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<https://doi.org/10.5628/rpcd.16.01.73>

The Sport Education Model: Research update and future avenues for practice and investigation

KEYWORDS:

Physical Education. Student-centred
 approaches. Sport education model.
 Research update.

SUBMISSÃO: 6 de Janeiro de 2016

ACEITAÇÃO: 27 de Março de 2016

ABSTRACT

The Sport Education Model is likely the most prominent second-generation curriculum alternatives to the often-dominant teacher-centred direct instruction approaches. The main goal of this paper was to conduct a systematized analysis of two decades of research on sport education in order to identify critical conceptual and methodological concerns and inform future directions for practice and research toward development of a more matured model. The scope of this essay includes a contextualization of the contemporary shift from teacher-centred to student-centred approaches for teaching physical education; the conceptual roots, structural features, and educational goals of sport education; the thematic and methodological examination of empirical research on the model; and conclusions and future avenues for research. Two main areas of intervention were identified: the need to safeguard *competency* development through coaching preparation protocols and in-depth examination of instructional interactions conducted by student-coaches; and the examination of, and intervention upon, the power and relational dynamics operation during peer interactions that either restrain or facilitate students' access to more equitable and inclusive participation. It is suggested that the adoption of a transformative agenda through action research designs, ethnographic, case study, and longitudinal data collection protocols are indispensable key vehicles for enhancing the model.

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O Modelo de Educação Desportiva: Atualização da investigação e futuras avenidas para a intervenção e investigação

RESUMO

Entre as propostas curriculares de segunda geração, o Modelo de Educação Desportiva destaca-se como uma alternativa proeminente às abordagens de instrução direta centradas no professor. Na busca por uma versão mais evoluída deste modelo, este artigo oferece um ensaio sinóptica de duas décadas de investigação com o intuito de identificar potenciais preocupações conceptuais e metodológicas e, nessa base, informar a futura investigação e aplicação do modelo. Este ensaio integra a mudança de paradigma de abordagens de ensino da educação física centradas no professor, para abordagens centradas no aluno; as raízes conceptuais, as características estruturantes e as metas educacionais do Modelo de Educação Desportiva; o exame temático e metodológico da investigação empírica no modelo; e conclusões e futuras avenidas para a investigação. Foram identificadas duas áreas centrais de intervenção no futuro: a imprescindibilidade de garantir o desenvolvimento da competência desportiva, através da introdução de protocolos de preparação dos estudantes-treinadores para o ensino de pares e examinação aprofundada das interações instrucionais lideradas por estes alunos; e o estudo e intervenção sobre as dinâmicas relacionais e de poder operantes nas interações entre pares que tanto constroem ou facilitam o acesso dos estudantes a uma participação nas atividades mais equitativa e inclusiva.

PALAVRAS CHAVE:

Educação Física. Abordagens centradas nos alunos.

Modelo de Educação Desportiva. Atualização da investigação

INTRODUCTION

The shift from a focus on 'gymnastics and exercise' to an approach emphasizing sports and games, represented an important milestone in the development of physical education (PE) curriculum at a global scale ⁽¹⁰⁹⁾. Indeed, playing games and sports lies among the most popular curriculum areas in PE for fuelling enjoyment and allowing students to "be active, socialize, and work with and against friends and classmates" ⁽¹⁰⁵⁾. An additional attractive feature of game-centred activities concerns its dynamic and problem-solving structure, which poses to players constant challenges and assigns meaning to students' performance for being directly tied to their interests and cultural representation of sports ⁽³⁵⁾.

Historically and culturally influenced by the technical perspective dominant in elite sport ⁽¹⁴⁾, the traditional instructional approaches (i.e., direct instruction model) based on behavioural models for motor skill acquisition ¹ have formed the dominant view of teaching and learning of games and sports in PE for much of the 20th century ^{2 (36, 66)}. Grossly summarized, such approach is typically characterized by the following features. The approach seeks immediate and high levels of success through rote repetition of responses "in movement patterns and skills" ⁽⁷⁵⁾. The step-by-step increment of proficiency in elementary skills ⁽⁹⁴⁾ occurs through isolated skill-drills before students' engagement in more complex game situations frequently mirroring formal versions of sports (see, for example, the National Curriculum Council ³). Because learning is conceived to emerge from the dyad teacher transmission-students acquisition/ repetition, the "teacher as an instructional leader" ⁽⁷⁵⁾ is the source of nearly all of the decisions made on instruction and content development, class management, and student engagement patterns. A multi-activity format of curriculum is frequently associated to teacher-centred approaches with the intent of providing young people with opportunities to find an activity to which they are attracted to ⁽³⁹⁾. Quite typically, students participate in different sports and ac-

¹ Many of the operations within teacher-centred approaches were built upon the Behaviourist perspective of learning. A set of assumptions derived from research on laboratory animals where it was noted that there was a close relation between learned behaviour and its consequences. Responses that were rewarded were more likely to repeat if the stimulus was present again than responses not reinforced. The process termed as behaviour training included five main concepts: shaping, modelling, practice, feedback, and reinforcement (for further detail, see Metzler ⁽⁷⁵⁾).

² See, for example, the 'Organizational plan for teaching-and-learning: Physical Education Programme' currently followed in the Portuguese schools. Emphasis is placed on "increasing the functional level of basic and general coordinative and conditional skills" and on developing factual knowledge of sport: "Know the goals of the game, the purpose and execution elements of the principal technical-tactical actions and rules", http://www.dge.mec.pt/sites/default/files/ficheiros/eb_ef_programa_2c_ii.pdf

³ National Curriculum Council (NCC), 1992, United Kingdom.

tivities within short units of instruction (e.g., learning the sport during 6 to 10 lessons, approximately) (see van der Mars and Tannehill ⁽¹¹²⁾; see also the Organizational Plan for Teaching-and-Learning: Physical Education Programme ⁴⁾).

The advocates of teacher-centred and direct teaching approaches have highlighted the following advantages of this approach: (a) the motor skills are learned and practiced outside the game context and thus offer a less complex 'closed', 'discrete', and 'non-game-like' format; (b) the skills-drills/ lines/ circuit organization affords students with high levels of rote repetition of movement patterns ⁽⁴⁶⁾ and (c) high rates of positive and corrective teachers' feedback ⁽⁷⁵⁾; (d) there is no class time spent to teach students functions not related exclusively with motor tasks (e.g., managerial responsibilities); and; (e) no time is allocated to students' 'discovery' learning as the 'trial and error' progression is eliminated from the process ⁽⁹⁴⁾.

