

An Approach to Tactical Performance Optimization in a Big Data World

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The amount of data collected from an individual player during a football match has increased significantly in recent years, following technological evolution in positional tracking. However, given the short time that separates competitions, the common analysis of these data focuses on the magnitude of actions of each player, while considering either technical or physical performance. This focus leads to a considerable amount of information not being taken into account in performance optimization, particularly while considering a sequence of different matches of the same team. In this presentation, we will present a tactical performance indicator that considers players' overall positioning and their level of coordination during the match. This performance indicator will be applied in different time scales, with a particular focus on possible practical applications.

The Use of Self-Organizing Maps to Assess Tactical Training Effectiveness in Team Handball

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In sports game analysis, researchers primarily focused on players' behavior during competitions. However, there is a lack of research regarding the assessment of transfer of tactical measures from training into competition. Therefore, this study aimed to assess the outcome of a tactical training intervention by a self-organizing map (SOM).

Offensive action sequences were determined from 12 official handball youth national team games in 2012. Each of the annotated action sequences contain position data from the last 5 passes prior to the shot and the shot itself (Schrapf & Tilp, 2013). Commercial software (neurosolution®) was used to cluster the action sequences into 27 tactical patterns by means of an SOM. A male handball team (17 ± 0.5 years) trained the most commonly occurring patterns for 6 weeks, 6 times a week for 60 min to 75 min against a 6:0 defense system.

Following this training period, the team played a test game advised to use the trained target patterns as often as possible, while defenders were instructed to apply the 6:0 defense system. Subsequently, the position data of the offensive action sequences were tested with the SOM to analyze the assignment to the target patterns.

From 43 successfully played offensive action sequences in the test game, the SOM assigned 25 sequences (58%) to the target patterns. The remaining 18 sequences (42%) were associated with other patterns. The mean distance between the positions of the target patterns and the related pathways was less than 0.50 m, indicating a good accordance.

The application of an SOM appears to be an adequate method to recognize trained tactical patterns during competition. Offensive patterns classified during competition resembled the target patterns with high accuracy. Combined with automated tracking, the method could provide valuable feedback for coaches regarding the accuracy of the implementation of tactical trainings.

Symposium:

Learning to Teach TGfU: Pedagogical Ventures With Preservice Teachers

Chairs: H. Bohler¹ and D. Sheehy²

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In this symposium, presenters will explore preservice teachers' (PTs) learning of constructivist teaching and teaching games for understanding. Presenters will share some of their individual work with PTs at their own institutions, how learning is situated, and general outcomes of work with PTs. Sharing in this session will include PT work products and ideas for engaging PTs' understanding of pedagogical approaches to teaching games.

Incorporating the TGfU Framework Into PETE

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The purpose of this presentation is to share a physical education teacher education 6-stage model for learning