

- Jewett, A.E., Bain, L.L., & Ennis, C.D. (1995). *The curriculum process in physical education*. Dubuque, IA: WCB Brown & Benchmark.
- Kirk, D. (1993). Curriculum work in physical education: Beyond the objectives approach. *Journal of Teaching in Physical Education*, 12 (3), 244-265.
- Kirk, D., & Tinning, R., (1992). *Physical education pedagogical work as praxis*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Lauder, A.L. (2001). *Play practice: The games approach to teaching and coaching sports*. Champaign, IL: Human Kinetics.
- Laws, C.J. (1990). Individualism and teaching games: Contradiction of terms. *Research Supplement* (8).
- Light, R., & Fawns, R. (2003). Knowing the game: Integrating speech and action in games teaching through TGfU. *Quest*, 55, 161-176.
- Mauldon, E., & Redfern, H.B. (1981). *Games teaching: An approach to the primary school*. England: MacDonald and Evans.
- Metzler, M. (2005). *Instructional models for physical education* (2nd ed). Tempe, AZ: Holcomb-Hathaway.
- Ministry of Education, Singapore. (2003). *Desired outcomes of education*. Retrieved January 10, 2003, from <http://www1.moe.edu.sg>.
- National Association for Sport and Physical Education. (1995). *Moving into the future: National standards for physical education*. Boston: McGraw-Hill.
- National Curriculum Council. (1992). *Physical education in the national curriculum*. York, England: Author.
- Piaget, J., & Inhelder, B. (1971). *Psychology of the child*. New York: Basic Books.
- Rink, J. (2002). *Teaching physical education for learning*. New York: McGraw-Hill.
- Thorpe, R. (1989). A changing focus in games teaching. In L. Almond (Ed.), *The place of physical education in schools* (pp. 42-71). London: Kogan Page.
- Thorpe, R. (2001). Rod Thorpe on teaching games for understanding. In L. Kidman (Ed.), *Developing decision makers. An empowerment approach to coaching* (pp. 22-36). Christchurch, New Zealand: Innovative Print Communication.
- Thorpe, R., Bunker, D., & Almond, L. (1984). *A change in focus for the teaching of games*. Paper presented at the Olympic Scientific Congress, Eugene, OR.
- Turner, A., & Martinek, T.J. (1995). Teaching for understanding: A model for improving decision making during game play. *Quest*, 47, 44-63.
- Tyler, R. (1949). *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.
- Werner, P., & Almond, L. (1990). Models of games education. *Journal of Teaching in Physical Education*, 61 (4), 23-27.
- Werner, P., & Thorpe, R. (1996). Evolution of a model. *Journal of Teaching in Physical Education*, 6 (11), 28-34.

Teaching and Learning Games at the Elementary Level

Steve Mitchell

Second-grade students enter the gymnasium for their physical education class in pairs. They collect their own equipment, set up their own small playing areas, and commence activity without intervention by the teacher. They are playing net games, and activity is purposeful with students engaged in solving problems posed by the game performance of opposing classmates. The teacher encourages problem solving through well-designed questions intended to foster critical thinking (for example: "If Matt is back there (deep in the court), where can Katie throw to make it harder for him to get the ball?"). After some thought Katie identifies an area of open space, and play continues with players trying to hit open spaces.

The previous scenario is very plausible but rare. Instead students more often enter the gymnasium and sit in a circle or on a spot while the teacher explains activities. This is particularly the case in games instruction.

Elementary physical education curricula typically introduce sport or games content at the second- or third-grade level. This introduction usually takes the form of teaching and learning manipulative skills through drill-type activities, which will lead eventually to game play. In fact, I have heard some physical educators express the opinion that children as young as second grade are not capable of game play and should be restricted to skill practice only. Needless to say, I disagree with this viewpoint and

Games can and should be played by children as young as second grade.

suggest that games can and should be played by children as young as second grade.

