



Chapter 6

Testing Youngsters With Severe Disability

The Brockport Physical Fitness Test (BPFT) is appropriate for many youngsters with disability and unique needs related to physical fitness. However, it may be inappropriate for youngsters with severe disability for a variety of reasons. Often, these reasons include the inability of such students to perform field-based performance test items as described in the procedures presented in this manual. Specifically, these individuals may lack the level of physical fitness, motivation, understanding, or basic motor ability required to perform test items.

For such individuals, two alternative orientations for assessment are offered in this chapter. These orientations may yield information about physical activity or physical fitness and may most appropriately serve as the basis for individualized rather than health-related, criterion-referenced standards. However, their results may be helpful in designing programs that lead to acceptable levels of physical fitness or physical activity. The two orientations are alternate assessment and measurement of physical activity.

Alternate Assessment

Two types of alternate assessment recommended for youngsters with severe disability are task

analysis and rubrics. Task analysis breaks movements, skills, and activities into tasks and possibly subtasks. Tasks are associated with outcomes that can be targeted, learned, and measured. They represent points of focus in the performance of an activity. Ideally, they take an individual from a present level of performance through activities leading to a terminal objective. Task analyses can be designed in a variety of ways.

Using task analysis to develop and assess physical fitness in people with severe disability is not new. Jansma, Decker, Ersing, McCubbin, and Combs (1988) presented the Project Transition assessment system and contrasted it with the Data Based Gymnasium, I CAN, and Project MOBILITEE models. Readers are also referred to curriculum materials developed in connection with adapted sport programs.

In recent years, the field of adapted physical education has emphasized the use of ecological task analysis to best meet the measurement and instructional needs of students. Ecological task analysis considers the components of a skill or activity (traditional task analysis), as well as students' limitations and capabilities and the environment. For in-depth information about both traditional and ecological task analysis, see Winnick (2011).

A second alternative approach for assessing physical fitness is the use of rubrics, which are essentially rating scales wherein characteristics describing performance are matched to selected points on a scale. Although rubrics often lack the psychometric qualities associated with standardized tests, they lend themselves well to individualized assessment and can be designed to measure abilities at various points on an achievement continuum. Rubrics have also been called rating scales, scoring rubrics, analytic rating scales, and checklists. Detailed information about the development of rubrics is available in books addressing the teaching and assessment of physical education and adapted physical education.

Task analysis and rubrics are recommended in this manual for the purpose of leading youngsters toward acceptable levels of health-related physical fitness. Figure 6.1 and table 6.1 provide a sample task analysis and a sample rubric, respectively, for the isometric push-up test item of the BPFT.

Measurement of Physical Activity

Before procedures are recommended for measuring physical activity, it is important to remember that physical activity and physical fitness are separate but related concepts. Measurement of physical *fitness* involves measuring characteristics reflecting abilities that people possess or develop. The BPFT is used to measure physical fitness. Measurement of physical *activity* typically involves measuring a behavior reflecting energy expenditure. Examples of physical activity measures include heart rate responses to exercise;

caloric expenditure; and the frequency, intensity, type, and duration of activity.

Measurements of physical activity can be attained or estimated using a variety of strategies, including direct observation, self-report measures, mechanical and electronic monitoring, and physiological measures. These strategies are presented and discussed in a variety of sources (e.g., Freedson & Melanson, 1996; Welk & Wood, 2000). Devices that appear to hold promise for obtaining accurate measurements of physical activity in individuals with severe disability include pedometers, accelerometers, motion sensors, and heart rate monitors.

Teachers are encouraged to monitor the frequency, intensity, type, and duration of physical activity in youngsters with more severe disabilities and to develop strategies for increasing those levels. The Activitygram developed by the Cooper Institute (2010) is an effective computer-assisted tool for measuring and assessing the physical activity of children. It uses a physical activity recall approach for data collection. Increases in physical activity often lead to increases in physical fitness, even if fitness is difficult to assess validly.

Because physical fitness and physical activity may have independent effects on health status (Blair, Kohl, Paffenbarger, Clark, Cooper, & Gibbons, 1990), different standards may also be needed and recommended for each. The U.S. Department of Health and Human Services (2008) recommends that children and adolescents do 60 minutes or more of daily physical activity, which should include aerobic, muscle-strengthening, and bone-strengthening activities. The agency encourages participation in activities that are age appropriate, enjoyable, and varied.

Sample Task Analysis for an Isometric Push-Up

Objective

To execute an isometric push-up correctly for 3 seconds.

Directions

Circle the minimal level of assistance an individual requires when correctly performing a task. Total each column. Total the column scores and enter the total score in the summary section. Determine the score for percentage of independence by dividing the scores achieved by the possible scores. For the product score, record the amount of time for which the position is held.

Isometric push-up	IND	PPA	TPA
1. Lie facedown.	3	2	1
2. Place hands under shoulders.	3	2	1
3. Place legs straight, slightly apart, and parallel to the floor.	3	2	1
4. Tuck toes under feet.	3	2	1
5. Extend arms while body is in a straight line.	3	2	1
6. Hold position for 3 seconds.	3	2	1
Sum of column scores	6	4	2
Key to levels of assistance: IND = independent (able to perform the task without assistance) PPA = partial physical assistance (needs some assistance to perform the task) TPA = total physical assistance (needs total assistance to perform the task)			
SUMMARY			
Total score achieved	12		
Total score possible	18		
% independent score	67		
Product score (position held)	3 seconds		

Adapted, by permission, from L.J. Lieberman and C. Houston-Wilson, 2009, *Strategies for inclusion: A handbook for physical educators*, 2nd ed. (Champaign, IL: Human Kinetics), 35.

Figure 6.1 Sample task analysis.

Table 6.1 Rubric for Isometric Push-Up

Level of performance	Characteristic behaviors
Mastery	Can perform the isometric push-up with proper mechanics and is able to hold without assistance for 25 seconds
Intermediate	Can perform the isometric push-up without physical assistance for 15 seconds
Intermediate/beginner	Can perform the isometric push-up with some physical assistance for 5 seconds
Beginner	Can perform the correct position with physical assistance for 3 seconds