In opposition, a weakness frequently attributed to teacher-centred approaches is the neglect of the cognitive and affective domains of learning ⁽⁷⁵⁾ and consequent disregard for the contextual and social nature of teams sports and games ⁽³⁶⁾. The technique-based format of sport instruction driven mostly by direct instruction is known to negate the importance of understanding tactics and strategies as a critical means to develop higher order cognitive processes ⁽¹²⁾. This has led to players' inability to fit skill performance to contextual game circumstances ⁽³²⁾. In fact, students have deemed the decontextualized, repetitive, and rote learning of skills isolated from the movement-information coupling of the game as "boring and irrelevant" ⁽⁹³⁾. Furthermore, the dominant short-unit and multiple-activity curriculum has also been criticized for allowing, "students to develop only a superficial level of understanding and competence" ⁽⁶⁰⁾. Associated to it are reports of unintended low levels of student commitment, intensity of engagement and enthusiasm ⁽⁸⁸⁾.

A further critique stressed by Siedentop ⁽⁹⁷⁾ includes issues related with "lack of authenticity" and "decontextualized PE". As explained by Siedentop ⁽⁹⁸⁾, from his extensive observations of pre-service and in-service teachers, he found sport to be typically presented to students stripped from its cultural relevance. In his interventions he noticed most PE activities were decontextualized from the associated sport culture within which students had been socialized into during their out-of-school sport experiences. Additionally, the rituals, values and traditions of sports that furnish games of meaning, were seldom taken in reference. Recently, the 'teacher-centeredness' of processes and consequent limited scope provided to students for participating in decision-making relevant to their learning experiences, was found to lead to minimal levels of student autonomy, perceptions of competency and relatedness ⁽⁴⁴⁾.

Recent attempts to keep pace with the demands the contemporary society presently poses to school (e.g., developing 'autonomous thinkers and critical consumers of the social and cultural world') ⁽⁶⁰⁾ have led many educational policies, national curricula and teacher education programs to adopt a constructivist 'student-centred' perspective of curriculum development ⁽¹⁰⁹⁾. Standards such as 'recognizing the value of physical activity for health, enjoyment, self-expression and social interaction', 'developing physical literacy' (Society of Health and Physical Educators – USA ⁵⁾), and 'understanding what makes a performance effective and how to apply these principles individually and as a team member in new contexts' (National Curriculum in England-UK ⁶⁾ ⁽¹⁰⁹⁾, are now commonplace in the lexicon of many national PE curriculum. This is because constructivism rejects the notion of learning as a linear transmission/acquisition process (as in teacher-centred approaches), in favour of a conception of learning as a cognitively, socially and self-regulated construction of knowledge by learners ⁷ ⁽¹⁸⁾. As active, social, and creative learners ⁸, students are encouraged "to engage with content intellectually, socially, and kinaesthetically through active participation in solving tactical, personal, and technical problems" ⁽³⁶⁾. In constructivism, due to the belief there is interdependence between the individual and the social ⁹ ⁽¹¹⁴⁾, the situated nature of learning is emphasized in that learning experiences are found to be more complete and effective when occurring in authentic and real life settings ⁽⁶⁴⁾. There is, hence, a shift in the focus from the isolated learner to the social setting that constructs and constitutes the individual as learner. In this perspective, Kirk and Macdonald ⁽⁶¹⁾ suggested that "learning occurs with any collectivity in which a community of practice exists" and is influenced and shaped by the situated interplay of relationships and the trajectories of participation and membership of students that form the community of learners ⁽⁶⁴⁾. An additional feature inextricably linked to constructivism is the role of the teacher as a 'facilitator'. The literature on constructivist-oriented teaching practices has highlighted the following indispensable requisites of a facilitator ⁽¹⁶⁾: (a) facilitating

⁵ Society of Health and Physical Educators: National PE standards, USA. 2016, <http://www.shapeamerica.org/standards/pe/>

⁶ National Curriculum in England: PE programmes of study, UK, 2016, <https://www.gov.uk/government/publications/national-curriculum-in-england-physical-education-programmes-of-study>

⁷ A core assertion in constructivism is that students actively construct knowledge through integrating new ideas with their own thinking, past experiences and knowledge ⁽⁸¹⁾.

⁸ As active learners, students are actively engaged in learning activities and instructional interactions that stimulate decision-making, critical thinking, and problem solving. As social learners, students construct knowledge through social interaction with their peers, facilitated by their teachers. As creative learners, students are guided to discover knowledge and to create their own understanding of the subject matter ⁽⁸⁷⁾.

⁹ Central the Vygotskian socio-constructivism lies the notion of 'optimal' learning. occurring within each learner's zone of proximal development in a process mediated by a 'more capable other', that is, a peer, a teacher, or any other individual assuming the role as educator.

⁴ Organizational plan for teaching-and-learning: Physical Education Programme, Portugal, http://www.dge.mec.pt/sites/default/files/ficheiros/eb_ef_programa_2c_ii.pdf

the learning process by engaging students in initiating, finding, and solving problems; (b) promoting students' conceptual understanding by linking new information to students' emerging relevance and by integrating content and process skills; (c) guiding students to resolve their misconceptions by discussing and sharing ideas with students; and (d) demonstrating excellent knowledge of the subject matter.

Within the field of PE, shape was given to constructivism through the rise of what Ennis ⁽²⁴⁾ calls “second generation” instructional models for teaching games and sports that build on strong statements of democratic and student-centred practice ⁽³⁹⁾. The teaching Games for Understanding approach (TGfU) ⁽¹²⁾ and the Sport Education model (SE) ⁽⁹⁷⁾ have been highlighted ⁽⁷⁵⁾ for incorporating pedagogical structures that place the learner at the centre of the learning experience ⁽³¹⁾. This is because these two student-centred approaches hold the potential to provide “meaningful, purposeful, and authentic learning activities presented and practiced by students” ⁽²³⁾.

In the case of TGfU, and its following pedagogical iterations (e.g., Tactical Games ⁽³⁴⁾; Game Sense ⁽²²⁾; Invasion Games Competence Model ⁽⁷⁸⁾), particular emphasis is placed in the learning of games and team sports through development of high order cognitive processes. Due to the dynamic and ever changing nature of the constraints that players need to overcome during game-play ⁽³³⁾, learning games is conceived in reference to problem-solving frameworks of instruction. Consequently, students are expected to develop the ability to identify tactical problems and select appropriate tactical skills to solve them ⁽³⁴⁾. In this perspective, the development of ‘thinking players’ is deemed a precursor of students' personal construction of knowledge and enhanced performance ⁽³²⁾. The ultimate goal is the development of players that understand the games tactically and deploy tactical skills ¹⁰ appropriately to the circumstantial information grasped from the context ^(63, 78).

With regard to SE, although its initial focus, and a continuing theme remains around games, the model has come to be particularly highlighted in PE contexts around the globe ⁽⁴⁴⁾ for “providing students more complete and authentic sport experiences” ⁽¹¹²⁾. SE has a high eclectic focus as its application has ranged from ultimate frisbee ⁽⁴²⁾ to fitness ⁽⁹¹⁾, while it has been implemented in educational settings including elementary schools (e.g., ⁶⁵), secondary schools (e.g., ⁵⁸), and PE teacher education (PETE) contexts (e.g., ¹⁰⁸). For the richness and increasing proliferation of SE acknowledged both in the literature and research in PE and sport pedagogy ⁽⁴⁴⁾, this article will be centred on the literature and research conducted on SE since its inception in the 90th decade of the last century to the present day.

