

Analysis of training tasks regarding game stages and situations in U'10 and U'13 categories

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ANALYSIS OF TRAINING TASKS REGARDING GAME STAGES AND SITUATIONS IN U'10 AND U'13 CATEGORIES

KEYWORDS: Game stages, Game situations, Training, Basketball, Analysis of training tasks

ABSTRACT: The aim of this study was to analyze the way training tasks are designed by four coaches of U'10 category (9-10 years old) and U'13 category (12-13 years old) regarding game stages and situations. The sample of this study is formed by four coaches: C1 and C2 train mini basket teams and are more experienced; C3 and C4 train children's teams and are less experienced. 452 training tasks designed by these four coaches for two months were analyzed. The training pedagogical variables registered were the following: Game stages, Game situations and Content. In order to control data's reliability, consensual agreement was carried out, and in order to obtain inter and intra-assessor agreement, *kappa de Cohen* and *multirater k_{free}* indexes were used. A descriptive and inferential analysis was performed (χ^2 , φc and *RTC*) in order to analyze the characteristics of the tasks designed by each coach and the *Mann-Whitney U test* was used to know the differences in the studied variables amongst coaches. The results show that there are mainly offensive tasks, although three of the coaches show to tend to combine offensive and defense tactics. Game situations most common are 1x0 and 1x1. Situations without opposition are mainly used to work on offensive contents. The analysis of training pedagogical variables provides very useful information to know how the basketball training is designed.

Sport training is one of the most important resources of coaches in order to train their players (Ibáñez, 2008; Leite, Coelho and Sampaio, 2011). It is the mean through which players acquire the basis of the sport (Saad and Nascimento, 2007; Tallir, Philippaerts, Valcke, Musch and Lenoir, 2012). This training is even more important when it is designed for the first steps of players' training.

In order to teach and train basketball in the first steps, experts, from a comprehensive model and a constructivist perspective, suggest a higher focus on the offensive phase (Ibáñez, 2008; Sáenz-López, 2009), together with the use of simpler situations at first (1x0, 1x1) and progressing toward more complex situations, using mainly situations with opposition (Cárdenas, 2003; Ibáñez, 2008; Sáenz-López, 2009). In this stage modified game situations such as 2x2 and 3x3 adapted to these ages are especially relevant (Tallir et al., 2012).

It is necessary to know how the basketball training carried out, in this case, is designed. With this aim a research line started analyzing training tasks, where the following studies can be found, amongst others: Saad and Nascimento (2007), Cañadas, Parejo, Ibáñez, García and Feu (2009) and Cañadas, Ibáñez, García, Parejo and Feu (2013).

There are several variables which influence the planning of sport training: players' characteristics, training step, period of the season, etc. There variables determine the type of task established by the coach (Cañadas et al., 2013; Ibáñez, 2008). The aim of this study was to analyze the way training tasks are designed by four

coaches of U'10 and U'13 categories regarding game stages and situations.

Method

This research is a *multiple case study* and, according to the data collection method, is a descriptive *study through an arbitrary code registration* (Montero and León, 2007).

The participants of this study were four basketball coaches. C1 and C2 train U'10 teams (9-10 years old) and are more experienced; C3 and C4 train U'13 teams (13-14 years old) and are less experienced (4 ± 1.4). 452 training tasks designed by these four coaches for two months (January and February) were part of the sample.

The variables of this study are the following: *Game stages*, *Game situations* and *Content*, pedagogical variables which define the sport training (Ibáñez, 2008).

In order to provide *data quality control* (Anguera and Hernández-Mendo, 2013) consensual agreement was carried out, and in order to obtain inter and intra-assessor agreement, *kappa de Cohen* and *multirater k_{free}* indexes were used in two different moments. The results obtained for the game stages [(Cohen's $k = .80$)(*k_{free}* = .79)] were rated as "substantial", and for the game situations [(Cohen's $k = .95$)(*k_{free}* = .97)] as "almost perfect".