The purpose of this chapter is to provide a conceptual rationale for using the Teaching Games for Understanding (TGfU) model at the elementary level by reviewing some

recent research, and to suggest strategies for the implementation of TGfU at the elementary level. I will suggest that the implementation of TGfU at the elementary level is best accomplished by taking a thematic approach to content development. A thematic approach involves taking the view that games have similar components (I will use the term *tactical problems*) that must be addressed for students to play successfully. Using the games classification system based on similarities of rules and tactics (Almond, 1986), I will argue for a thematic approach to content development by showing how teachers can develop scope and sequence for content selection. Examples of this process will be provided.

Having outlined a process for content development, I will address the potential trials and tribulations of implementing TGfU at the elementary level. Although TGfU is tried and tested at the secondary level, this is not the case at the elementary level, where teachers have legitimate concerns about strategies for enabling independent, small-sided game play among students. I will address possible pitfalls and realistic expectations for implementing TGfU in elementary schools. The chapter is divided into three sections that address the rationale for using TGfU in elementary schools, a thematic approach for elementary physical education, and the implementation of TGfU in elementary schools.

Rationale for TGfU in Elementary Physical Education

A rationale for using TGfU as an instructional model in elementary physical education can be derived from a combination of empirical and anecdotal evidence. This evidence suggests valuable outcomes in the cognitive and affective domains. Cognitive outcomes, particularly an *understanding* of games and game tactics, were critical to the initial conception of TGfU by Bunker and Thorpe (1982). They argued that novice learners would become more proficient games players and more knowledgeable spectators if they learned to understand the decisions to be made during game play and the impact of these decisions on the skills required for successful performance. This understanding, they argued, would aid game knowledge and performance regardless of successful implementation of required skills.

Research has confirmed the importance of cognitive outcomes. An early study by French and Thomas (1987) indicated that the cognitive components of knowledge and decision making were important determinants of effective game performance in 8- to 12-year-old basketball players. Subsequent research has supported the importance of cognitive factors in contributing to the game performances of elementary age children, particularly in the case of net games (McPherson & Thomas, 1989) and invasion games (Nevett, Rovegno, Babiarz, & McCaughtry, 2001), although findings related to knowledge in striking/fielding games have been less supportive because skill execution is considered a more important contributor to game performance (see Rovegno, Nevett, & Babiarz, 2001, for a review of this literature).

Again, with regard to cognitive outcomes, teachers suggest that learning the tactical components of one game can help with the learning of another tactically similar game. A teacher gave this example during the early stages of a second-grade invasion games unit in which students were playing a modified game of team handball. When a girl, whose play indicated a good understanding of supporting movements, was asked by the teacher, "How did you know that was a good place to move to?" she replied simply, "I play soccer!" (Mitchell, Oslin, & Griffin, 2003). This is a common finding among elementary physical educators, although one that has not been investigated empirically at the elementary level. Nevertheless, there is evidence of cognitive transfer at the secondary level, where Mitchell and Oslin (1999) found that an understanding of one net game transferred positively to another net game and aided in game performance.

Affective outcomes are reported by elementary physical educators with experience in modifying game play and using TGfU at this level. These teachers like the approach for several reasons (Mitchell et al., 2003).

Novice learners would become more proficient games players and more knowledgeable spectators if they learned to understand the decisions to be made during game play and the impact of these decisions on the skills required for successful performance.

When a girl, whose play indicated a good understanding of supporting movements, was asked by the teacher, "How did you know that was a good place to move to?" she replied simply, "I play soccer!" (Mitchell, Oslin, & Griffin, 2003)

- The approach enables young students to see the links between the skills they practice and the application of those skills to game situations.
- Increased time spent in game play provides a more enjoyable and motivational experience for young students, and they will not need to ask the all-too-common question, When are we going to play a game?
- If the previous question is the most commonly asked by young games players, not far behind (and usually asked during skill-based lessons) is, Why are we doing this? In any given TGfU lesson, students learn to appreciate the value of skill practice, first through early game play and discussion, which demonstrates the need for skill practice, and second through later game play, which allows the application and performance of learned skills in the game. This lesson format makes for a more motivational environment during skill practice.

