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8

The Role of Assessment in Teaching Games for Understanding

Judith L. Oslin

The role of assessment in TGfU is that it ensures that students develop the skillfulness, competence, and confidence needed to play games.

As a teacher and teacher educator, I have been constantly challenged to find resources for designing games, practice drills, and assessments that are aligned with the Teaching Games for Understanding (TGfU) approach. Most texts are aligned with a more technical or skill-based approach and focus primarily on skill development, often separate from the game context. The purpose of this chapter is to describe components or aspects of games that ought to be considered when selecting and designing student assessments. The intent here is not to describe how to assess, because resources are available to do this, but rather to discuss what ought to be assessed and why. The chapter will begin with a discussion about the importance of assessment and some issues related to traditional methods of assessing skills.

I would like to begin by stating that I believe games are worth teaching and learning. I have experienced the excitement of many students who, for perhaps the very first time in their lives, are competently and confidently participating in a game. I believe in the value of games as vehicles for promoting healthy, active lifestyles and social change. However, this can only come about if we are intentional about how we teach

games and if we consider what we want students to understand about games and game play.

Importance of Assessment

I recently had the privilege of discussing assessment with one of my colleagues, who is considered by many to be an expert on assessment, Dr. Deborah Tannehill. (She was one of the authors of the Standards for Physical Education used in the United States, and coordinator of the National Association of Sport and Physical Education Assessment Series). She stated, "If it's worth teaching and learning, it's worth assessing." If we choose to teach via TGfU, our methods of assessment must be aligned with what we teach and how we teach it. According to Dr. Tannehill, teachers should

> Tell students what they are going to learn and why it is important. Teach them what you told them they would learn, and assess them on what you taught them and what they've been practicing, and that [helps students] make the whole connection. (personal communication, July 26, 2001)

If we want students to learn how to play games, we must assess game performance. Unfortunately, most of what we know about assessment comes in the form of skill tests, which tend to measure only one component of game play—skill execution. In addition, we often use product measures from skill tests to measure or to infer the degree to which students can play the game. Hence, the recurring question from students when performing skill drills and skill tests: Why are we doing this? If students are asking this question, they obviously have not made the connection between what they are doing and what the teacher wants them to learn or do (i.e., play a game).

"If it's worth teaching and learning, it's worth assessing."

"If we want students to learn how to play games, we must assess game performance."

Problems With Assessment

Much of the difficulty in converting our teaching and assessing from a technical or skill-based approach to a TGfU approach, I believe, lies in many of the faulty assumptions we have made about skill and skill development. As most K-12 curricula suggest, we have assumed that we can teach—and children can learn—the 150 or more sport skills needed to play, on average, 30 to 40 different games, in classes that are scheduled

once per week for 30 minutes, with 25 to 30 children per class. Even if you are lucky enough to teach physical education daily for 45 minutes, this is a daunting and impossible task, especially when considering how long it takes to develop skills and the depth and breadth of experiences needed to do so.

Another problem in converting teachers' practice relates to the form of the game we expect students to learn. Is it necessary to teach or learn 5v5 basketball, 6v6 volleyball, 11v11 soccer, and so on? If we consider recreation leagues, both public and private, we see 3v3 basketball, 2v2 volleyball, 5v5 indoor softball, and 7v7 indoor soccer to accommodate smaller numbers of players as well as to adjust to the available facilities. Many of our current practices have evolved from the notion that physical education is a "feeder" or training camp for school athletic teams. However, if our goal in physical education is to develop lifelong participants, we should reconsider the types of games and activities we believe are best for our students to learn as well as the constraints of our K-12 curricula.

Many physical educators also adhere to the assumption that you cannot play the game until you learn the skills. As a recreational participant in an unofficial golf league and softball "D-league," I can assure you that we do not always have the skills, but we play the game nonetheless. This assumption implies not only that an optimum level of skill is necessary to play a game, but also that the development of skill can and should occur outside of "the game."

I believe it is faulty to assume that students can learn "the skill" outside of game play and that skills performed in drills somehow transfer to the game.

I believe it is faulty to assume that students can learn "the skill" outside of game play and that skills performed in drills somehow transfer to the game. We are constrained here, and I mean no offense, by our motor development mentality. We have an image of what "the skill" should look like at the various stages of development, but we fail to consider that "form follows function."[1] That is, the form the skill takes is dependent on the goal, or function, of the task.