¹⁰ Bunker and Thorpe ⁽¹²⁾ consistently used the term “skill” to refer to an amalgam of strategic and technique capabilities in game players. This concept has been revisited in light of a situated learning perspective by Kirk and Macdonald ⁽⁶¹⁾. Tactical skills are seen as ‘learning modules’ which represent clusters of related capabilities. Tactical skills as modules represent clusters of cue perception capabilities, strategies, and techniques that are activated together in specific game situations.

THE SPORT EDUCATION MODEL

CONCEPTUAL ROOTS AND STRUCTURAL FEATURES OF SPORT EDUCATION

In one of his first publications, Siedentop ⁽⁹⁷⁾ asserted SE emerged from the intent to establish the place of sports in the heart of the PE curriculum through pedagogies designed in reference to the educational richness of playing games. The core goal of providing contextualized learning activities defined SE as “a curricular and instructional model designed to provide authentic, educationally rich sport experiences for girls and boys in the context of school PE” ⁽⁹⁷⁾.

To achieve such “*authenticity* of experience”, Siedentop ⁽⁹⁷⁾ designed SE to mimic the authentic form of sport within the larger culture by means of including six key features deemed essential in the preservation of the primary features of sport ⁽⁶¹⁾. The model includes seasons instead of short units (“more time to learn”), affiliation (“work toward common goals”), formal competition (“games become meaningful”), keeping records (“built-in feedback”), culminating events (“recognition of excellence”), and festivity (“celebration”) ⁽¹¹²⁾.

The framing of units as seasons was grounded on the basic premise that fewer activities covered in greater depth would elicit more substantial student learning outcomes. A season occupies an extended period of time in one activity (at least 20-lessons) ⁽⁹⁷⁾. Consequently, a season of SE (a term preferred to the common notion of a curriculum ‘unit’) is often longer than the usual unit. The operational assumption is that such extended time promotes more in-depth understanding of the new managerial and instructional responsibilities to be learned by students. Through students' affiliation into mixed-ability teams, they become members of teams, and remain on the same team throughout the competition. The persisting small-group activities allow students “to plan, practice and benefit from the social development opportunities that accompany membership in a persistent group” ⁽⁹⁷⁾. The season typically unfolds following a schedule of competition. The games that are played count toward a ranking system in which teams are categorized according to their performance. In addition, these competitions are typically interspersed with practices. For instance, a soccer season might start with 1v1 competitions, then 2v2, and finish with a 4v4 final competition. The recasting of learning activities as matches and training sessions toward achievement of common team goals provides an augmented sense of authentic and meaningful participation ⁽⁵⁰⁾. Records are kept for purposes of motivation, feedback, assessment, and to build standards and traditions. This also serves the process of content-embedded accountability. Records from teams' scorings and behaviours may be added to the teams' championship counts. Finally, the seasons should be ‘festive’ in nature. The festive atmosphere of sport enhances its meaning while adding an important social element for participants. Continuous efforts are made by the teacher and students to celebrate student success and a ‘culminating event’ provided to mark the end of the season. These festive events (swimming carnivals, basketball championships, etc.) create the opportunity for festival and celebration of accomplishments.

EDUCATIONAL GOALS OF SPORT EDUCATION

According to Metzler ⁽⁷⁵⁾ and Dyson, Griffin, and Hastie ⁽²³⁾, the pedagogical structures of SE concur to the integrated and multidimensional achievement of social, cognitive, and psychomotor goals. Indeed, Siedentop ⁽⁹⁸⁾ believed that PE should not be reduced to teaching students skills and strategies alone. In his philosophy, the sustainable development of a healthy sporting culture in students at the school context would extend its benefits toward the construction of an improved collective social life ⁽⁹⁸⁾. SE is thus aimed at educating “players in the fullest sense and to help them develop as *competent, literate* and *enthusiastic* sportspersons” ^{11 (97)}. In this sense, along with *authenticity*, the *inclusiveness* and *student curriculum ownership* are two further structural features that concur to the multidimensional achievement of learning outcomes.

Indeed, SE was not drawn to be a direct replication of elite sport, for it rejects the often-dominant culture based on ‘winning at all costs’. On the contrary, SE includes a strong *inclusive* focus. Students are given the opportunity to “engage in the community of practice of sport as legitimate peripheral participants in a variety of roles” other than that of players (e.g., coaches, referees, trainers, scorekeepers, managers) ¹², thereby leading to a more complete understanding of the sport culture ^{13 (61)}. The learners’ trajectories to full participation in the life of their teams are facilitated through participation in small-sided games where everyone plays all the time and in which the secondary rules of games are modified and matched developmentally to the abilities of students. The total experience encloses formalized processes for development of ethical behaviours and fair-play ¹⁴.

A particularly distinctive and pedagogically challenging structure of SE is the level of which students take over of substantial control and ownership for their own learning. For the reason that students are affiliated in persistent team membership, all learning activ-

ities in SE take the format of team-practice sessions in which students are given responsibility to prepare themselves for the championship matches and the ‘finals’ to be held during the culminating event ⁽⁹⁷⁾. Due to the peer-teaching format of the learning tasks, significant instructional responsibility is assigned to students in the role of team leaders or coaches. Examples of such instructional responsibility assigned to the student-coaches are their leadership in content development of the tactics, strategies, and techniques necessary to respond to problems limiting teammates’ game-play during the team-practice sessions or competition events. The coaches are also responsible for conducting most of tasks presentations and instructional interactions for teammates’ development of motor skills and strategic thinking related to game tactics¹⁵. The coaches also assume leadership in managing the power relations operating in the team. Issues such as equity, inclusion and integration of students usually deprived from a fuller participation in the learning activities need to be safeguard in SE ⁽⁸⁾.

THE RESEARCH ON SPORT EDUCATION

In two of the systematic reviews on empirical research conducted in SE, Wallhead and O’Sullivan ⁽¹²⁰⁾ and Hastie, Martinez de Ojeda, and Calderón ⁽⁴⁹⁾ noted two broad categories of publications: (a) articles considering practical strategies required to implement SE (e.g., pedagogical strategies, assessment, the model’s applicability to different activity areas ^(e.g., 23)); and (b) empirical studies designed to evaluate the educational impact of the model on various dimensions of student learning.

The objective of the present article was to conduct a retrospective analysis and consequent ‘executive summary’ of the empirical evidence focused on this second type of publication. The current analysis builds upon the body of studies contained in the four systematic reviews conducted to date on SE: (a) the comprehensive reviews of Wallhead and O’Sullivan (28 studies) ⁽¹²⁰⁾, and (b) Hastie, Martinez de Ojeda, and Calderón (38 studies) ⁽⁴⁹⁾; (c) the review by Harvey, Kirk, and O’Donovan (29 studies) ⁽³⁸⁾; and (d) the review by Araújo, Mesquita, and Hastie (23 studies) ⁽⁴⁾. In order to provide a more up-to-date analysis of the empirical literature, additional papers published from 2011 onwards found congruent and relevant to the objective of this paper were also included in the analysis.

