Assessment Practices in Adapted Physical Education

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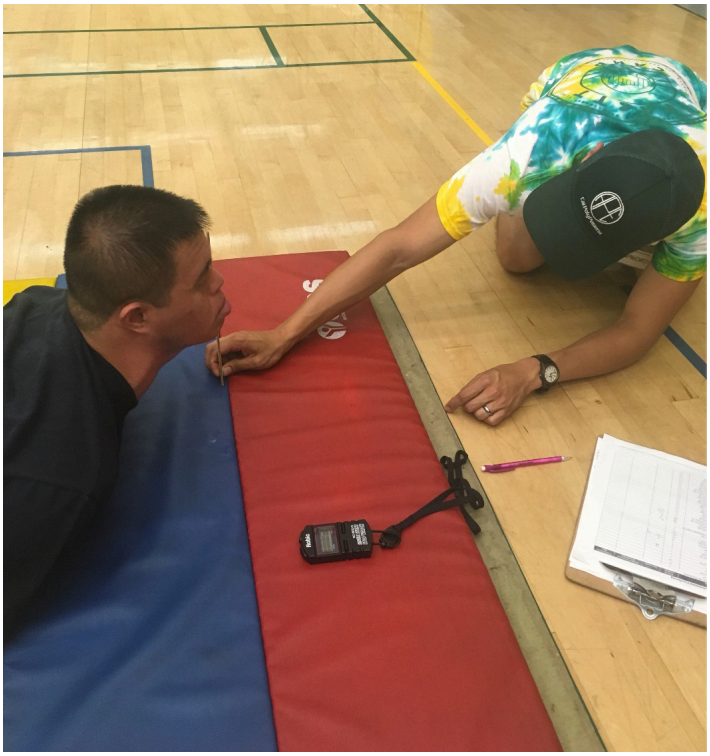
Abstract

Determining current motor assessment practices used in adapted physical education (APE) settings is necessary to provide information about appropriate application for students with disabilities, including how it may affect student placement, and progression of motor skills. However, there is very little research to examine the most appropriate and widely used assessment instruments by APE teachers. The purpose of this study was to investigate motor assessments used and determinants for selecting assessments by APE teachers in the United States. Purposive sampling was used to recruit 146 APE teachers from across the United States who are currently assessing students with disabilities. The *APE Assessment Questionnaire,* designed to determine which assessment instruments are being used nationally by APE teachers, consisted of four sections: (a) participant demographics, (b) school demographics, (c) assessment questions, and (d) professional development. Mann Whitney U nonparametric statistics and frequency analysis was used to determine which assessment instruments are being used by APE teachers. Results indicated the *Test of Gross Motor Development-2* (50%), *Adapted Physical Education Assessment Scale* (42%), and *Competency Testing for Adapted Physical Education* (39%) were the most frequently used motor assessments nationally by APE teachers. It is necessary for APE teachers to be exposed to a variety and the most appropriate assessments for students with disabilities in physical education environments. Additional information gathered from the study provides current gaps within the assessment tools available to APE teachers.

Keywords: assessment, physical education, adapted physical education, motor

Introduction

The Individuals with Disabilities Education Act (IDEA, 2004) had a major impact on the assessment procedures of students with disabilities. As outlined in IDEA (300.304 Evaluation Procedures), assessment must adhere to the following: (a) administered by trained personnel using instructions provided by their producer, (b) administered in student's primary language/preferred method of communication, (c) no single assessment is used as a sole criterion for determining an appropriate educational program, (d) evaluation is made by a multidisciplinary team, and (e) nondiscriminatory testing and objective placement of the child. The IDEA also mandates that it is necessary to use valid and reliable assessments (§300.304 Evaluation Procedures), unless the Individualized Education Program (IEP) team determines an alternative assessment is more appropriate. Assessments



that have been empirically researched to establish validity (i.e., measures what it is supposed to measure) and reliability (i.e., yields the same results on repeated trials) are called standardized. Non-standardized assessments (i.e., informal) cannot provide specific data (e.g., gross motor quotient, age equivalencies) that can be definitively used to determine eligibility and placement needs (Bittner et al., 2020).

