

Special Blog: Step Game Approach

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Forming part of the celebrations for the 40th anniversary of the Teaching Games for Understanding (TGfU) model, monthly 'spotlights' were published on some of the key models/approaches within the field of Game-Based Approaches (GBAs). We are continuing this initiative by presenting the Step Game Approach.

Introduction

Since the emergence of Teaching Games for Understanding (TGfU) and Bunker and Thorpe's Curriculum Model (1982) pedagogical models have proliferated, giving rise to many well-known iterations of Game-based Approaches (GBAs) (Pill et al., 2023) including the Tactical Games Model (Mitchell et al., 2021), Play with Purpose (Pill, 2007) and the Step Game Approach (SGA) (Mesquita et al., 2005). GBAs utilise the game as a purposeful learning environment and places the pupil at the centre of the learning process.

The traditional approach to teaching volleyball is as a component of a multi-activity curriculum which focuses on isolated skill practices before playing a full version game. Inherent in this traditional approach is a problematic disconnect as students practice isolated skills that lack the broader contextual elements experienced within a full 6v6 game. Without an understanding of the meaning of the game, students will become frustrated and fail to make progress in their learning. Game flow in volleyball is hindered by technical faults (return failures or rule violations) (Mesquita, 1998) which adds credence to support for the traditional approach of teaching skills. Strict adherence to the rules make volleyball a difficult game for PE students, whereas with game modifications students can experience sustained game flow which supports contextual skill development (Mesquita et al., 2005).

Step Game Approach (SGA)

The central idea of the SGA, a framework for developing players in net games such as volleyball, is that student game ability and strategic thinking are developed in a progressive stepwise fashion through the game (Araújo et al., 2019; Farias et al., 2019; Mesquita et al., 2005). SGA provides immediate and intimate interaction of the tactical and technical components, in line with the internal dynamics of the game and the learning objectives. It does not deny the need for the teaching of technique but rather positions this after the understanding of which skill is needed

within the game context. The approach encourages holistic development through promotion of fair play and sport literacy (Personal), motor skills (Physical), opportunities for equal participation and team work (Social), and critical thinking/tactical skills (Cognitive).

Akin to TGfU and its pedagogical principles (Bunker and Thorpe, 1982; Thorpe et al., 1986), the SGA prioritises tactical learning over skill technique development and utilises the concepts of game-modification and exaggeration to create game-forms with tactical problems that are appropriate for the players. Modified game features including the equipment (balls, net), the court dimensions, the number of players and the rules are presented in simplified game-forms that challenge players to develop their strategic problem-solving whilst providing opportunities for the students to advance their skills (Mesquita et al., 2005). The critical elements of SGA also incorporate the step-wise progression detailed by the Skill Development Approach (Rink, 1993) where each increment of learning is embedded and compounded before players progress on to the next step.

The SGA comprises 4 steps, - 1v1, 2v2, 3v3 and 4v4, determined by student skill level- to introduce complexity and develop player competencies. Each stage differs in terms of its intended skill development, content, and rules adaption. Four concerns are addressed at each of the stages; what kind of game to develop, what technical and tactical components to work with, what off-ball actions to consider and what regulatory adaptations can be implemented.

During the preliminary games, a cooperative approach is combined with modifications to rules of play aimed at slowing the game down, allowing time for players to make corrections and for sustained rallies to build the acquired skills/competencies to develop before introducing competitive gameplay (Mesquita et al., 2005). For example, using simplified 1v1 gameforms students are taught firstly the overhead pass and secondly the underhand serve. The advantages of the overhead pass are that when the player touches the ball they are looking up and ahead where they can see the net, and their positioning relative to the ball facilitates efficacy for touching the ball. These skills are easier for the students to learn, allow the ball to be maintained in the air and thus through the game players develop a basic understanding of the principles of attack and defence. In addition, regulatory adaptations are made to promote student success in step one of the approach; by allowing one rebound the player has time to determine ball trajectory and get into position behind the ball ready to return it, further, if the player makes a defective contact they are permitted to correct it with a double or triple touch. Equipment modifications such as a lighter ball and an increase in the height of the net can also be implemented to improve success.

In subsequent steps, the introduction of partners (2v2, then 3v3) incorporates new dimensions into the game with players learning to coordinate their efforts and to explore and weigh up the expanding options open to them for defensive and offensive tactics of competitive play. With having 2 opponents in step 2, players will start to experience the ball coming from different trajectories and will need to learn the complementary skill of the forearm pass. Rebounds are no longer permitted but the double touch rule remains in place to give players more time to set up their attack. As competency in attack skills such as the spike and overhead serve progress, team sizes can be further increased to 4v4 which encourages the players to experiment with countering defensive blocking skills/strategies. In steps 3 and 4 the formal regulations are followed. In addition to the game tasks, learning is enhanced by the use of thematic games where changes to secondary rules (scoring system, field dimensions, targets etc.) exaggerate the need for players to utilise specific skills or tactics.