¹¹ A literate sportsperson understands and is knowledgeable about the rules, traditions, and values associated with specific sports, and can also distinguish between good and poor sport practices. An enthusiastic sportsperson behaves in ways that preserve, protect, and enhance the sport culture. With respect to competency, the pedagogical structures that are an integral facet of SE provide an effective framework through which learn the games from a tactical perspective ⁽⁷⁶⁾. The competent sportsperson is hence, one that develops game sense through extensive play practice. Students are expected to become thinking players and skilled performers via what Launder ⁽⁶³⁾ has termed as intelligent coupling of movement technique and tactical components in the game context.

¹² The exact role for each season change depending on the activity/ game/ sport.

¹³ Students play the games, cheer and give tactical instructions to teammates. Others may focus on who has scored or tackled the attacking player, manage the substitutions, the match time, or even replace a ball that went out of borders.

¹⁴ The team sign the ‘ethical contract’ in which an implicit agreement exists between the teacher and student about appropriate conduct in the gym. An ‘ethical committee’ may be formed for supervision of the inclusiveness. The students are regularly held accountable formally by fair-play behaviours during competition, and teams could also score additional points within lessons by exhibiting behaviours reflecting inclusive practices, effort, peer encouragement, and engagement in the managerial tasks (e.g., role performance).

¹⁵ The main of the learning activities are highly goal-oriented and are intended to prepare the teams for the ‘championship’. Tasks should be organized in ways that enact cooperative work, problem solving, critical reflection and students’ face-to-face interaction ⁽²³⁾. The coaches conduct the instructional interactions for knowledge and skill development, which take place through peer teaching and student-led cooperative activities within team practice sessions ⁽²³⁾.

WHAT IS CURRENTLY KNOWN ABOUT SPORT EDUCATION?

Because the realization of SE's core educational goals (e.g., competency, enthusiasm, literacy) was found compatible with the PE standards in a broad of governing bodies ^(1, 109), the first two reviews papers on SE conducted by Wallhead and O'Sullivan ⁽¹²⁰⁾ and Hastie, Martinez de Ojeda, and Calderón ⁽⁴⁹⁾ were organized based on the traditional '5 big aims of PE' ⁽¹⁾: (1) fitness, (2) skill development, game play and tactical awareness, (3) personal and social development, (4) student attitudes, and (5) values. While Harvey, Kirk, and O'Donovan ⁽³⁸⁾ review centred on 'SE as a pedagogical tool for ethical development' approached topics 3 and 4, and Araújo, Mesquita, and Hastie ⁽⁴⁾ review regarding 'the model's impact on student learning outcomes' focused on topic 2, Hastie et al. ⁽⁴⁹⁾ up-grade identified 'students' motivational responses' and 'Learning to teach SE' as new trends to those highlight in the original review of Wallhead and O'Sullivan ⁽¹²⁰⁾. In the intent to align more closely with the foundational learning goals of SE, the information in the current analysis was organized into four domains: (1) competence: skill development, game play and tactical awareness, (2) literacy: inclusion, equity and values, (3) enthusiasm: students' motivational responses and sport culture, and (4) teaching and learning to teach SE.

Competence: Skill Development, Game Play and Tactical Understanding

According to Siedentop ⁽⁹⁷⁾, competent sportspersons show sufficient skills to participate in games at a satisfactory level, are knowledgeable players, and execute strategies appropriate to their skill level and complexity of the game. Although research centred on *competency* development is "burgeoning and developing" ⁽⁴⁹⁾, it continues to be an area somewhat poorly researched ⁽⁴⁾. More importantly, evidence about the effectiveness of SE to promote development of motor skills, game performance and tactical understanding is still inconsistent. The vast majority of these studies focused on team sports (e.g., ultimate frisbee ⁽⁴²⁾, hockey ⁽⁵⁴⁾, rugby ⁽⁹⁾, volleyball ^(5, 92), soccer ^(26, 74), whereas fewer studies addressed individual sports such as athletics ^(47, 86) and badminton ⁽⁵²⁾.

With regard to development of isolated motor skills, there are reports both of positive increments ^(3, 9, 47, 54, 86) and lacks in students' skill improvement ^(1, 92) while the results regarding measures of game-play performance are ambiguous. In regard to skill execution, several studies showed students' improvements ^(5, 52, 92). Contrarily, Mahedero, Calderón, Arias-Estero, Hastie, and Guarino ⁽⁶⁹⁾ reported a lack of general improvement, and further research showed improvements in lower- but not in higher-skilled students ^(26, 41, 74). While studies assessing performance at a class level found improvements in decision-making during game-play (5, 13, 52, 69, 92), in the studies of Mesquita, Farias, and Hastie ⁽⁷⁴⁾, and Farias, Mesquita, and Hastie ⁽²⁶⁾, the girls and lower-skilled students gathered higher learning benefits from SE. Conversely, Hastie ⁽⁴²⁾ showed improvements in appropriate passing decision-making for higher-skilled players whereas those lower-skilled peers showed no

improvements. It was also suggested in the few studies confronting SE with direct instruction classes that SE was a more favourable model to develop performance in volleyball ⁽⁹²⁾ and athletics ^(47, 86). In SE, the students also perceived higher enjoyment and self-competence in the learning of rugby ⁽⁹⁾.

The outcomes related with knowledge development are less equivocal. There are reports of students' improvement in tests of declarative and procedural knowledge ^(9, 47, 69, 92), in the ability to solve tactical quizzes ⁽⁴⁸⁾, and in video-based game understanding tests ^(26, 52).

Researchers have justified the positive improvements in SE with the opportunity granted to students for developing knowledge from observations and judgements made during daily competition and playing roles other than players ^(e.g., 92, 52, 74). A second main argument used is the augmented enthusiasm and motivation generated by the affiliation and teamwork features of the model ^(e.g., 3, 9, 47, 69, 92) and the content-embedded accountability that fosters strong commitment to the learning activities ^(e.g., 42, 86). Mesquita, Farias, and Hastie ⁽⁷⁴⁾ and Farias, Mesquita, and Hastie ⁽²⁶⁾ further speculated that calling students to reflect on tactical problems together with the curriculum ownership granted to the teams were key to stimulate pupils' cognitive development and add meaning and cultural relevance to the structure of the content.