Developing Skillfulness

When a player or student uses a skill in a game, she modifies the skill to accommodate the particular game situation. Allison, Pissanos, and Turner (2000) referred to this as skillfulness. The form of the movement shifts as the game shifts, as the opponent changes, and as conditions change. This does not mean we should let children play the elite form of the game, but rather we should design games children can play. By doing so, we allow them to develop skillfulness and confidence in their ability

TGfU situates skill within the context of the game, where it is shaped and reshaped depending on a number of factors related to the game or task, the learner, and the context.

to be successful games players. This is the basic premise of TGfU (Bunker & Thorpe, 1982). TGfU situates skill within the context of the game, where it is shaped and reshaped depending on a number of factors related to the game or task, the learner, and the context.

Because the game is the focal point of TGfU, it is important to look at the game, the nature of games, or both, to better understand not only how to teach games but how to assess them. First, let us consider how a forearm pass in volleyball is generally taught. After the teacher reviews the important elements of the skill, students typically perform one or two practice tasks, such as a forearm pass to self. To successfully perform this task, the student must position his body in an upright posture and contact the ball at about shoulder or eye level. During a forearm pass in a game, the body position is low, bent at the waist; contact is below the waist and ahead of the knees, and requires very little if any arm movement. This is a very different movement than the one required in the forearm pass to self, meaning that a pass to self is not likely to transfer to game play as effectively as a forearm pass to a partner in a gamelike context. To develop skillfulness in students, teachers should select or design tasks, games, and assessments that require the same form of the movement needed to be successful in game play. Skillfulness goes beyond the execution of a particular skill within the game; it includes other components that relate to game play, such as support, movement off the ball, defensive actions, and decision making.

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Considering Contextual Elements

Outside of the performance elements of game play, the teacher should also consider contextual elements because these can make assessing game performance difficult. First, games are socially constructed. Men have constructed most of the games that hold prominence in our society, and as others (particularly women and children) play them, they modify rules and equipment to accommodate their own characteristics

and interests. Games are constructed and reconstructed all the time. Consider baseball, for example, as it is played in a league versus at a family picnic or neighborhood pickup game. Or, consider just one kid pitching a ball to a wall in a schoolyard, with game events and highlights running through his head as he pitches a nine-inning game. The point here is that physical educators need to better understand the impact that the social context has on game play if they want to design and assess games that are meaningful for all students.

Games are competitive by design, intended to test one's physical abilities against another's. Of course, this also involves a contest of cognitive abilities, such as tactical maneuvering, which is as important as physical ability or prowess. Tactics and strategy are important elements of games; they dictate how and when we use skill and what skills we use in the game. Tactical awareness can give one player an advantage over another, even another considered more skilled. Physical educators ought to consider the nature of competition and competitors, the place of competition within physical education, and the capacity of competitive environments to motivate some to play and to deter others from playing altogether.

Tactics and strategy are important elements of games; they dictate how and when we use skill and what skills we use in the game.

Games are interactive. Interactions occur among teammates, opponents, officials, and even sometimes spectators. These interactions have implications for both skill and game performance. Consider, for example, a game between the first- and second-place team, with heightened anxiety and motivation to win, as well as with the spirited banter and hype that often accompanies such games. The interactions among players in this situation will likely be much more intense than that in a game between the first- and last-place teams.

Games are governed by rules. Rules not only regulate game play, but also dictate or define the skills needed to play the game. We often consider only the regulatory function of rules, but rules do much more. According to Torres (2000), "Rules . . . specify what has to be achieved as well as the spatio-temporal limitations under which the goal has to be pursued, the required equipment, and the evaluation system that converts achievements to a score" (p. 82). For example, specific rules define how to move the ball between players and how to shoot on goal. Thus, the rules of the game not only regulate play, court dimensions, ball size, and so on, but also dictate the skills needed to play the game. These aspects of games, and others, influence the game and the form the skills take within game contexts.

