Accountability for What?
Fitness, Skill, Academics, or Physical Activity?

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What is Accountability

• The responsibility of teachers and administrators to provide evidence to students, parents and the public that a program is effective in reaching stated outcomes.
How is Accountability Determined?

- Goals and outcomes are determined
- Instruments to evaluate progress are used
  - Most believable instruments are designed to be valid and reliable
  - Instruments are usually agreed upon by experts or evaluated by measurement techniques
The Problem with Designing your own Evaluation Instruments

- Teachers set their own outcomes and design instruments – judge and jury proposition
- Subjective judgment by the teacher is used
- Checklists and rubrics are seldom validated
- Can’t compare local and national scores
What Measures Should we Hold Ourselves Accountable for...

- Fitness?
- Skill Development?
- Academic Performance?
- Physical Activity Promotion?
A Disclaimer – Read Carefully!

• All the areas mentioned in the previous slide are important
  – Kids should be taught the essentials of fitness!
  – Teachers should integrate academic concepts into PE instruction!
  – Skill development is absolutely an important outcome!
Definition of Physical Fitness

A set of attributes that people have or achieve relating to their ability to perform physical activity

(USDHHS, 1996)
Definition of Physical Activity

Bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure

(adapted from Bouchard, et al., 1990; USDHHS, 1996)
Definition of Exercise

Exercise is leisure time physical activity conducted with the intention of developing physical fitness

(adapted from Bouchard, et al., 1990)
Physical Fitness
Physical Fitness Outcomes

• For the last 45 years, the U.S. has emphasized fitness as a way to fight obesity & improve health
• However, obesity continues to increase in the U.S.
• This approach has failed in the U.S. because children and most adults have not “bought in” to fitness and exercise (high intensity)
The Fitness Push

• Always reported because this is the only standardized test we have in P.E.
• The public always listens to stories about “unfit” kids because fitness tests are national in nature
• Most people believe health benefits are only found in high intensity exercise
Nationwide Fitness Testing Data

- Up to 20,000 youngsters tested
- Conducted by the President’s Council on Physical Fitness and Sports
- Evaluated youngsters using the PCPFS physical fitness test
- Sampled entire U.S.
Are Youth Fit or Unfit?

- National test results did not show a decline
- Fitness tests changed, offering little comparative data
- Definitions of fitness changed
- Test batteries fail the overwhelming majority of youth (and adults) labeling almost everyone unfit.
How Valid are Fitness Tests?

- Aerobic Tests – 50% in children 11 or older; 35% in children 10 or younger
- Abdominal tests – 2% related to strength; 6% related to endurance
- Upper body tests – 16% to 32% depending on age
Improvement in the Fitness Arena is Difficult at Best

- Preadolescent youth show little physiological response to training (Payne & Morrow, 1993)
- Fitness is strongly influenced by genetics (Bouchard, 1993)
- Kids are becoming fatter so fitness performance is decreasing among these youngsters
Fitness Outcomes May Not Serve Youth Who Need It Most

- Fitness outcomes are forced on youth which creates negative backlash – removes locus of control
- Creates a hierarchy of “good” to “poor” activity
- Rewards high intensity activity and marginalizes less demanding activity
- Often creates unrealistic standards – “One size fits all”
Differing Responses to the Same Training

From Bouchard, C. 1993. Heredity and Health Related Fitness. PCPFS Research Digest

Five percent of people are non-responders to training
Factors that Limit Physical Fitness Performance

- Trainability
- Genetic Predisposition
- Maturation, Diet, Activity
Is Fitness Testing the Best Outcome Measure for P.E.?

- Fitness is a product that many can’t reach, no matter how hard they try because of genetic limitations.
- Fitness scores are going down because of increase in BMI.
- Most fitness improvement in elementary schools is the result of students growing older.
Skill Development
Skill Development

• An important outcome for P.E.
• Skills are tools that can be used to be an active person
• Traditionally, a core outcome for physical education
• Unfortunately, no standardized tests are available (as done with fitness)
Skill Development Outcomes

• Skill measurement is difficult and time consuming – takes time away from learning
• Is genetically controlled and favors highly skilled youth – discourages unskilled youth
• Very few (if any) valid and reliable skill tests are available to teachers.
How are Results Used?

- Is the program changed or modified based on the test results?
- Do they positively impact young students?
- Do they measure skill development or maturity (kids improve as they grow older)
Tough Questions

- What skills should we measure?
- Who decides what rubrics will be used?
- What do we do for youth with low skill performance scores?
- Do you have to be physically skilled to be physically active (and happy)?
Is Skill Development the Best Outcome for PE Accountability?

- Hard to measure
- No national measures
- Many youth will never reach a high level of skill
- Not everybody can paint great pictures
- Even great teachers have trouble getting all students to high achievement levels
Academic Achievement
(Interdisciplinary-Brain)
Academic/Interdisciplinary Outcomes

- Driven by a desire to make P.E. more respected – If kids learn more because of P.E., administrators will support it
- Want to show that kids who score higher in (fill in the blank, i.e., fitness, activity, skill) do better academically
Long History of Looking for an Academic Connection...