Nonetheless, despite the significant responsibility assigned to student-coaches in the conduct of the learning activities in SE, no reference is made in these studies to the potential effect the student-coaches may have had in the learning outcomes. In fact, some teachers have "questioned the efficacy of a model which relinquishes significant responsibility for teaching content to students" ⁽¹²¹⁾. In line with these concerns, the recent review of Araújo, Mesquita, and Hastie ⁽⁴⁾ suggested that many of the inconsistencies found on students' performance and knowledge development are very likely a consequence of a lack in coaches' leadership skills, content knowledge and instructional skills. However, despite the insistent calls from Wallhead and O'Sullivan ⁽¹²⁰⁾, Hastie, Martinez de Ojeda, and Calderón ⁽⁴⁹⁾ and Araújo, Mesquita, and Hastie ⁽⁴⁾, to date only two studies have focused on the examination of student-coaches' instructional skills and content knowledge ^(43, 121).

Hastie ⁽⁴³⁾ study in floor hockey focused on one coach and his team from an ecological perspective and showed the leader's ability to make small adjustments to application tasks of low complexity in order to fit teammates' ability level. Nonetheless, the feedback was essentially prescriptive and not always appropriate to the situation. A limitation of this study was the lack of attention paid to the actual content taught and learned within the instructional task system. The study of Wallhead and O'Sullivan ⁽¹²¹⁾ found that, while instructionally effective with respect to low-order tactical content, there were gaps in the student-coach domain-specific content and pedagogical knowledge. This reflected into inefficient development of higher order tag-rugby content (e.g., creating and defending space). Two conclusions were commonly highlighted in the two studies. Firstly, although focused in team sports, no evidence was provided suggesting that students in general

were actually engaged by their peer-leaders in the higher order cognitive processes necessary for solving tactical problems of game-play⁽³⁴⁾. Secondly, both studies emphasised the need for teachers providing more effective preparation to student-coaches that might enable successful peer teaching and student learning.

Literacy: Inclusion, Equity and Values

The *literate* sportsperson refers to “people who understand and appreciated the rules, rituals, and traditions that surround sport and are able to distinguish between good and bad sport practices”⁽¹¹²⁾. In Hastie, Martinez de Ojeda, and Calderón’s⁽⁴⁹⁾ own words, the research “support for literacy is ‘emerging’”. In fact, in their review centred on ethical development, Harvey, Kirk, and O’Donovan⁽³⁸⁾ concluded that, from the 25 studies examining inclusion, equity, and values, 11 found strong support, and 14 found moderate support, for meeting the SE’s aspirations to *literacy* development. To mention a few, the lower skilled students did not feel marginalised within their teams and believed that they had equal opportunities for improvement⁽⁴¹⁾. Hastie and Sinelnikov⁽⁵¹⁾ observed students of both genders and skill levels to be actively engaged in motor tasks for the majority of the lesson time. Recently, García-Lopez, and Gutiérrez⁽²⁷⁾ found a positive impact in the integration of students who were usually discriminated against (empathy) and development of leadership responsibility and students’ teamwork (assertiveness).

In contrast, a small number of studies reported mixed findings. For example, Hastie⁽⁴¹⁾ noted a gender stereotype socialisation with boys dominating power roles and having more opportunities to respond in the competition phase of a Floor Hockey season. Parker and Curtner-Smith’s⁽⁸³⁾ study of pre-service teachers’ (PSTs) implementation of SE found the prevalence of hegemonic masculinity. While the more physically able and aggressive boys dominated those who were smaller, less physically gifted and timid, some girls, and less able boys showed conformity to peripheral participation, similarly to that referred to by Tousignant and Siedentop⁽¹¹⁰⁾ as ‘competent bystanding’. In their study centred on five boys and five girls participating in a 26-lesson season of modified Soccer, Brock, Rovegno, and Oliver⁽⁸⁾ explored the influence of student status on group interactions and leadership in decision-making opportunities. They found gender and status to be an influential factor in the amount of playing time that students received during the unit, mostly in favour of boys and popular students. The voices of lower skill-level students were sometimes silenced.

As a common point, these studies stressed that particular deeply rooted conceptions about sporting expectations based on gender stereotypes, pre-established status hierarchies, and negative cultural influences of community-based sports that students transport into the gym, were quite difficult to ‘deconstruct’. More importantly, in some cases, the PSTs themselves have inadvertently supported and reinforced hegemonic masculinity and sexism⁽⁸³⁾. Such ‘forces’ exerted a negative influence in equity and inclusion achievement showing that the pedagogical structures of SE, by itself, may not suffice to correct, overco-

me and modify some stereotypical styles⁽⁸³⁾. Indeed, several authors claimed that although SE’s pedagogical structures are highly favourable to facilitate inclusion, the teachers should be sensible to this goals and actively ‘put structures in place’ (e.g., ‘formal’ engagement in shared discussion, developmentally appropriate game play, positive leadership) in order to capitalize the inclusive opportunities contained in the model^(25, 113). Specifically, Harvey, Kirk, and O’Donovan⁽³⁸⁾ suggested that ethical development could be explicitly addressed by embedding four specific pedagogical applications in SE seasons curriculum: ‘ethical contract’, ‘sports panels’, ‘modified game practice’, and ‘awards’.

However, according to conclusions drawn by the four reviews on SE^(4, 38, 49, 120), as important as the pedagogical application of additional inclusive structures, it is crucial that researchers conduct a thorough examination of the power dynamics operating during students’ social and instructional interactions. These may either facilitate or restrain students’ access to their teams’ ‘capital and human resources’⁽⁶¹⁾. Irrespective of such request, there is still a stark void of research examining the way teachers are conducting the processes of devolution of power from the teacher to the coaches (e.g., develop role proficiency, assigning responsibility, and gender balance). The in-depth examination of students’ perceptions, use of power and motivations to promote equity during SE would provide valuable information on potential ways to overcome negative stereotypes, inequity and lack of inclusion.

Enthusiasm: Students’ Motivational Responses and Sport Culture

The *enthusiastic* sportsperson finds meaning in his or her sports experiences in PE, places high effort in the activities, and preserves and acts in ways that transfer the healthy values cultivated in SE to the daily sport and physically active life⁽⁹⁷⁾. The impact of SE on enthusiasm has been tested empirically mainly in reference to motivational outcomes. These studies have been primarily focused on measuring the perceived and objective climates of SE seasons^(e.g., 103, 119) and motivational changes that take place over a SE season^(e.g., 102, 106, 116). Some research has compared students’ motivation within SE and in direct instruction/multi-activity units^(e.g., 73, 82).

As a case in point, Wallhead and Ntoumanis⁽¹¹⁹⁾ found the motivational climate generated in SE to be influential in students’ adoption of mastery and goal oriented goals with positive effects in enjoyment and self-determined participation in the activities. Spittle and Byrne⁽¹⁰⁶⁾ found SE to be effective in maintaining high levels of student intrinsic motivation¹⁶, task orientation, and mastery climate. It was suggested that students personally grasped the value for game play and team building leading to increased self-competence perceptions and commitment toward participation in the activities. While Mendéz-Giménez, Fernández-Rio, and Mendéz-Alonso’s⁽⁷³⁾ comparative study involving 295 secondary school students

¹⁶ Intrinsic motivation occurs when individuals engage voluntarily in an activity for its own sake, whereas, extrinsic motivation occurs when individuals are motivated by external factors, such as rewards and social recognition⁽²⁸⁾.

suggested that SE offered more advantages than a traditional teaching method to develop adolescents' achievement, social goals, and sportsmanship, the study of Parker and Curtner-Smith ⁽⁸²⁾ found similar ego-involving climates in SE and multi-activity teaching. It was argued this was a consequence of teachers' misinterpretation of SE and consequent overemphasis of its competitive elements.