Thematic Approach for Elementary Physical Education

Given the cognitive and affective outcomes alluded to earlier, in this section I advocate not teaching discrete games, such as soccer, volleyball, or softball, but instead teaching units of invasion games, net games, and striking/fielding games centered on specified tactical problems. For the purposes of this discussion I will define a *tactical problem* as a situation arising during game play that must be solved by making decisions and executing skills, if the player is in possession of the ball, or through movements (offensive or defensive), if the player is not in possession of the ball.

When teaching invasion games, such as soccer, hockey, and basketball, teachers might teach young students to keep possession of a ball by passing, receiving, and supporting. The tactical problem to be understood in this example is related to keeping possession of a ball, a problem that players must solve to be successful in their performance. Simply put, if you don't have the ball, you cannot score! If players and teams cannot keep possession, they have a major problem. Depending on the length of the instructional unit, time spent on invasion games might also include learning shooting techniques in these games, addressing the tactical problem of attacking the goal. In this way, novice performers learn to address the tactical problems of all invasion games rather than looking only at the skills of a specific game in isolation. This

approach should develop more knowledgeable and adaptable game players at the elementary level, players who can switch easily among different invasion games.

Similarly, in teaching net/wall games to second- or third-grade students, a teacher might first address the problem of maintaining a rally through the use of consistent throwing or striking techniques so that novice learners can keep the ball in play and progress to a competitive game. This problem can be addressed in game play both across a small net and off a wall, enabling players to see that the problem applies similarly to both types of games (Mitchell & Clemens, 2003). As players become more capable of maintaining a rally, game play will become more competitive with players naturally attempting to move each other around the court, whether

playing over a net or against a wall. At this point teachers should address the tactical problems of creating and defending space within the court boundaries as a means of being able to win points against an opponent. Solving these problems will necessitate practice and the implementation of specific game-related skills and movements.

The development of instructional materials for such a thematic approach requires that teachers first identify the tactical problems to be addressed in elementary games teaching and then appropriately sequence instruction related to these tactical problems. Our attempt to do this takes the form of tactical frameworks and levels of game complexity.

Developing Tactical Frameworks

In this section I will address the problem of breaking games down into tactical problems and identifying solutions to these problems. Solutions are in the form of decisions to be made, on-the-ball skills, and off-the-ball movements. These solutions represent the content of games instruction at the elementary level. I recommend the development of frameworks similar to that presented in table 4.1, which shows a tactical framework for net/wall games. This framework provides the "scope" of content for teaching net/wall games at the elementary level by breaking down this game category according to the problems associated with scoring and preventing scoring.

The development of instructional materials for such a thematic approach requires that teachers first identify the tactical problems to be addressed in elementary games teaching and then appropriately sequence instruction related to these tactical problems.

Table 4.1 Framework for Net/Wall Games for the Elementary Level

Tactical problems/ concepts	Decisions and movements	Skills
Offense/scoring		
Maintaining a rally	Boundaries and rules Moving to catch/receive/strike	Underhand throw Underhand strike— forehand and backhand
Setting up an attack	Court spaces—long and short Opening up to teammates	Shots for depth—lob, drive, and clear Approach shot Drop shot Service Passing and setting
Winning a point	Where to attack Power vs. accuracy	Downward hitting—volley, smash, spike
Defense/preventing scoring		
Defending space	Base positioning Covering the court as a team Sliding	
Defending against attacks	Backing up teammates Shifting to cover	Blocking downward hits

Table 4.1 provides an example of how elementary teachers might break down a game category into its fundamental tactical problems. The most basic problem for novice net/wall games players to solve is how to keep the ball inside the court boundaries to maintain a rally. A game cannot be played unless this can be accomplished. To solve the problem of maintaining a rally, students must first understand the court boundaries and the rules of the game (which will determine decisions made during play) and be able to throw or strike the ball within the designated boundaries (requiring a level of skill development). Having propelled the ball, players must then be able to move to position themselves in the best place to receive the partner's return. Increasing in complexity, and as players progress to competitive situations, the problem of setting up an attack becomes important in this example as a necessary prelude to winning points (although admittedly points can often be won because opponents fail to keep the ball in court). Depending on the net/wall game being played, setting up an attack might involve movements such as approaching the net in mini-tennis or pickleball or aiming for deep spaces on the court (this can even be done by second-

grade students in a "throw-tennis" type of game) (Mitchell & Clemens, 2003). Having set up an attack, net/wall games players can then attempt to win the point, usually by means of a downward strike such as a smash or spike, each of which can certainly be taught in upper elementary physical education if equipment is modified.