- Perceptual motor programs in the 60s and 70s
- Comprehensive review of 180 studies (Mattson, 1983) showed little impact
- Thomas & Thomas (1986), "attempts to improve cognitive function through the use of movement are not theoretically sound"
P.E. & Academic Scores

- Three Rivers study showed that more time in P.E. did not result in lowered academic scores, however academic scores did not increase.
- Students in SPARK program received health benefits but academic scores were not positively impacted.
Fitness and Academic Scores

• California Study Headline– “State Study Proves Physically Fit Kids Perform Better Academically”

• Correlation study that shows the relationship between academic performance & fitness

• Not a cause and effect study– could be that high academic students try harder on fitness tests
Integration of Academic Content into P.E.

• Integrating academic concepts into instruction is important because it supports school outcomes and offers another learning medium

• Integration creates friends (classroom teachers)

• Integration is one more way to make learning “whole”
Jumping on the Academic Bandwagon – Think Carefully

- Academic instruction is not our area of specialization
- P.E. is the only place where students can learn physical skills and active lifestyles
- Are we willing to be held accountable for academic scores?
Physical Activity Promotion
The Fattening of America

• One in three Americans are overweight or obese
• Fat free and/or sugar free foods are in abundant supply yet weight continues to increase
• The fitness emphasis since 1958 has not slowed the obesity epidemic among youth
A View of Physically At-Risk Children*

- Data on school age youth in three countries
- Pedometer step counts and BMI
- Data gathered using the same protocol
- Data gathered during the fall season in each country

## Youth at Risk
### Activity Levels by Steps

<table>
<thead>
<tr>
<th>Tertiles</th>
<th>Girls, Ages 6-12&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Active</td>
<td>14,000 steps</td>
<td>Level</td>
</tr>
<tr>
<td>Least Active</td>
<td>8-9,000 steps</td>
<td>Level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tertiles</th>
<th>Boys, Ages 6-12&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Active</td>
<td>16-17,000 steps</td>
<td>Up</td>
</tr>
<tr>
<td>Least Active</td>
<td>10,000 steps</td>
<td>Down</td>
</tr>
</tbody>
</table>

<sup>a</sup><sup>N=325</sup>  
<sup>b</sup><sup>N=386</sup>
## Youth at Risk

### BMI Levels by Activity

<table>
<thead>
<tr>
<th>Tertiles</th>
<th>Girls, Ages 6-12(^a)</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Active</td>
<td>15.5-20.5</td>
<td>5 pts up</td>
</tr>
<tr>
<td>Least Active</td>
<td>15.2-24.9</td>
<td>9.7 pts up</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tertiles</th>
<th>Boys, Ages 6-12(^b)</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Active</td>
<td>16.5-18.0</td>
<td>1.5 pts up</td>
</tr>
<tr>
<td>Least Active</td>
<td>15.9-24.9</td>
<td>9 pts up</td>
</tr>
</tbody>
</table>

\(^a\)N=325 \quad \(^b\)N=386
## Youth at Risk
**Girls - % Overweight**

<table>
<thead>
<tr>
<th>Country</th>
<th>Least Active</th>
<th>More Active</th>
<th>Most Active</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>48.0%</td>
<td>35.9%</td>
<td>22.8%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Sweden</td>
<td>23.3%</td>
<td>20.5%</td>
<td>6.5%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Australia</td>
<td>20.7%</td>
<td>12.5%</td>
<td>10.4%</td>
<td>14.4%</td>
</tr>
</tbody>
</table>

## Youth at Risk

### Boys - % Overweight*

<table>
<thead>
<tr>
<th>Country</th>
<th>Least Active</th>
<th>More Active</th>
<th>Most Active</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>46.7%</td>
<td>24.5%</td>
<td>18.8%</td>
<td>33.5%</td>
</tr>
<tr>
<td>Sweden</td>
<td>22.9%</td>
<td>18.0%</td>
<td>17.7%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Australia</td>
<td>18.8%</td>
<td>17.7%</td>
<td>10.9%</td>
<td>15.8%</td>
</tr>
</tbody>
</table>

Where Students Accumulate Activity

Physical Activity Assessment

• Many accurate & valid ways of evaluating physical activity
  – Self reports and recall instruments
  – Direct observation
  – Activity monitors
  – Pedometers
  – Heart Rate monitors

• Assessment reflects the values of the school
Physical Activity as the Outcome of Choice

- Regular activity for youth increases the probability of an active adult lifestyle (Raitakari, et al., 1994; Telama, et al., 1997)
- All youth have the capability to perform some type of activity
- Moderate activity offers health benefits similar to fitness
- Activity helps those who need it most - unskilled and obese youth
Active & Healthy Schools

- Promote physical activity
- Teach nutritional concepts
- Promote health for staff and faculty members
- Create an active and healthy school environment
- Integrate physical activity into the family setting
In summary...

- Fitness hasn’t solved the obesity issue, is difficult to measure, and genetically controlled.
- Skill development is important but we have few valid measurement tools and it is genetically limited.
- Academic integration is important but is not the focus of our profession.
But, every youngster can be more Active!

All Activity Counts - Make Every Move Worthwhile!