A key underlying intent in the development of the *enthusiastic* sportsperson is the transfer of students' healthy experiences in PE to those to be lived in the wider world of sport. Recently, researchers have started to explore potential relationships between motivational aspects and social goal developed during participation in SE and participants' self-determined participation in leisure-time exercise ¹⁷ (116, 122, 123). In the study of Wallhead, Garn, and Vidoni ⁽¹²²⁾, after participation in four 25-lessons seasons taught along one school year, a total of 363 10th grade students completed a questionnaire, which revealed the robust contribution that social recognition and social affiliation goals made to students perceived relatedness¹⁸ and enjoyment of PE. Social recognition and status goals also significantly positively predicted extra-curricular exercise participation. However, students' motivation for leisure-time physical activity was not entirely confirmed in the authors' follow-up study examining students' perceptions over participation in a 2-year SE program ⁽¹¹⁶⁾. It was suggested that the lack of appropriately designed extracurricular programmes might have restrained students' intention for participation in physical activities beyond those offered in the PE context. Nonetheless, a potential limitation in these studies was the total absence of information on the way the teaching-learning process was conducted in the two research settings. This made it impossible to understand what specific elements along the process might have influenced the contrasting results.

Kirk and Macdonald ⁽⁶¹⁾ advocated that through peripheral participation within the 'communities of practice' provided by the persisting groups, SE has the potential to transform what constitutes sport in the broader world. However, although SE was conceptualized to enhance the explicit links between experiences in PE and the promotion of a positive sport culture, SE is yet to fulfil a socially transformative agenda ⁽⁸⁵⁾. Wallhead and O'Sullivan ⁽¹²⁰⁾ stated this has much to do with the fact that research "has focused on lesson context and predominantly assessed student outcomes based on experience of a single unit or season of the curriculum" (P. 204). The importance of exploring the effect of time was also an issue recently uncovered in the review of Araújo, Mesquita, and Hastie ⁽⁴⁾. The authors advocated for application of more longitudinal data collection protocols. It is believed that student

participation in more than one season consecutively over time would benefit the dynamics of the social and instructional systems occurring within working groups (teams) leading to improved relational interplays among students.

Teaching and Learning to Teach Sport Education

The literature that guides the design and practical application of SE seasons is not entirely consensual to what and how should be developed the role of the teacher as a facilitator. Siedentop, Hastie, and Van der Mars ⁽⁹⁹⁾ advise teachers to deliver whole group direct instruction or guided practice during early parts of a SE season and then, actively guide the gradual shift toward more responsibility for and student ownership of the SE experience. Metzler ⁽⁷⁵⁾ conceptualized the role of the teacher as a "guide on the side" (p. 142). Students should initially be provided a reasonable amount of autonomy through the use of indirect teaching strategies (e.g., coaching task cards) while the teacher becomes active only when the students 'get stuck' or ask for help ⁽⁷⁵⁾.

Research in PETE has attempted to capture the processes by which PSTs learn to teach SE by exploring the mechanism that facilitated or inhibited learning ^(19, 29, 72, 107, 108), and the compliance and extent to which PSTs applied SE in its full version ⁽¹⁹⁾, and the PSTs' perceptions and forms of application of SE ^(20, 82, 115). Most of these studies showed different levels of interpretation and application of SE that were influenced by endemically rooted conceptions of sport brought into the gym by PSTs as a consequence of prior occupational socialization.

Research has also analysed the impact of professional development programs on in-service teachers. The study by Curtner-Smith, Hastie, and Kinchin ⁽¹⁹⁾ showed the espousal by beginning teachers of 'full version' ¹⁹, 'watered down' ²⁰, and 'cafeteria' ²¹ styles in the implementation of SE. Other studies showed both resistance and acceptance to teach using SE ^(19, 70). One other study has found varying levels of alignment between what teachers planned and actually enacted within the SE unit, with teachers implementing less and/or modified down the SE elements stipulated within the unit plan ⁽⁶²⁾. The teachers' acculturation, professional socialization and organizational socialization were among the factors that most influenced the results ⁽¹⁹⁾.

There is consensus in literature on student-centred approaches that high order cognitive and performance outcomes are only likely to be achieved through students-led instruction if there is thorough mediation of the teacher as a facilitator ⁽³⁰⁾. It involves the teachers

¹⁷ Participants rated their weekly behavioural frequency on a single item: 'In the course of the past seven days, outside of physical education class, how often have you participated in active sports and/or vigorous exercise lasting more than 20 minutes at a time?'

¹⁸ Deci and Ryan ⁽²¹⁾ define relatedness as caring for and feeling cared for by others and suggests that relatedness is a psychological need integral for human growth and development.

¹⁹ Congruent with the spirit of Siedentop's ⁽⁹⁷⁾ intentions. Seasons were significantly lengthy, purposefully promoted team affiliation and festivity, and involved students in numerous playing and nonplaying roles.

²⁰ The teachers misinterpreted the model conceptually and practically. Watered-down seasons organized shorter units primarily around formal competition, but failed to include many of the other elements that transform traditional sporting units into sport education seasons.

²¹ The pre-service teachers merely 'incorporated' parts of SE.

taking on the role of 'activators' of learning. This calls for the use of versatile and responsive styles of instruction that comprehend a series of dialogical exchanges ranging in directedness from modelling behaviours to providing explanatory structures and feedback, praise, or providing intermediate support through hints ⁽¹¹¹⁾.

However, despite the importance acknowledged to the teacher as a facilitator in SE, a complete void remains of research that explicitly informs teachers and researchers on how instructional and peer-teaching mediation processes can be effectively developed within the model. This is even more critical in light of recent warnings from reviews on SE ⁽⁴⁾ that teachers in SE may not be preparing the student-coaches efficiently to deal with the leadership responsibilities necessary to conduct effective learning through peer-teaching activities. Despite the insistent appeals from all reviews calling for teachers' delivery of effective protocols for coaching preparation, this remains unanswered by research ^(4, 49, 120).

WHAT ARE THE PREVAILING METHODOLOGICAL LENSES OF RESEARCH IN SPORT EDUCATION?

The analysis of the studies within the reviews of research on SE ^(4, 38, 49, 120), and additional more recent publications, showed a similar predominance of quantitative and qualitative studies, and in a lesser number some studies using both qualitative and quantitative data collection methods. In this section, as the analysis proceeds, an intersection is made between the predominant designs (e.g., pre-post test, comparative, exploratory) and research methods (e.g., systematic observation, surveys) used to collect data.