Federal legislation (i.e., IDEA) considers students eligible for special education, including physical education, if they are identified as having 1 of the 13 disabilities identified in the law and who demonstrates an educational need. The Society of Health and Physical Education (SHAPE) Position Statement for *Eligibility Criteria for APE Services* (2018) recommends that students demonstrate a need for physical education services if their comprehensive score is 1.5 standard deviations below the mean on a norm-referenced test (i.e., comparing scores against the performance results of a statistically selected group) or at least two years below age level on criterion-referenced tests (i.e., measure student performance against a fixed set of predetermined criteria). It should be noted that school-age children who have disabilities, but do not qualify for services under IDEA, may also demonstrate need for adapted physical education (APE) through Section 504 of the Rehabilitation Act of 1973.

The IDEA identifies physical education as a component of special education that provides for an equitable education experience for students ages 3 to 21 that is a free, appropriate, public education in the least restrictive environment. IDEA (§300.39 [b][2]) defines physical education as a direct service, which includes instruction in (a) physical and motor fitness, (b) fundamental motor skills and patterns, and (c) skills in aquatics, dance and individual and group games and sports (including intramurals and lifetime sports). Students with disabilities must be placed in the least restrictive environment, which is the setting where they can safely and successfully engage in the general physical education curriculum, as well as on their individualized objectives, as outlined in their IEP (IDEA, 2004). APE is physical education designed to meet the unique needs of the student with a disability in the least restrictive environment (Columna et al., 2010). Physical education can take place in a self-contained APE class, an inclusive class, a combination of both, or in the community. The decision to place a student with a disability into an APE class in terms of placement needs to be the end result of the referral, screening, and assessment by a multidisciplinary team (Holland, 1992). Placement is determined based on where the student will learn best and be most successful. Placement should not be confused with the service provided. The student first will demonstrate need for APE services and then the multidisciplinary IEP team will determine the best placement or setting for the student to receive the APE services.

Determining motor performance is multifaceted; therefore, tests used as part of this process should measure the areas of physical education listed in the IDEA definition of physical education. Assessment in physical education is a complex process that focuses on (a) identifying whether or not a student demonstrates a need and/or is eligible for APE services, (b) developing appropriate goals, (c) implementing appropriate instructional activities, and (d) determining the most appropriate placement for students in physical education (Horvat et al., 2019; SHAPE Position Statement, 2018). One potential challenge when assessing students for APE services is that there are a plethora of assessment options available. However, some assessments only pertain to certain content skill areas (e.g., fundamental motor skills, fitness), leaving missing areas that are covered within the physical education curriculum or are limited based upon the age range and appropriateness of the assessment test. Regardless, assessment choices need to be justifiable for IEP meetings.

Determining current assessment practices used in APE settings is necessary to provide valuable information about appropriate application for students with disabilities and how the assessment results might affect student learning in APE (Redelius & Hay, 2010). There have been limited number of studies regarding motor assessments used by APE teachers at the state (e.g., Texas [Johnson et al., 2017; Turney, 2000], Wisconsin [Holland, 1992]) and national level (e.g., Jansma & Decker, 1990 Project Least Restrictive Environment Usage in Physical Education; Ulrich, *unpublished* 1988). Overall, at the national level, assessment choices by APE teachers have changed within the last several decades. Previously, Ulrich (1988) and Holland (1990) indicated the *Bruininks-Oseretsky Test of Motor Proficiency* to be the most prevalently used assessment. However, more recent state-specific results reported by Johnson et al. (2017) and Turney (2000), the *Test of Gross Motor Development* (Ulrich, 2019) continues to remain the most widely utilized assessment. The purpose of this study was to investigate motor assessments used and determinants for selecting assessments by APE teachers in the United States.

Method

Participants

After obtaining university institutional review board approval of this investigation, snowball sampling was used to recruit APE teachers who are currently assessing students with disabilities in the United States. Participants were recruited from the following sources (a) National APE Conference, (b) Certified Adapted Physical Educator (CAPE) listserv, and (c) social media.

The APE Assessment Questionnaire

The *APE Assessment Questionnaire* was designed to determine which assessment instruments are being used nationally by APE teachers and consisted of four sections (a) partici-

pant demographics, (b) school demographics, (c) assessment questions, and (d) professional development. The questionnaire was evaluated by five APE specialists who are currently APE teachers or faculty members at a university and have more than 10 years of experience related to APE to establish face/content validity. Participant demographic questions included participant characteristics (e.g., gender, educational level, job description). School demographic questions entailed size of school, number of schools serviced, and caseload. Assessment instrument questions included which assessments were being used by APE teachers by grade level and the rationale for selecting specific assessments. Finally, professional development questions asked about assessment training.