Same Class, Different Games

In physical education classes, the same game is commonly interpreted differently by different groups of children. For example, during a recent visit to a middle school, I observed a lesson in which the children were instructed to play a half-court game of basketball. The players in one game restarted play from half-court, enforced violations, and frequently shot off the pass. In a game on the adjacent court, players chose to restart play from the baseline, did not call fouls or violations, and frequently shot off the dribble. As a teacher observing these games, I would ask myself whether the rule changes constrained or accommodated the goal or objective of the lesson, and then, if necessary, I would change or add conditions to help students achieve the lesson objective. In the example of the students who chose to shoot off the dribble, I could take away the dribble because its use discouraged movement off the ball.

In the basketball example, the game and lesson modifications imposed by the students, whether intentional or unintentional, compromised the lesson objectives. This emphasizes the need to hold students accountable for performing tasks as directed. As teachers, we need to be as intentional about monitoring tasks (Hastie, 2000; Schuldheisz & van der Mars, 2001) as we are about designing games. Experts on effective teaching (e.g., Graham, Holt-Hale, & Parker, 2001; Siedentop & Tannehill, 2000) have recommended a number of strategies for holding students accountable for completing tasks as directed by the teacher. For example, as the game is being played or as an assessment task is being performed, students should be closely monitored to ensure that they are working to achieve the goal of the assigned task.

Question-and-answer segments can also be used to assess what students understand about a task, but the questions must be aligned with the goal of the task or game if they are to be effective (Mitchell, Oslin, & Griffin, 2003). Questions should focus on what is happening, what should happen in a particular situation, or why students are doing what they are doing. These focused questions help the teacher determine the degree to which students are appropriately engaged, are able to achieve lesson objectives, and view tasks and assessments as relevant. Teachers should also "check for understanding" (Graham, 2000) following an instructional segment to determine whether students understand the practice, game, or assessment task. In addition, at the end of the lesson, closure provides the

Questions should focus on what is happening, what should happen in a particular situation, or why students are doing what they are doing.

teacher and students the opportunity to review task and lesson objectives (Siedentop & Tannehill, 2000).

Formal Methods of Assessment

Besides informal methods, there are formal methods of assessing both individual and team performance. For example, the Game Performance Assessment Instrument (GPAI; Oslin, Mitchell, & Griffin, 1998; Mitchell & Oslin, 1999) and the Team Sport Assessment Procedure (TSAP; Gréhaigne, Godbout, & Bouthier, 1997, 2000) allow for formal assessment of various components of game play. Both instruments have been shown to provide valid and reliable measures of game performance.

The GPAI contains seven basic components (see table 8.1) that apply across all categories of game play (i.e., invasion, net/wall, striking/fielding, and target). For example, the first five components apply to softball, with *base* referring to the starting position of each player before the ball is pitched, and *adjust* being a shift in that base position, such as when the outfield shifts for a left-handed batter. The last five components relate more specifically to invasion games. Each component can be assessed independently or in combination with other components. For example, decision making (i.e., the choice to shoot, pass, or dribble) can be assessed while also assessing skill execution (i.e., shooting form or outcome). The scores of each component (e.g., total frequency of appropriate decisions, appropriate support moves, or efficient skill execution) can

Table 8.1 GPAI Components of Game Play

Components	Definitions
Base	Appropriate return of performer to a "home" or "recovery" position between skill attempts
Adjust	Movement of performer, either offensively or defensively, as required by the flow of the game
Decisions made	Making appropriate choices about what to do with the ball (or object) during the game
Skill execution	Efficient performance of selected skills
Support	Off-the-ball movement to a position to receive a pass (or throw)
Cover	Defensive support for player making a play on the ball, or moving to the ball (or object)
Guard/mark	Defending an opponent who may or may not have the ball (or object)

Table 8.2 Formulas for Calculating GPAI Outcome Variables

Outcome variables	Calculation
Game involvement	(Total appropriate responses) + (number of efficient skill executions) + (number of inefficient skill executions) + (number of inappropriate decisions made)
Decisions made index (DMI)	(Number of appropriate decisions made) / (number of inappropriate decisions made)
Skill execution index (SEI)	(Number of efficient skill executions) / (number of inefficient skill executions)
Support index (SI)	(Number of appropriate supporting movements) / (number of inappropriate supporting movements)
Game performance	(DMI + SEI + SI) / 3

Measuring a variety of game performance components, beyond skill performance, provides an objective measure of participation, rewarding students who engage in game play both on and off the ball.

also be used to calculate particular game performance indicators, such as a game involvement score, decisions made index, skill execution index, support index, and an overall game performance score (see table 8.2).