Quantitative Research Studies

Nearly all the quantitative studies used *evaluative* ²² *pre-post test* designs. Within these, most studies intended to evaluate the impact of students' participation in SE and application of different programmes exclusively in one single unit of SE. In a minor number, some evaluative studies *compared* ²³ the impact of SE with direct instruction and multi-activity approaches, also in single units of instruction.

From the pre-post test data collection protocols centred exclusively on SE, the main part evaluated performance and knowledge outcomes (skill development, game play, and tactical understanding) (e.g., 26, 52, 69, 74) and students' motivational responses (e.g., 50, 102, 119). A few other studies focused on the effects of SE on participation in leisure-time physical activity ⁽¹¹⁶⁻¹¹⁸⁾, social values development (e.g., 27), participation and game involvement (e.g., 41, 117), students' role-playing (referees) ⁽⁶⁵⁾, physical activity levels ⁽⁵⁴⁾, and PSTs' autonomous instruction ⁽⁸⁹⁾.

The pre-post test studies comparing SE to other teaching structures (e.g., the direct instruction model) addressed domains such as performance and knowledge development (e.g., 9, 47, 86, 92), motivational outcomes ^(73, 88, 106), aerobic fitness ⁽⁵³⁾, or development of social goals ⁽⁸²⁾.

²² A single group 'natural experiment' consisting in the evaluation (usually in two moments in time) of occurrences as social and organizational programmes or interventions ⁽¹¹⁾.

²³ Entails studying two contrasting cases using more or less identical research methods ⁽⁸⁴⁾.

Besides the use of pre-post test designs, a residual number of studies used data collected from the daily observation of lessons. These researches assessed the impact of SE on PSTs' autonomous instruction ⁽⁸⁹⁾ and daily motivational climate ⁽¹⁰³⁾. Additionally, the studies by Alexander and Luckman ⁽¹⁾, and Kinchin, Wardle, Roderick, and Sprosen ⁽⁵⁹⁾ were based on data collection in one sole moment in time (post-participation).

With respect to the most researched variables and methods utilized, the majority of studies employed systematic observation instruments to assess frequency, nature, or duration of behaviours. Some examples are the Game Performance Assessment Instrument ⁽⁸⁰⁾ for assessing game-play (e.g., 92), the Academic-Learning Time in PE (ALT-PE) ⁽¹⁰⁰⁾ to quantify task accomplishment (e.g., 40, 43), the Behavioural Evaluation Strategies and Taxonomies ⁽⁹⁶⁾ to record the frequency of game play participation ⁽¹¹⁷⁾, or the System for Observing Fitness Instruction Time (SOFIT) ⁽⁷¹⁾, for instance in the study by Hastie and Trost ⁽⁵⁴⁾.

A few studies have also measured changes in time by taking in reference the students' and teachers' perceptions. These measures included pre-post test inventories (e.g., perceived autonomy support ⁽¹¹⁸⁾), surveys (e.g., examining the autobiographical memories of students' experiences of three years of participation in SE ⁽¹⁰⁴⁾), questionnaires (e.g., basic psychological needs and sportsmanship ⁽⁷³⁾), or used the situational intrinsic motivation scale ^(95; e.g., 102, 106, 119).

Although the contribution of quantitative research was unquestionably valuable for gathering knowledge on the impact of SE on students' learning, social, motivational, and fitness outcomes, the type of inferences drawn from this studies are potentially problematic. Indeed, only a few studies have used mixed data collection methods to combine information gathered from systematic observation of behaviours with data from participants' perceptions based on questionnaires and post-intervention interviews ^(9, 41, 43, 51). In summary, a potential downside in most quantitative research in SE was the drawing of inferences and interpretation on the causality of the results without taking into consideration the participants' point of view. Furthermore, there is scant examination of the teaching-learning process that might shed light on what, how, and why specific elements within the process might have influenced the outcomes.

Qualitative Research Strategies

The preponderance of the qualitative studies has been of exploratory nature (i.e., no intention of comparing changes in time) and based on the examination of students' and teachers' perceptions over participation in SE. Within these, a small number of studies explored qualitatively the participants' experiences in SE in light of particular conceptual and theoretical frameworks or intervention programmes. Namely, some PETE programs used cognitive learning and socialization theories to examine how PSTs learned to teach SE and were influenced by their beliefs ^(19, 70), explored the impact of in-service professional development programs ^(101, 108), and student development of personal and social responsibility ⁽⁴⁵⁾.

The most commonly used data collection methods consisted of semi-structured interviews made to teachers and students ^(e.g., 7, 56, 57, 67). The research has also used participant/ non-participant lesson observations ^(e.g., 10, 43, 55, 57, 107, 121), students' drawings ^(e.g., 68, 77), and post-participation surveys ^(e.g., 2, 37), students' logs ^(e.g., 6, 8), and teachers' reflective journals and field notes ^(e.g., 2, 56, 90).

However, irrespective of the qualitative nature of these studies, there is a lack of examination of the teaching-learning process in ways that might have provided a deeper insight of the phenomena studied. Indeed, the information about the teaching-learning elements provided in most research is limited to the number of lessons, the sport selected for the seasons under examination, the characterization of the season and the outline of the content presented within each of the lessons ^(e.g., 92, 119). Moreover, as early as in their 2005 review (and recently reiterated by Hastie, Martinez de Ojeda, and Calderón ⁽⁴⁹⁾ and Araújo, Mesquita, and Hastie ⁽⁴⁾), Wallhead and O'Sullivan ⁽¹²⁰⁾ cautioned us that our knowledge of the effect of the curriculum on varying dimensions of student learning is predominantly limited to inferences made from single units or season experience of SE. It was commonly claimed the need for more longitudinal data collection protocols which extends past the end of one or two units. This call also included the use of research designs that can access a deepened analysis and control of the teaching-learning process in relation to aspects such as the devolution of content knowledge from the teacher to the student-coaches or the instructional and power dynamics operating within peer-teaching tasks.

FUTURE AVENUES FOR RESEARCH IN SPORT EDUCATION

The synthesis of the data based research on SE conducted over the past two decades points to a strong trend of success in facilitating the development of competent, literate, and enthusiastic sportspersons ^(4, 38, 49, 120). However, our reading of the research prompts us to advise that mere participation in SE may not necessarily result in students' spontaneous development of inclusive and cooperative behaviours, promotion of higher order cognition through peer-interaction, or growth of positive leadership skills. While we subscribe Hastie et al.'s ⁽⁴⁹⁾ assertion that "the question now is to identify areas of research that are still under-developed", we further supplement there is much work yet to be done. Ways must be found to help SE evolve towards full realization of its potential for holistic achievement of educational goals.