Defensive aspects of game playing can also be identified as tactical problems. Table 4.1 suggests two basic defensive problems to be overcome by novice net/wall games players. The first such problem is that of defending space, either on a player's own side of the net or within court boundaries (in the case of wall games). To defend space, players must first learn to return to a base position within the court, usually somewhere around the center of the court or the center of the baseline. Regardless of the exact position, defense of space is accomplished by returning to a position (between skill attempts) that covers the court to cut down available space for the opponent to hit into, and from which it will be easier to reach the subsequent shot to make a return. Having addressed the problem of defending space, players can then address the problem of defending against attack by returning the opponent's attempted winning shot.

Levels of Game Complexity

In this section I suggest ways of sequencing tactical content, such as that suggested in table 4.1, to make games instruction developmentally appropriate. I recommend identifying levels of game complexity for each games category. The levels of game complexity provided in table 4.2 provide an appropriate sequence for the content described earlier. Taken together, the framework and levels of game complexity provide developmentally appropriate *scope and sequence* of net/wall games content for elementary children. These levels will include the learning of concepts and skills across a variety of games.

At level I, students might learn to maintain a rally in a modified tennis game that involves throwing and catching rather than striking, which can easily be transferred to playing against a wall to help students understand the transfer of tactics and skills between net and wall games (Mitchell & Clemens, 2003). As players progress in game complexity, level II will be more sophisticated, involving greater creation and use of space as players develop the abilities to set up attacks with a variety of shots and defend space both individually and as a team. Table 4.2 indicates a clear progression of both tactical and technical requirements, with singles throw-catch games at level I, progressing to singles striking games (one-bounce) and team two-contact (throw-and-catch) games at level II, followed by singles (no-bounce) and two- to three-contact games such as volleyball at level III.

Table 4.2 Levels of Game Complexity for Net/Wall Games

Tactical problems/concepts	Game complexity level I	Game complexity level II	Game complexity level III
Game progressions	One-bounce throw-and-catch games	a. One-bounce, striking with hand b. Two-contact, throw-and-catch, no-bounce	a. No- or one-bounce, striking with implement (badminton, pickleball, tennis) b. Two-contact, striking with hands (volleyball)
Offense/scoring			
Maintaining a rally	Boundaries and rules Moving to catch	Underhand striking—hand only (forehand)	Underhand striking—implement (forehand and backhand)
Setting up an attack	Court spaces—long and short	Shots for depth—lob, drive, clear Opening up	Clears Drop shots Service Passing and setting
Winning a point		Where to attack	Downward hitting—approach shot, volley, smash, spike, power vs. accuracy
Defense/preventing scoring			
Defending space	Base positioning	Covering the court as a team Sliding	Backing up teammates Shifting to cover
Defending against attacks			Blocking downward hits

Table 4.2 suggests three possible levels of game complexity on which the development of unit and lesson plans can be based. The depth of tactical understanding required progresses from simple to more complex as do the solutions to tactical problems required for successful performance. The key to this approach is that by addressing concepts of increasing complexity, students will more quickly understand what they need to do to play net/wall games successfully.

Implementing TGfU in Elementary Physical Education

Teachers must recognize the need to prepare young learners to learn within a new framework. A tactical approach requires that elementary students be able to engage in simultaneous game play, independently and in small groups; this represents a different way of learning for most elementary students. An additional concern for most elementary teachers is available time. Many elementary physical education teachers have back-to-back classes of approximately 30 to 40 minutes' duration. When one class is finished, the next class is already lined up at the door ready to enter the gymnasium, a scenario familiar to many who teach in elementary schools. An added complication is that a first-grade class might be followed by a fourth-grade class and then a third-grade class, making it virtually impossible to set up equipment and leave it for three classes in a row. These and other practical problems are addressed in the remainder of the chapter.