The TSAP focuses on two fundamental aspects of game play: (1) gaining possession of the ball (conquering [tackling/intercepting] the ball, receiving a pass from a teammate in the course of play) and (2) disposing of the ball once the player has possession (passing the ball off, playing an offensive ball [an assist, for example], or taking a shot on goal). The TSAP combines volume of play and the efficiency index to compute team performance (see tables 8.3 and 8.4)—or what the authors (Gréhaigne, Godbout, & Bouthier, 1997) referred to as "rapport of strength."

Measuring a variety of game performance components, beyond skill performance, provides an objective measure of participation, rewarding students who engage in game play both on and off the ball. Students who have not had many opportunities to develop skill can be rewarded for moving into position to receive a pass (support play), making good decisions (when to pass, when to shoot), or appropriately marking a player to keep her from scoring or gaining possession of the ball.

Besides the GPAI and TSAP, other measures can be useful for assessing player and team performance during game play. Player and team statistics are frequently used in elite and professional sport as a way of describing

Table 8.3 TSAP Components of Game Play

Components	Definitions
Gaining possession of the ball	
-Conquering the ball (CB)	Intercepting, stealing the ball from the opponent, or recapturing the ball after an unsuccessful shot on goal or near-loss to the other team
-Receiving the ball (RB)	Receiving the ball from a partner and not immediately losing control of it
Disposing of the ball	
-Playing a neutral ball (NB)	Passing the ball to a partner, or any pass that does not put the other team in jeopardy
-Losing the ball (LB)	Losing the ball to the other team without having scored a goal
-Playing an offensive ball (OB)	Passing the ball to a partner, thus pressuring the other team, which most often leads to a shot on goal
-Executing a successful shot (SS)	Scoring or maintaining possession of the ball following the execution of a shot

Modified from Grehaigne, Godbout, & Bouthier, 1997.

Table 8.4 Formulas for Calculating TSAP Outcome Variables

Outcome variables	Calculation
Number of attack balls (AB)	(Total number of OB) + (total number of SS)
Volume of play (PB)	(Total number of CB) + (total number of RB)
Efficiency index (EI)	(CB + AB) / (10 + LB) or (CB + OB + SS) / (10 + LB)
Performance score (PS)	Determined via a "nomogram," which uses the EI scale, VP scale, and PS scale (see Grehaigne, Godbout, & Bouthier, 1997)

OB = Playing an offensive ball, SS = Executing a successful shot, CB = Conquering the ball, RB = Receiving the ball, LB = Losing the ball, VP = Volume of play

the success of a player or team, such as batting averages, fielding percentages and assists. Various combinations of measures can be used to assign student grades. For example, some or all of the components of the GPAI or TSAP, a variety of player and team stats, short one-minute quizzes (Griffin & Oslin, 1990), and perhaps a formal examination can be useful for

assessing students and subsequently assigning grades. A combination of peer, self-, and teacher assessments are useful for determining individual and team performance as well as assigning student grades.

Conclusion

Formal measures, combined with informal measures, allow for ongoing assessment and can help the teacher provide a clear message that the intent of physical education is to improve performance. Physical educators are "architects" of task design. They must create conditioned games and assessments that drive the skills and competencies they know students should learn to be successful games players. The role of assessment in TGfU is that it ensures that students develop the skillfulness and the competence and confidence needed to play games—games that are worth learning and worth playing long after students leave physical education programs.

Discussion Questions

1. How have we come to believe that we can't play the game until we have the skill? What are the implications of this belief on games teaching in physical education?
2. What components of game play, besides skills, could be considered when assessing game performance? What would be the value of using multiple performance measures for the purposes of assigning student grades?
3. How does teaching for skillfulness differ from teaching for skill development?
4. How might a game involvement score serve as a measure of student participation?

Endnote

1. Louis H. Sullivan served as mentor to Frank Lloyd Wright and was credited for coining the phrase "form ever follows function" (Sullivan & Wright, 1956).

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