We highlight two specific areas where knowledge is currently lacking in which future research can add a decisive contribution to more matured investigation and future applications of the model. Future research should provide information on (a) how to safeguard achievement of performance outcomes and knowledge development through effective coaching preparation; it is further required (b) the in-depth examination of the instructional, relational, and power dynamics operating within peer-teaching interactions. Two lines of inquiry are relevant: the (a) 'examination of the teaching-learning process', and (b) 'exploring the effects of time'.

Examination of the Teaching-Learning Process

As discussed earlier, the vast body of research conducted on SE involved pre-post test quantitative behavioural measures and qualitative exploratory designs based on students' and teachers' perceptions on the model's impact. In many cases the interpretation of the outcomes has been based on speculative inferences not supported by a thorough analysis of the teaching-learning process operating within the scenarios studied.

One critical aspect of the teaching-learning process clearly under-researched is the instructional processes used by teachers to prepare the student-coaches for leadership and instructional responsibilities. An integrated analysis of the teachers' instruction and students' development is necessary in order to gather knowledge on the effects of the teachers' mediation in the conduct of peer-teaching tasks by the student-coaches. It is critical to generate knowledge that can inform teachers on how to effectively implement SE. As Goodyear and Dudley ⁽³⁰⁾ point out, a danger arises when teachers view themselves simply as a 'guide on the side' ⁽⁷⁵⁾, as teachers may remove themselves from the teaching and learning process due to limited understanding of how to interact with learners in the role of facilitator.

Furthermore, the specific content of the peers-led instructional interactions needs to be studied at a micro-level. In fact, wide research in peer-assisted learning contexts other than SE have shown that the group leaders could only engage peers in higher-order instructional interactions when these leaders received specific training (e.g., learning about question-asking instruction) ⁽³⁰⁾. However, while this is a key tenet of student-centred approaches ⁽²³⁾, it is still not clear if the student-coaches in SE are in fact engaging their teammates in higher order cognitive processes and cooperative interactions leading to effective learning.

Wallhead and O'Sullivan ⁽¹²⁰⁾ suggested that case studies and ethnography might be key for studying such research problems leading toward an evolved practical application and study of SE. Such research designs hold the potential to investigate a particular phenomenon within its real-life context toward reaching a deeper understanding of unique situations. The authors also urged researchers to move beyond mere qualitative descriptive or evaluative research designs. The call here is for the undertaking of socially transformative and 'emancipatory' research agendas. Understanding why inequities occur from students' point of view, and on that basis act upon the problematic while students are still living their SE experience, would help children gain enlightenment about social constraints and injustices restraining their learning experiences. This would potentially raise a consciousness on the impact of individual action and behaviour on peers' well-being, while helping students to discover possible "courses of action by which they may liberate themselves" ⁽¹⁵⁾. The 'emancipatory' action research designs are particularly helpful for their dynamic, flexible, cyclical, and reflective nature. Action research is capable of keeping pace with the on-going social change and continuous construction and testing of explanations in practice, leading to improved understanding and learning.

Exploring the Effects of Time

Despite the insistent claims by research ^(4, 120) for introduction of more longitudinal data collection protocols, the findings in nearly all research in SE have been drawn from inferences taken from single units or season experience of the model. Bryman ⁽¹¹⁾ accentuated that longitudinal designs are essential if the research purpose is to measure social change. We further sustain that longitudinal data protocols can be used to locate the causes of social phenomena as it allows establishing connections between events widely separated in time in order to detect the direction, patterns and magnitude of change in the individuals.

To our knowledge, only five studies have considered students' participation in more than one isolated season of SE. However, only the seven-month period ethnographic study conducted by O'Donovan ⁽⁷⁹⁾ and the yearlong case study led by Clarke and Quill ⁽¹⁷⁾ had a focus on the teaching-learning process and students' interactions. O'Donovan ⁽⁷⁹⁾ found that negative social goals pupils brought to the PE class influenced participation and were gradually modified in the course of the school year. According to Clarke and Quill ⁽¹⁷⁾, the SE model gave pupils a more authentic and less abstracted learning experience, which has improved their understanding and performance in games and gymnastics. Conversely, although taken in reference to students' participation in consecutive seasons of SE involving team sports, the studies of Wallhead, Garn, and Vidoni ⁽¹¹⁶⁾, Wallhead, Garn, Vidoni, and Youngberg ⁽¹¹⁷⁾, and Sinelnikov and Hastie ⁽¹⁰⁴⁾ were based on pre-post test surveys and on data collected in one moment in time after the participants' enrolment in SE. As a limitation in these studies no examination was conducted on the development of the teaching-learning process that might shed light on the *whys* and *hows* associated with the findings. Such research designs do not allow for generalizations that might be forthcoming from prolonged student participation in SE seasons. For instance, taking the case of the learning of team sports, a principal topic in PE in general and SE in particular, it remains untested and purely speculative the assumption that it is possible for students to transfer tactical knowledge and performance across time and between consecutive units of games that hold similar characteristics ⁽³⁴⁾.

ACKNOWLEDGEMENTS

The authors would like to thank Rui Araújo (Faculty of Sport, University of Porto, Portugal) for his assistance with the preparation of this manuscript.

This work was supported by the Portuguese Foundation for Science and Technology (FCT) / POPH / QREN / European Social Fund [grant number SFRH / BD / 87866 / 2012].

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<https://doi.org/10.5628/rpcd.16.01.97>

RESUMO

O presente trabalho teve como objetivo discorrer sobre os conceitos inerentes à visão ecológica do desporto e o recurso a metodologias não lineares enquanto tendências evolutivas na investigação da análise de jogo e da performance. Através de uma análise da literatura sobre a temática em questão é possível destacar que: 1) a visão ecológica do desporto baseia-se na aplicação de teorias complexas, tais como a teoria dos sistemas dinâmicos e complexos, e na adoção de metodologias mais robustas para uma melhor interpretação e compreensão do fenómeno que é a performance desportiva; 2) a aplicação tanto desta nova abordagem ecológica do desporto como das metodologias não lineares que a acompanham, são observadas maioritariamente em contexto de treino, tendo menor expressão em contexto competitivo; e, finalmente, 3) no que concerne ao estudo da modalidade de voleibol, não foram encontrados estudos que comportem as teorias e métodos subjacentes à mais recente visão ecológica do desporto. Neste sentido, realça-se a necessidade de aplicação desta nova abordagem teórica à análise de jogo e da performance, em geral, e no voleibol, em particular, para que seja possível traduzir e não apenas descrever o desempenho desportivo, nomeadamente no que respeita à variabilidade do comportamentotático coletivo das equipas.

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Tendências evolutivas na análise do jogo e da performance: A visão ecológica do desporto e a adoção de metodologias não lineares

PALAVRAS CHAVE:

Análise de jogo. Análise da performance.

Teoria dos sistemas dinâmicos.

Variabilidade. Voleibol.

SUBMISSÃO: 3 de Janeiro de 2016

ACEITAÇÃO: 15 de Março de 2016