A DIDACTIC MODEL FOR COMPETENCES BUILDING IN SPORT GAMES

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INTRODUCTION

Several Studies in sports games found that the best players have larger quantity of declarative and procedural knowledge (Ericsson et. al., 1993), some authors (Pellegrino, 1998; Eysenback; Keane, 2000) refer to the extension of acquired knowledge as the fundamental difference between experts and novices. Up on this knowledge, the experts are capable of collect the most relevant information from the environment and to make the appropriate decisions to meet the specific requirements of the current situation. The experts seem to bear the necessary knowledge to carry out effective decision making processes to succeed. This knowledge is acquired on the base of a long period of intentional practice (Deakin; Cobley, 2003).

From a traditional perspective, in teaching sets the sport games are divided into small units, according to the principle "from easy to difficult". This analytical approach produces nevertheless, that at the moment of shaping the parts into a whole, the ensemble does not work fluently, what works well as a unit does not work the same in a context of opposition where the pressure of opponent and time are the characteristics of the game. The technical skills may be very accurate in isolated situations (e.g., shoot to the basket without opponents, dribbling around a cone, shooting a static ball, etc.) but in game actions, the sensations and the game demands are quite different of that of an isolated exercise. In most of the cases can the player learn the components of the game, i.e. conditional and coordinative abilities and technical skills; however, the player is alone and does not have the help of the teacher at the moment of bringing the parts together, i.e. during games, and he has to fit the pieces together under pressure of time and opponents.

We prefer not to divide the game in parts, but simplify it. That implies a more simple game that does not lose its essence, the cooperation-opposition. In this way, our proposal consists of a didactic model called the Didactic Model of the Game Action Competences (DMGAC) which is composed of several didactic strategies: 1) smaller and simpler games, a modification of the Small Sided Games (SSG) which we call Easy Small Sided Games (ESSG), these games are characterized for the joker player, a player who has the mission of playing always for the team in possession of the ball, that produces a superior number of players in offensive and therefore an easier offensive game. Such games are proportionally combined with 2) Psychokinetic Games (PKG), i.e. games with high requirements to the cognitive skills played with partners but without opposition and 3) exercises (EX), i.e. the player exercises the technical abilities alone or with partners. The percentage of ESSG is in any case greater than that of PKG and EX. With such a proportional combination, in favour of the ESSG, it is the acquisition and development of game and cognitive skills and to prepare for the competition.

The ESSG take different settings, according to the competencies to be learned, it is a global method with focused attention (Sanchez, 1986).

The goal of the DMGAC is an implicit learning of game skills and knowledge construction through manipulated game actions and game tasks to solve. The focus is on the improvement of the game action.

METHODS

Participants

The participant subjects were 30 football players of 10 - 12 years with a least one year of football experience and who train regularly twice a week a play an official game on weekends. Attending the proposal of Mezler (2005) of not comparing didactic models which intend different learning goals it was not used a control group (usually learning through the traditional didactic model of direct instruction) in this study.

It was requested the written permission of the subjects and their parents, it was assured the images, videos and data of the evaluation and training sessions were taken only for the research proposes and treated anonymously.

Instruments

The Team Sport Assessment Procedure (TSAP) (Gréhaigne; Godbout; Bouthier, 1997, 1998, Oslin, 2005) was used for the evaluation of the performance of the entire team in the three scheduled evaluation dates.

Three evaluations of the game competence was carried out as part of the study: a pre-test, a post-test and a retention-test two weeks after the end of the intervention period, with the help instrument (TSAP).

The evaluation procedure took place during a formal game. For each player a section of 10 minutes of game was analysed with the (GPAI) and the full game was analysed with the TSAP.

Intervention

The intervention procedure consisted of a series of 10 training units, where the DMGAC approach was applied. Within each session ESSG were carried out for the learning of techniques with the ball and basic principles of the game without ball (Gréhaigne et al., 2005), .i.e. the techniques and principles should be learned "In vivo". Each player spent a third of the learning time out of the game, where they worked on cooperative games (CG) and technical exercises (E) outside the game i.e. they practiced the techniques

„in vitro“ during no more than 35% of the main part of the session (excluding warm and fitness tasks). When the training time for the players “In vitro” was gone, they went again into the game as substitutes for the other players who also execute CG and E „in vitro“ but with other contents oriented to their own needs. The exercise period might also be divided in several periods between sections of game sections (e.g. 20 minutes of „in vitro“ work could be divided in 4 parts of 5 minutes, in every part the players left the game, practiced the exercises and came back to play). The process looked like a formal game when some players were substituted but who leave the game did not remain seated, they practiced CG and E and after a determined time they came back into the game.

