible to be interviewed.

Data Sources

Data will be collected during the course of the winter semester. Three different data sources will be used; surveys, follow-up focus group interviews, and the researcher's field notes.

Surveys

All students will first be administered Fitnessgram and then following the students will complete a short survey (See Appendix A). It will consist of two parts, where they rank themselves in the fitness category and questions pertaining to their perceptions of the Fitnessgram test. The survey questions were derived from five separate sources: (a) pre-pilot interviews with students who have participated in fitness testing previously, (b) Pangrazi and Corbin's (1993) research on questions teachers ask pertaining to physical fitness, (c) Hopple and Graham's (1995) study of students' perceptions of the mile run, (d) Silverman and Subramaniam's (1999) research of students' attitudes towards physical education, and (e) Stewart et al., (2005) research of effective teaching practices during physical fitness testing. The survey questions will attempt to ascertain what students think the purpose of fitness testing is, their likes and dislikes, and their suggestions for improvement. Students will be assured this survey will have no effect on their physical education grade.

Follow-up Focus Group Interviews

Interviews will be conducted according to a technique suggested by Patton (1990) who asserts survey results can be better interpreted with additional meaningfulness if follow-up interviews with a sub-sample of respondents are conducted. Follow-up questions based on the participants' responses to the survey will be used as a source of data (Patton, 1990).

This study will use a nonrandomized selection of 12 students who will be chosen by purposeful and selective sampling (Bogdan & Biklen, 1998). To do this the researcher will purposely select the 12 interview participants whose perceptions represent the demographics of all survey respondents (Bogdan & Biklen, 1998). The interview participants will be equally represented by boys and girls.

Interviews will take place after the physical fitness testing and survey. The interview will be conducted in the physical education indoor area during students' regular physical education period, each lasting approximately 30 minutes. Each participant will sit on the floor forming a circle.

Before an interview, all students will be asked for permission to be interviewed (if a student declines, another eligible student will be randomly selected). Students will be assured of the confidentiality of their responses, will be asked permission to have the interview audio taped, and will also be informed they may exit the interview or decline to answer a question at any time. These interviews will focus on their overall perceptions of fitness testing, the purpose of physical fitness testing, and suggestions they may have to improve fitness testing.

Field Notes

The researcher will keep field notes. Field notes will be taken before and after the focus group interviews in both Mrs. Welch and Mr. Grove's classes. These notes will consist of insights, emerging ideas, hunches, and summaries of conversations obtained during the data collection and analysis process (Bogdan & Biklen, 1998). They will channel discussions and aid in the formulation of categories that emerge from the analysis of data. Pertinent material from the physical educators, such as unit plans and fitness scores will be included in the researcher's field notes.

Data Analysis

The survey, focus group interview transcripts, and field notes will be analyzed using the constant comparative method (Lincoln & Guba, 1985). Each student with parental consent will complete the survey. After initial analysis of the survey, follow-up interview participants will be selected based on their responses to the survey (Patton, 1990). Survey responses which incorporate a broad range of student perceptions to reasonably represent the student population will be selected for interviews.

Using the constant comparative method (Bogden & Biklen, 1982; Lincoln & Guba, 1985) the common, broad themes occurring throughout the data will be identified and defined. Following this, data will be "cut and pasted" onto pages of large artist's sketch pads according to the identified themes, similar to a process followed by Graham, Hopple, Manross, and Sitzman (1993). If a passage applies to more than one theme it will be copied and pasted accordingly. Data from each theme will be further examined to confirm, disconfirm, or combine prior insights about the data or even to form a new

theme. The results will summarize and describe each theme to be most representative of what the data will say and a basis will be formed.

Establishing Trustworthiness

While involved in qualitative research, a researcher may assume diverse membership roles. Adler and Adler (1994) imply three principal researcher membership roles: (a) the complete member researcher, (b) the active member researcher, and (c) the peripheral member researcher. The primary researcher will take on the role of active member researcher, interacting closely enough with the members being studied to establish an insider's identity without participating in those activities that may constitute group membership (Adler & Adler, 1994).

Peer Debriefing

To avoid any bias on the part of the researcher and ensure the students' responses are correctly interpreted during data analysis, a university pedagogy professor with physical education experience and expertise in fitness testing will be asked to review and analyze the data. He will meet weekly with the primary researcher to discuss categories and themes as the findings emerge. This role is known in qualitative research as the peer-debriefer (Hanson & Newburg, 1992). All questions raised by this expert will be discussed and appropriate revisions will be made.

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Appendix A-1

Questionnaire

Roll Call Number:

Please Circle: Male Female

Age:

Grade Level:

- 1) In your own words define what you think the purpose of fitness testing is?

- 2) What, if anything, do you like about fitness testing?

- 3) What, if anything, do you dislike about fitness testing?

- 4) What suggestions, if any, do you have for improving the fitness test?

- 5) How has the feedback from the Fitnessgram helped you in relationship to your own health, if at all?