Survey Administration

The *APE Assessment Questionnaire* was distributed through a link to the Qualtrics online survey database, with a follow-up email sent two weeks later. Participants anonymously completed the online questionnaire at a location of their choice. The total time to complete the survey in one session was less than 15 min. Inclusion criteria were ensured through self-reported answers on the questionnaire consisting of the following (a) currently assessing students with disabilities in the United States and (b) 21 years or older. These questions served to ensure an educational assessment background and experience level by participants.

Data Analysis

Mann Whitney U nonparametric statistics and frequency analysis was used to determine which assessment instruments were used by APE teachers. A probability level of $p < .05$ was used to determine statistical significance for all analyses using the Statistical Package for Social Sciences (SPSS) v.25 (IBM Inc., Armonk, NY). The data were also analyzed to determine the demographic characteristics of participants.

Results

Demographics

Individuals who participated in the study included 146 APE teachers in the United States. Sixteen states were represented, with 42% from California (60), 19% from Texas (28), and 17% from Maryland (24). See Table 1 for the age range of APE teachers.

Participants were 75% female (109) and 25% male (36). Twenty-four percent held a bachelor's degree (35), 70% had a master's degree (102), and 6% had a doctorate (8). Of the partcipants, 64% (92) had an APE teaching credential, 29% (42) did not, and 8% (11) were unsure. APE teachers had a variety of experience, with 14% being in the field of physical education or APE 3 years or less (21), 27% (40) teaching 4 to 9 years, and 58% (85) teaching 10 or more years. A majority, 67% (90), of APE teachers taught students with disabilities 3 to 21 years of age. Other APE teachers had a caseload of pre-K/elementary students 16% (21) or elementary and middle school students only 14% (19).

Seventy-two percent indicated they had specific state or school district criteria to demonstrate need for APE. Examples included: 1.5 standard deviation below the mean, below 7th percentile, or 30% behind chronological age. A majority of the APE teachers, 88% (104), determined which motor assessments would be used for students on their caseload. In others districts, the APE Coordinator (11%; $n = 9$) or the School District (2%; $n = 2$) determined the assessment. Most (i.e., 96%) APE teachers collaborated when selecting, performaing, or writing results of a motor assessment. The most often cited professional to collaborate with was the general physical educator. See Table 2 for assessment collaboration with personnel. APE teachers could choose more than one professional in which they collaborated. The choice of "other" was primarily parent/family, classroom teacher, or case carrier.

Table 1
Age of APE Teachers

Age	Percentage	Count
20 to 30 Years	19%	28
31 to 40 Years	28%	41
41 to 50 Years	18%	26
51 to 60 Years	25%	37
61 to 70 Years	10%	14

Table 2
Assessment Collaboration

Personnel	Percentage	Count
General Physical Education Teacher	28%	83
Physical Therapist	24%	70
Occupational Therapist	16%	46
Speech and Language Pathologist	6%	19
Preschool Assessment Team	6%	17
Music Therapist	1%	2
Other	16%	46
Do not collaborate	4%	12

Table 3
Frequency of Assessment

	Formal		Informal	
Frequency	Percentage	Count	Percentage	Count
Weekly	8%	9	62%	71
Monthly	21%	23	17%	20
Quarterly/ Marking Period	33%	36	13%	15
End of Unit	4%	4	4%	5
Annually	35%	38	4%	4

Table 4
Importance of Instrument Criteria

Instrument Criteria	Likert Scale			
	Very Important	Important	Slightly Important	Not Important
Validity	75%	21%	2%	0%
Reliability	73%	22%	1%	0%
Age Range	58%	34%	4%	1%
Ease of Administration	45%	38%	4%	1%
Time to Administer	32%	40%	5%	4%
Equipment	31%	35%	11%	3%
Disability Specific	25%	34%	10%	9%
Environment Needed	24%	42%	7%	5%

APE teachers primarily conducted formal standardized testing annually 35% (38) and informal testing weekly 62% (71). See Table 3 for frequency of formal and informal assessment practices.