A tactical approach requires that elementary students be able to engage in simultaneous game play, independently and in small groups; this represents a different way of learning for most elementary students.

Training Students to Play Small-Sided Games

This section outlines procedures for training elementary students, as young as second grade, to play small-sided games independently. In particular, young learners need to learn simple rule structures and to respect the game play of other games on adjacent courts or fields, particularly when a ball enters the wrong court. Elementary students at the second-grade level can adhere to two simple rules:

1. When your ball rolls into another game, wait at the edge of that court or field for the ball to be returned (move around the outside of the gymnasium if necessary).
2. When a ball rolls into your game from another game, stop the ball and roll it back to that game, or to the nearest sideline if the other game is too far away.

Simple though they seem, these rules must be taught and reinforced in the early stages of games teaching when multiple games are being played. Teachers at the elementary level have found young learners more than able to restrain themselves from rushing onto another court to retrieve a

ball and also able to resist the temptation to kick or throw a ball that has come into their game from another game. An additional challenge lies in enabling elementary students to learn and understand the court or field boundaries. Assigning students to permanent courts or fields will aid in this learning (see Mitchell et al., 2003, for examples).

Teaching Appropriate Sport Behavior

Several children in most second- or third-grade classes will have gained youth sport experience through programs run by the local parks and recreation department or perhaps by the YMCA or YWCA. These programs are administered and coached by adults, often with lower coach-to-player ratios than the 1-to-20 or 1-to-30 ratios facing the physical education teacher every day. Additionally, these programs often facilitate large-sided games controlled by an adult, alleviating the need for the players to be responsible for the conduct of the game.

The small-sided nature of TGfU, combined with the higher number of students per teacher, requires students to learn to organize their own game play cooperatively so that they are able to play a purposeful game in which teams try to score against each other. The organization of permanent teams and "home courts," and the assignment of simple student roles and responsibilities, can facilitate learning game play and appropriate sport behavior. A model such as Sport Education (Siedentop, 1994) can provide mechanisms for team, equipment, and game organization, as well as a means of developing appropriate sport behaviors.

Teaching Rules and Routines

Simple rules and routines are critical in enabling TGfU to run smoothly within the short time frame (30 to 40 minutes) available to the elementary physical education teacher. These should include routines for entry into the gymnasium and equipment management. Routines have an enormous impact on the effective use of time in physical education. Many classes begin with the students sitting in squads, on spots or in a circle, so the teacher can take attendance, explain what will happen, and distribute equipment. Alternative routines can allow for a more active start to a lesson in which students enter the gymnasium and begin activity immediately, organizing their own equipment.

Consider, for example, a second-grade class of 24 students involved in net games play. They are learning the tactics and skills of a modified net game against an opponent (singles play) in a designated playing area. Rather than using a net in the early stages of play, they are playing a simple throw-and-catch game across a line (or perhaps a jump rope laid flat on the floor). This enables the students to work on the tactical aspects of

play without having to worry about having to clear the height of a net. The game also uses a mandatory "one bounce within the boundary" rule (i.e., the ball *must* bounce once). Assuming that equipment is not left out following the previous class (because the previous class might have been kindergarten or fifth-grade students learning something different), the teacher's first task involves setting up 12 playing areas and getting play started as quickly as possible. Obviously, it is not time efficient for the teacher to set up all the playing areas; she needs a simple system for the students to follow so they can set up their own playing areas. Using the available gymnasium floor lines (which are present in every gymnasium we have ever used or visited), it is easy for the students to set up playing areas such as those in figure 4.1. Students enter the gymnasium and, in their established pairs, set up the court by taking cones from a

