The study of pedagogical content knowledge of team handball coaches

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INTRODUCTION

Theoretical base

This study is focused on the pedagogical content knowledge of experts, coaches and players of a Handball Team on a specific content. Thus, this study may be included in the framework of Sport Pedagogy, in the context of coaches’ preparation and the paradigm of the mediating processes centred in the teachers/coaches’ and student/player’s thinking (Clark and Peterson, 1986; Lee and Solmon, 1992; Piéron, 1993; Wittrock, 1986). In this perspective, we have adapted the heuristic model on research on PE teaching elaborated by Carreiro da Costa (1996) (Figure 1).

Figure 1- Research on Sport Pedagogy (Adapted from Carreiro da Costa, 1996)

Objectives

This study aims at:
a) Validating the conditions and factors experts, coaches and players claim to make the following content learning easier: Winger shot diving jump -WSDJ-).  
b) Comparing the level of concurrence between experts and coaches.

**Design of the study**

**Hypothesis**

1. There is a lack of a specific methodological design for the teaching of the Winger shot diving jump among experts, coaches and players.
2. The lack of a specific methodological design guiding the coaches’ intervention in the different stages of the players’ learning is the consequence of a lack of conceptual cohesion which affects both their planning and teaching decisions.

**Methods**

The study was developed from a multidimensional perspective considering four analysis dimensions (Figure 3):

1. Game observation, to check how the players perform the throwing technique, by means of systematic observation use.
2. Experts’ thinking, to check how to perform the throwing technique and in its corresponding teaching (pedagogical content knowledge), by means of a specific interview, organized into questions about classification, knowledge and thinking.
3. Coaches’ thinking, to check whether they had received any preparation on this technique and how they act when teaching it (pedagogical content knowledge), by means of a specific questionnaire with questions on classification, knowledge and thinking.
4. Players’ thinking about the handball throwing technique learning; data were collected by using a specific questionnaire.

**Data analysis**

Data analysis was accomplished through:

a) a qualitative and quantitative analysis;

b) a qualitative description conducted to provide more depth to the interviewed experts’ answers and the questionnaires given to the coaches and players;

c) examining the discourse by means of content analysis, from which a system of categories was generated by using the inductive method, followed by an interpretative analysis.

![Figure 3 – Design of study](image-url)
Results

A summary of the results is presented, in which we observe that there are differences with a high heterogeneity as for the different questions of this study, namely: In the planning decisions and in the pedagogical content of the different sessions.

a) Among the experts
   - In the pedagogical content criterium
   - In the factors facilitating teaching-learning

a) Among the coaches:
   - In their preparation
   - In the teaching-learning difficulties
   - In the planning decisions and in the teaching methodological criterium about: Frequency of content teaching, ages to be taught, number of sessions, category and number of objectives, objectives proposal sequence, type of exercises, material

b) Among the players:
   - In the practical situations experienced in learning: age, number of sessions, category and number of objectives, objectives sequence, type of exercises and material.
   - In the teaching-learning difficulties Between experts and coaches: In the coaches’ thinking on how to act while teaching and the situations promoting the coaches.

c) Between experts and coaches
   - In the coaches’ thinking on how to act while teaching and the situations promoting the coaches (Figures 3,4).

![Graph](Image)

Figure 3 - % experts/coaches: objectives of each categorie
d) Between coaches and players

Differences between what the coaches say and what the players say they do (Figures 5,6).
Conclusions

- There is a lack of specific, scientifically validated, methodological design on the teaching of a particular content. The lack of a curricular design in sports, guiding coaches in the preparation of players in the different stages of learning generates a lack of conceptual and methodological cohesion in the coaches’ thinking process and knowledge, affecting their decisions on planning, which are marked by their predominantly self-taught nature.

- In the coaches’ preparation, teaching is fundamentally based on the transmission of the technical content knowledge, but there is a deficit in the transmission of the pedagogical content knowledge. This is the reason why there is such high heterogeneity in the coaches’ teaching criteria. Thus, it seems necessary to make further research on curricular development, both as for the sequence and the methodology of content teaching, in order to scientifically substantiate curricular development.

- It is convenient to create a sport curricular design, guiding coaches’ teaching during the players’ different preparation stages. It is thus necessary to promote communication among the different coaches’ schools and to encourage the dialogue among the corresponding teachers, in order to meet and adjust the objectives and contents of the subjects they teach. It is necessary that experts find a dialoguing space and that a group may be created to study, discuss and come to a consensus on the teaching contents, so that a common pedagogical criterion regarding their teaching methodology may be established; as well as for the creation of necessary documentation to be part of the coaches’ schools, to be used in their preparation. This process should promoted by the sport and educational administration.

References
Clark & Peterson (1986). Teacher’s “Thought Processes”. In M.C. Witrock (Eds.), Handbook of research on teaching (3rd ed.). New York: McMillan.