APE teachers were asked to determine how important instrument criteria was when selecting an assessment tool for APE assessment purpose. The top ranked items for selecting a motor assessment instrument were validity (75%) and reliability (73%). See Table 4 for instrument criteria.

Survey participants cited motor assessment instruments most frequently used by age (i.e., preschool, elementary, middle school, high school, high needs of support). The preschool motor assessments reported by APE teachers nationally used most frequently were *Test of Gross Motor Development-2* (TGMD-2; 32%), *Curriculum, Assessment, Resources, Evaluation* (CARE-R; 19%), and *Brigance Diagnostic Inventory of Early Development* (17%). The motor assessments used most frequently for elementary school students were *TGMD-2* (58%), *Adapted Physical Education Assessment Scale* (APEAS; 20%), and *Competency Testing for Adapted Physical Education* (CTAPE; 13%). For middle school students, the assessments used most frequently were *APEAS* (28%) and *CTAPE* (26%). For high school students, the most frequently used motor assessments were also *APEAS* (21%) and *CTAPE* (21%). For students with high needs of support (i.e., severe or profound disabilities), the *Kounas Assessment of Limited Mobility Students* (KALMS; 20%) and *CARE-R* (20%) were the most frequently used motor assessments. When asked to rank motor assessments by their overall frequency of use, APE teachers chose *TGMD-2* (50%), *APEAS* (42%), and *CTAPE* (39%).

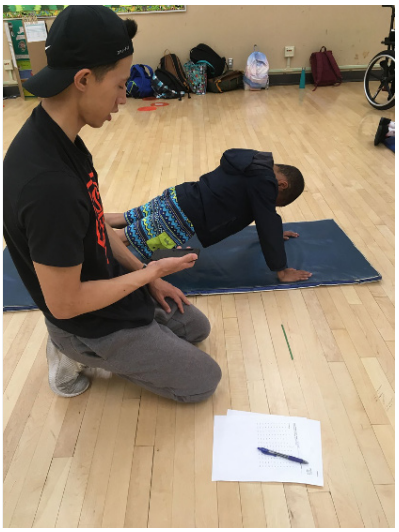
Teachers with and without an APE state credential were compared regarding assessment choices for students with high needs of support. Those with an APE state credential were more likely to select the *CARE-R* compared to those without a state credential who were more likely to select *Project MOBILITEE* (p = .012). APE teachers with and without the national Certification for Adapted Physical Education (CAPE) were compared to determine most frequently used assessment. Teachers who were CAPE certified were more likely to select the TGMD assessment. Teachers without the CAPE certification were more likely to select the APEAS for most frequently used assessment (p = .039).

APE teachers reported how many assessments (i.e., formal, informal) were used to complete a student assessment report with 57% (60) using two, 26% (27) using only one, and 17% (18) using three or more assessments. APE teachers indicated 51% provided motor assessments in the child's native language or preferred mode of communication, 40% sometimes provided, and 9% did not.

Motor assessment training was provided by 44% (47) of school districts. Sixty-nine percent (74) of school districts encouraged attendance at conferences pertaining to APE, but only 54% (58) of school districts provided financial support to attend. Despite this limitation, 60% (65) of APE teachers had attended a conference or in-service to update or renew motor assessment skills within the last three years.

Discussion

Accurate assessment is critical to determine elegibility, appropriate placement, and program development for students with disabilities. The purpose of this study was to investigate motor assessments used and determinants for selecting assessments by APE teachers in the United States. Based on the results of this investigation, the *TGMD* and *APEAS* were the two most commonly used assessment tests. The authors believe that the *TGMD* continues to be the test of choice because of (a) short administration time, (b) limited equipment and space needs, (c) familiarity, and (d) standardization criteria (i.e., valid and reliable). Further, the *TGMD* includes specifically selected motor skills that can be generalized to many different activities and games in physical education. The *TGMD-2* has been updated to the *TGMD-3* (Ulrich, 2019) in part to ensure that skills being assessed are current and students are appropriately qualified for APE services. One limitation is that the *TGMD* is only standardized for ambulatory students between the ages of 3 years 0 months to 10 years 11 months and only assesses fundamental motor skills (i.e., ball skills, locomotor skills) in a very closed setting, which is different from how a student may perform in a gymnasium or open



field with multiple peers and sensory implications. Therefore, it is important to perform observations of students in their physical education class and discuss any strengths or areas of concern that a student may be demonstrating to the physical educator and IEP team.