Table 1: SGA steps- skill, regulatory adaptations, tactical components and actions without ball

STEP ONE (1v1)			
Skill	Regulatory Adaptations	Tactical Component	Actions Without Ball
Overhead pass	Lighter ball	Acquisition of elementary notions of opposition	Take up space
	Double tap/triple touch		
	Bounce	Resending the ball within the limits of the opposing field	
Underhand serve	Temporal prehension	Choice of targets to attack	Proceed
	Increased height of the net		
STEP TWO (2v2)			
Skill	Regulatory Adaptations	Tactical Component	Actions Without Ball
Underhand pass	Double tap	Differentiation of receiver/attacker and non-receiver/passers roles	Transition
		Identification of areas of responsibility	
		Verbal responsibility	
			Adjustment

	3 to 5 touches per team	Move up to net and reception to the net	
		Second touch	
STEP THREE (3v3)			
Skill	Regulatory Adaptations	Tactical Component	Actions Without Ball
Back Pass	Formal regulations	Attack: variability of attack options	Return
Jump Pass			
Spike		Defence: notion of Low Defence	
Low position			
Tennis Serve			
STEP FOUR (4v4 / 6v6)			
Skill	Regulatory Adaptations	Tactical Component	Actions Without Ball
Block	Formal regulations	Differentiation of high defence and low defence	Cover
		Occupation of space to intervene in the game, after attack	
High Position		Amorti defence technique	

Training the Future: The Impact of the Step Game Approach at FADEUP

Every year, approximately **140 student-interns** from the Master's in Teaching Physical Education (MEEFEBS) at the **Faculty of Sport of the University of Porto (FADEUP)** enter schools to shape the next generation of athletes. A cornerstone of their training is the **Step Game Approach (SGA)**—locally known as the **Modelo de Abordagem Progressiva ao Jogo (MAPJ)**—a student-centered model that has become a dominant pedagogical force within the program.

1. From Classroom Theory to School Practice

The MEEFEBS curriculum ensures that these future teachers master the SGA before they step into a gymnasium. Consequently, a large portion of these 140 interns apply, or attempt to apply, the SGA during their professional internships (**Area 1**). While **Volleyball** remains the primary context, interns have successfully adapted its "step-by-step" logic to **Handball, Soccer, Badminton, and even Sitting Volleyball**.

Their goal is transformative: moving away from isolated technical drills to prioritize **game appreciation and tactical awareness**. By using reduced game forms (like 1v1 or 2v2), interns ensure that even the most heterogeneous classes—including students with lower skills or disabilities—remain engaged and successful.

2. The Internship as a Research Lab

For many FADEUP interns, the internship is an opportunity for **Action-Research (Area 3)**. By conducting "mini-studies" on their own practice, these students consistently find that the SGA delivers concrete results:

- **Tactical Excellence:** Using the **Game Performance Assessment Instrument (GPAl)**, interns document significant statistical gains in students' **decision-making** and **intentional gameplay**. These improvements in gameplay are not temporary; data suggests they are **retained** even after instructional units end.
- **Teacher Growth:** Researching the model forces interns to develop **Specialized Content Knowledge (SCK)**. They move from simple reproductive styles to becoming **facilitators of learning** who can offer sophisticated tactical refinements.
- **Closing the Gap:** Longitudinal evidence within these studies shows that repeated SGA seasons help **close the performance gap** between higher and lower-skilled students, making it a powerful tool for equity in the classroom.

3. Challenges of the "Facilitator" Role

Despite its success, interns frequently report that the SGA is **pedagogically demanding**. It requires the teacher to act as a facilitator who must constantly analyze the class's performance to decide when to progress or regress through the learning stages. This often involves a "learning curve" where interns must overcome an initial reliance on directive instruction to empower their students to think strategically for themselves.

Conclusion

The widespread adoption of the SGA/MAPJ by FADEUP interns signals a major shift in Physical Education pedagogy. By training 140 new teachers every year in this approach, the program ensures that schools move toward a more **inclusive, strategically-minded, and engaging** form of sport education. For these future professionals, the SGA is the primary tool for turning their students into competent and enthusiastic players.

Research on the **Step Game Approach (SGA)** provided in these sources is extensively documented across **ten major research works** (including peer-reviewed articles and a multi-study doctoral thesis). These studies primarily explore two contexts: **School-based Physical Education (PE)** and **Youth Club/Federated Training**.