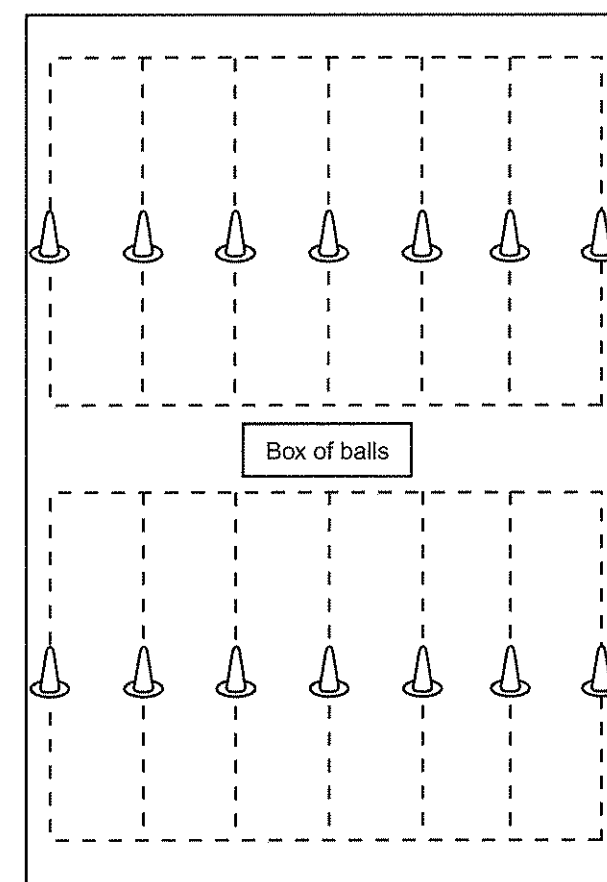


Figure 4.1 Playing areas for net games.

predetermined location and placing them in the appropriate place. *Small pieces of colored floor tape should be used to guide students to place the cones in the right position.* Court setup can be accomplished independently by one player while the opponent collects the ball to be used. Play can begin immediately once the court is set up.

Restart Rules

In addition to learning how to initiate their own game play, students must also learn how to restart play when a natural break occurs, such as when the ball goes out of bounds or into the net. It may seem obvious that when one team causes a ball to go out of bounds in an invasion game, the game is restarted at the sideline by the other team. However, teachers need to teach this rule to young players, and to provide frequent reminders until players understand the rule. Restart rules that increase the likelihood that a team passing the ball into play can do so successfully without the ball going immediately out of bounds again are particularly helpful. For example, the teacher might stipulate that any defender must be at least one arm's length back from the player taking the in-bounds pass. The teacher may use a rule that says the first pass into play is "free" (i.e., cannot be intercepted), but it must go backwards (i.e., toward the passer's own goal). In a game such as soccer, in which a ball is thrown into play and must be controlled with the feet, use of a free "kick in" on the ground would help the receiving player control the ball.

Options for restarting after a goal is scored can also vary from a restart at the center (as in soccer) to a restart from the goal line (as in basketball). The advantage of using the latter in all invasion games teaching is that it speeds up play because players will learn to restart more quickly and make an effective transition from defense to offense before the opposing team recovers. The advantage of a restart at the center of the court or field is that it enables a team that has conceded a goal to restart from farther up the court or field.

Similarly, some sensible principles will help with efficient restarts in net games. First, in the early stages of learning net games, all starts and restarts (i.e., "service") should take the form of an underhand toss. By providing an easier ball for the opponent to receive, players increase the likelihood of a longer rally or point score. Second, service should alternate after every point so that no single player can dominate a game (or be dominated) by having a strong (or weak) service. Third, in games in which rules state that scoring is only done by the serving player or team, as in badminton or volleyball (or elementary modifications thereof), a "rally scoring" system can be used in which points can be scored on either serve. Again, this provides more scoring opportunities for novice learners.