Of the APE teachers surveyed, validity and reliability were the most important factors for selecting motor assessments. However, *APEAS* was the second most used assessment overall, which is not currently a valid or reliable assessment (*note*. SHAPE is working to establish validity and reliability statistics). Also of interest, was that APE teachers with CAPE certification were more likely to use the *TGMD* (which is a valid/reliable assessment) compared to the *APEAS* which is not. This may indicate that the training required for CAPE certified professionals helps to further educate APE teachers of types of assessment. If APE teachers choose to use *APEAS*, then they should be sure to include another valid and reliable motor assessment (i.e., standardized) as part of the comprehensive battery of test items for the APE evaluation.

A further issue in motor assessment is the limited number of standardized assessment instruments. For example, the top assessment used for middle school/high school students was APEAS, which is not standardized. In addition, for students with high intensity needs (i.e., severe and profound disabilities, multiple disabilites) there were 13 different options selected by APE teachers when asked to choose the instrument most often used for assessment of students with high needs of support. Only 2 of the 13 assessments mentioned were standardized (i.e., *TGMD, Brigance*) for this population. It is important to remember the IDEA mandates that it is necessary to use a standardized assessment, unless the IEP team determines an alternative assessment is more appropriate (§300.304 Evaluation Procedures).

Of additional concern were that not all APE teachers were following IDEA mandates. For example, 26% self-reported that they were only using one assessment. IDEA mandates no single data source is sufficient, instead a variety of assessment tools and strategies (§300.503) must be used. Also of concern was that APE teachers self-reported they did not (9%) or sometimes (40%) provided motor assessments in the child's native language or preferred mode of communication, as mandated in IDEA (2004; §300.29). APE teachers need to be aware, and follow, the IDEA mandates to best assess and service students with disabilities.

IDEA section §300.29 states:

a. Native language, when used with respect to an individual who is limited English proficient, means the following:
    1. The language normally used by that individual, or, in the case of a child, the language normally used by the parents of the child, except as provided in paragraph (a)(2) of this section.
    2. In all direct contact with a child (including evaluation of the child), the language normally used by the child in the home or learning environment.
b. For an individual with deafness or blindness, or for an individual with no written language, the mode of communication is that normally used by the individual (such as sign language, Braille, or oral communication).

Finally, professional development in the form of motor assessment is not being conducted by a majority of school districts (56%) and most districts (54%) are not providing financial support to attend conferences. Therefore, APE teachers may have to travel a distance to attend an APE conference that has expertise in motor assessment and pay out of pocket to attend. Other alternatives may include social media (e.g., webinars, livestreaming) to feel connected within the profession and to learn new techniques and best assessment practices. Despite these issues, 60% of APE teachers had attended a conference or in-service to update or renew motor assessment skills within the past three years. Thus, there positively seems to be buy-in from a majority of APE teachers to continuously update their skill set regarding motor assessments.

Limitations of this investigation include a large percent of participants (i.e., 42%) were from California. With the *APEAS* originating in Los Angeles Unified School District, it is possible a larger-than-average use of *APEAS* is represented in this national survey. In addition, 77% of participants were from three states (i.e., California, Maryland, Texas).

Thirty-seven percent of participants did not have a state certification in APE. This may be due to only 13 states having an APE certification (Wetzel, 2007; Wrightslaw, 2019) and may account for the 20% of participants having not taken a motor assessment course at the university level. Furthermore, qualitative data could provide more information about factors that influence assessment choice and that future research could include a qualitative component to triangulate data.

Conclusion

It is necessary for APE teachers to be exposed to a variety and the most appropriate assessments (e.g., age, developmentally appropriate) for students with disabilities in physical education environments to determine (a) present level of academic achievement and functional performance, (b) appropriate placement decisions, (c) progress throughout activities, lessons, or units, (d) appropriate feedback, (e) IEP goal/benchmark progress, and (f) program effectiveness (Hodge et al., 2012). Suggestions for future studies would include a national survey with a more in-depth investigation related to why teachers selected assessments, as well as determining APE teachers' perceptions on the effectiveness of these assessments, and what student characteristics APE teachers may focus on when selecting appropriate motor assessments.

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