Context 1: School Physical Education (PE)

This is the most represented context, with **seven distinct studies** focusing on students from elementary to high school levels.

Elementary and Middle School (6th–8th Grade):

- **Karisman (2023)** studied 36 sixth-grade students, finding that a hybrid SE-SGA model significantly improved volleyball skills and maintained high student commitment (>80%).
- **Araújo et al. (2016)** examined 17 seventh-graders (ages 11–12), reporting significant improvements in **decision-making, skill efficiency, and skill efficacy** from pre-test to post-test, which were maintained in retention tests.
- **Farias et al. (2022)** followed 60 eighth-grade students taught by pre-service teachers, observing significant growth in **game performance indices** and terminal actions like serve, reception, and setting.
- **Araújo et al. (2019)** conducted a **three-year longitudinal study** following students from 7th to 9th grade. They found that repeated SGA seasons led to continuous improvement and **closed the performance gap** between higher and lower-skilled students.

High School (12th Grade / Ages 16–18):

- **Silva et al. (2022)** utilized an insider action-research design with 25 students (ages 16–17), showing that the model increased student **autonomy, interest, and volleyball-based knowledge**.
- **Araújo et al. (2020)** examined 96 students (ages 16–18), demonstrating that the hybrid SE-SGA model significantly enhanced **declarative tactical understanding** across all offensive and defensive game situations.
- **Mesquita et al. (2005)** initially validated the approach in a school context over 12 lessons, proving it effective for **decision-making and technical execution**, particularly for girls and lower-skilled students.

Context 2: Youth Club / Federated Training

The sources include **three major works** (one being a comprehensive doctoral thesis containing eight empirical studies) focused on youth teams in a club environment.

Club Performance and Tactical Knowledge:

- **Ramos et al. (2021 & 2023)** conducted longitudinal action-research with a competitive U-16 girls' team (15 players, ages 14–15). They found that integrating SGA with a Constraints-led Approach (CLA) moved players from basic description to **intentional strategic thinking** and improved their ability to recognize environmental game constraints.

Coach Intervention and Training Profiles:

- **Pereira (2009)** completed a **doctoral thesis involving 28 youth coaches** of Under-14 and Under-18 teams. Her studies revealed that while coaches conceptually support SGA-style

player autonomy, their actual practice remains predominantly **coach-centered and technical** (molecular), with a heavy reliance on prescriptive feedback and acquisition tasks.

Context 3: Adult Training

Findings: The provided sources **do not contain specific empirical studies** focusing on non-youth adult training (e.g., senior professional or amateur adult leagues). The research is heavily concentrated on the **developmental stages of youth** (ages 11 to 18).

Concrete Research Outcomes

- **Inclusion and Equity:** The model is particularly beneficial for **girls and lower-skilled students**, who consistently show greater learning gains compared to their peers when tasks are adjusted to their "zone of proximal development".
- **Tactical vs. Technical Balance:** SGA successfully subordinates technical drills to tactical understanding. Research shows students improve **declarative knowledge** (knowing "why" and "when") alongside **procedural knowledge** (knowing "how").
- **Teacher/Coach Development:** The model serves as a scaffold for **novice and pre-service teachers**, helping them move from direct, reproductive styles to becoming **facilitators of learning**.
- **Long-term Efficacy:** Longitudinal data suggests that the benefits of SGA are not temporary; improvements in gameplay are **retained** even after instructional units end.

Empirical studies on the SGA in PE and youth sport:

- **Araújo, R., Mesquita, I., Hastie, P. A., & Pereira, C. (2016).** Students' game performance improvements during a hybrid sport education-step-game-approach volleyball unit. *European Physical Education Review*, 22(2), 185–200.
- **Araújo, R., Hastie, P., Lohse, K. R., Bessa, C., & Mesquita, I. (2019).** The long-term development of volleyball game play performance using Sport Education and the Step-Game-Approach model. *European Physical Education Review*, 25(2), 311–326.
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- **Ramos, A., Coutinho, P., & Mesquita, I. (2023).** How can coaches tailor the coaching practices to scaffold players' learning development? An insider action-research study in youth volleyball team. *Sports Coaching Review*.
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- **Pereira, F. R. M. (2009).** *Abordagens instrucionais no treino de jovens em voleibol: Contributo para a excelência profissional do treinador*. Dissertação de Doutoramento, Faculdade de Desporto da Universidade do Porto, Porto.
- **Ferreira, A. J. (2025).** *Progressão Pedagógica de Ensino do Minivoleibol ao Voleibol*. Produto Educacional, Mestrado Profissional em Educação Física (PROEF), UNIOESTE.

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