Statistical analysis

The adoption of the normal distribution was checked by the Kolmogorov-Smirnov test. The results refute the assumption of normal distribution of the mean values of some of the variables at certain measured time points (mean post-tests NB $p < .05$; retention test LB $p < .05$; retention test SS $p < .05$, and retention test EI $p < .05$). Therefore, nonparametric tests for the difference of the mean values of all variables at the three time points were used.

RESULTS

The following variables were collected through Team Sports Assessment Procedure (TSAP): Conquered balls (CB), received balls (RB), neutral balls (NB) lost balls (LB), offensive balls (OB), successful shots (SS), attacked balls (AB), played balls (PB). Also an execution index (EI) was calculated. In Table 1 are presented the results of the application of the measurement procedure for the three time points: pre-, post-and retention test. Improvements are found both in the offensive (OB) and in defensive variables (CB). The number of errors (LB) was slightly reduced and also that of the neutral balls (NB). The indices calculated for the observed variables (Attacked Balls (AB), played balls (PB) and execution index (EI)), were improved in the post-test. The values in the retention test after a period of three weeks without training are still higher than those observed at the beginning of the study in the preliminary test.

Table 1 - Mean (M) and standard deviations (SD) of the variables of the TSAP: CB: Conquered balls, RB: Received Balls, NB: Neutral Balls, LB: Lost Balls, OB: Offensive ball, SS: Successful shots, AB Attack Balls, PB: Played balls, EI: Efficiency index in pre-, post-, and retention-test (n = 30)

	CB		RB		NB		LB		OB		SS		AB		PB		EI	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Vor	4,50	2,97	7,17	3,01	2,42	1,38	3,75	2,22	3,33	2,10	1,33	1,23	4,67	2,35	11,67	4,54	0,64	0,23
Post	5,25	2,67	7,50	2,84	2,00	1,41	3,17	1,75	5,50	2,35	1,92	1,56	7,42	3,00	12,75	4,67	0,96	0,34
Ret	5,08	2,39	7,92	3,42	1,67	1,07	3,75	1,71	5,08	3,34	1,58	1,08	6,67	3,5	13,00	4,73	0,85	0,36

A Friedman test showed significant differences only for the calculated efficiency index (EI). The analysis with the Wilcoxon test with Bonferroni correction indicated significant difference between pre-test, and post-test ($t = -2.31$, $k < .05$), but not between pre-test and retention-test ($t = -1.81$, $k > .05$), nor between post-test and retention-test ($t = -1.02$, $k > .05$).

From a descriptive viewpoint, it was determined the percentage of differences observed in the variables and their changes between pre-test and post-test. From a defensive perspective, the ratio of the recovered balls (CB) has been improved by three per cent and the neutral balls (NB) and the rate of lost balls (LB) were reduced with the training program by five percent. The attacking passes (OB) and the index of attacks (AB) have increased by 14 percent and 17 percent.

DISCUSSION AND CONCLUSIONS

The results of this study show a slight tendency to increase the values for the variables of the offensive and defensive game. The number of recaptured balls was slightly increased. The offensive play has been significantly improved, the number of passes "forward" increased remarkably. The attack was improved after the training program. But the improvements fell after a period of three weeks without applying the didactic model. With the combination of the didactic strategies were obtained improvements in the game volume (PB) and the effectiveness index (EI). The differences between pre-test, post-test and retention test, however, are not statistically significant. Therefore, it is not yet possible to confirm the effectiveness of the DMCAJ on the play skills.

After METZLER (2005) the comparison of two teaching strategies does not make sense because they already aspire to different learning goals. Therefore, no control group was used in this study. In traditional game mediation models, the focus is on the development of coordination skills and technical skills. Therefore, the study results are limited to this range.

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