Defense Rules

The intensity of defense, particularly in invasion games, is often a hindrance to offensive performance. Although high-intensity defense is necessary for effective game play, it can impede the development of decision-making capacity and motor skill performance. We recommend a graded system of defense, beginning with "cold" defense and moving through "warm" and "hot" defense. Cold defense is obviously the easiest type of defense to play against. In skill practice and game situations, this amounts to defenders simply acting as obstacles for players to have to pass or move around. Defenders can neither intercept passes nor knock balls from opponents' hands when playing cold defense, making it somewhat inappropriate for game play situations. On the other hand, warm defense is ideal for game play situations with novice players because it allows players to intercept passes without knocking the ball out of an opponent's hands or tackling an opponent. In warm defense, a defender must stay one arm's length away from the player in possession of the ball, providing some space and time for decision making and skill execution. Warm defense also provides an appropriate extension of skill practice tasks that begin with cold defense. Hot defense is recommended as a progression once players have shown some mastery of decision making and skill execution. Players are permitted to intercept passes and to tackle in hot defense, the latter having implications for the teaching of appropriate sport behavior as outlined previously.

Conclusion

In this chapter I have outlined a conceptual rationale for the use of TGfU at the elementary level, where it has been implemented much less than at the secondary level. Elementary teachers report that the model can be adapted suitably to provide a games-based format for the teaching of games in elementary schools. Moreover, more readily available resources (e.g., Mitchell, Oslin, & Griffin, 2003) increase the likelihood that elementary physical education teachers will experience success with this approach. Again, teachers report the following benefits:

- Modified game play provides a developmentally appropriate environment for student learning. Changes to equipment, playing areas, and rules enable young children to play games that have been modified to suit their needs.
- Increased time spent in game play provides a more enjoyable and motivational experience for young learners.

- Young learners can see the links between the skills they practice and the application of those skills to game situations.
- In any given lesson, students learn to appreciate the value of skill practice, first through early game play and discussion, which demonstrate the need for skill practice, and second through later game play, which allows the application and performance of learned skills in the game.
- Learning the tactical components of one game can help with the learning of another, tactically similar game.

The scenario provided as an introduction to this chapter is a realistic possibility for teachers who seek to maximize student engagement, encourage student thinking, and foster student responsibility. Nevertheless, games teaching at the elementary level does not come without issues related to student ability and encouraging competition at an early stage within the elementary physical education curriculum. The discussion questions that follow address these issues.

Discussion Questions

1. What are the abilities of elementary students relative to competitive game play?
2. What issues does TGfU playing bring to the curriculum? Can you resolve any of these issues?
3. Compare and contrast different approaches to games teaching that you have seen in elementary physical education.
4. How might an invasion games tactical framework be different from the net/wall games framework?
5. How can TGfU in elementary physical education be combined with TGfU in secondary physical education to create a comprehensive games education curriculum?

References

- Almond, L. (1986). Reflecting on themes: A games classification. In R. Thorpe, D. Bunker, and L. Almond (Eds.), *Rethinking games teaching* (pp. 71-72). Loughborough, England: University of Technology, Department of Physical Education and Sports Science.
- Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools. *Bulletin of Physical Education*, 19, 5-8.
- French, K., & Thomas, J. (1987). The relation of knowledge development to children's basketball performance. *Journal of Sport Psychology*, 9, 15-32.
- McPherson, S., & Thomas, J.R. (1989). Relation of knowledge and performance in boys' tennis: Age and expertise. *Journal of Experimental Child Psychology*, 48, 190-211.

- Mitchell, S., & Clemens, L. (2003). Introducing game play in elementary physical education: A net/wall games example. *Teaching Elementary Physical Education*, 14 (1), 12-15.
- Mitchell, S., & Oslin, J. (1999). An investigation of tactical understanding in net games. *European Journal of Physical Education*, 4, 162-172.
- Mitchell, S., Oslin, J., & Griffin, L. (2003). *Sport foundations for elementary physical education: A tactical games approach*. Champaign, IL: Human Kinetics.
- Nevett, M., Rovegno, I., Babiarz, M., & McCaughtry, N. (2001). Changes in basic tactics and motor skills in an invasion-type game after a 12-lesson unit of instruction. *Journal of Teaching in Physical Education*, 20, 352-369.
- Rovegno, I., Nevitt, M., & Babiarz, M. (2001). Learning and teaching invasion-game tactics in 4th grade: Introduction and theoretical perspective. *Journal of Teaching in Physical Education*, 20, 341-351.
- Siedentop, D. (1994). *Sport education: Quality PE through positive sport experiences*. Champaign, IL: Human Kinetics.