A descriptive analysis of the variables of this study was performed. Then, the relationship amongst variables was analyzed through a non-parametric inferential analysis (*Chi-square* and

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Cramer's V). Though the value of the *corrected standardize remainders (RTC)* ($> |1.96|$) this relationship was interpreted. In order to know the differences amongst coaches regarding the studied variables, the *Mann-Whitney U* test was used.

Results

Three of the four coaches suggest that most of the tasks should focus on both game stages (mixed stage) (Table 1). The analysis of the relationship between *game stages* and *content* [$(\chi^2_{(34, N=100)} = 103.8, p < .001; \phi_c = .720, p < .001)$ C1; $(\chi^2_{(56, N=147)} = 259.93, p < .001; \phi_c = .940, p < .001)$ C3; $(\chi^2_{(46, N=100)} = 117.5, p < .001; \phi_c = .766, p < .001)$ C4] shows that this kind of tasks are suggested to work mainly on offensive content, which demonstrates a higher use of offensive tasks.

Situations 1x0 and 1x1 are the situations most used (Table 1). The use of 1x0 (53.3%) by C2 must be highlighted, since it shows a training approach for the U'10 category based on situations without opposition with 1x0 and situations of real game with 5x5 (12.4%). Basketball coaches of U'13 category show an important percentage in tasks using situations 2x2 and 3x3 (Table 1). C3, as well as C2, uses situations 5x5, but combining them with situations 1x0, 1x1 and 2x2 in the same sessions.

There is a statistically significant relationship between the *game stage* and the *game situation* [$(\chi^2_{(18, N=100)} = 89.51, p < .001; \phi_c = .669, p < .001)$ C1; $(\chi^2_{(20, N=105)} = 91.12, p < .001; \phi_c = .659, p < .001)$ C2; $(\chi^2_{(22, N=147)} = 129.01, p < .001; \phi_c = .662, p < .001)$ C3; $(\chi^2_{(22, N=100)} = 92.05, p < .001; \phi_c = .678, p < .001)$ C4], since in the four cases, situations without opposition are used to a greater extent to work offensive movements, especially the situation 1x0 (*RTC* = 4.7; 6.9; 8.3; 6.7), but also 2x0 (*RTC* = 4; 3; 2.5) and 3x0 (*RTC* = 2.9; 2.1; 2.8) by C1, C3 and C4. Regarding defense tasks, the situation 1x1 is mainly used by C4 (*RTC* = 2.4) and "others" by C1 (*RTC* = 3.9). The situations used for the mixed stage are the following 1x1 (C1 y C3), 5x5 (C2) y 2x2 (C4) (*RTC* = 5.6; 5.2; 4.6; 2.8).

From the statistically significant relationship between the variables *game situation* and *content* [$(\chi^2_{(153, N=100)} = 390.21, p < .001; \phi_c = .658, p < .001)$ C1; $(\chi^2_{(190, N=105)} = 520.79, p < .001; \phi_c = .704, p < .001)$ C2; $(\chi^2_{(308, N=147)} = 711.44, p < .001; \phi_c = .663, p < .001)$ C3; $(\chi^2_{(253, N=100)} = 497, p < .001; \phi_c = .672, p < .001)$ C4] we can see that contents such as the throw (*RTC* = 3.4; 5.5; 2.2; 5.2) and feints and changes of hand (*RTC* = 4; - ; 4.3; 5.2) and the bounce (*RTC* = 2; 2.2; 4.4;-) use situations of 1x0. The use of the situation 3x0 and "others" also presents a higher proportion than expected by C3 (*RTC* = 2.3; 3.7) as well as the

situation 2x0 by C4 (*RTC* = 3.5) to train the throw towards the basket.

There are statistically significant differences amongst the coaches of this study in the game stages and situations (Table 1). The coach C2 suggests a way to deal with the game stages different to the rest of coaches of the sample. There are no differences amongst the coaches regarding game situations within the same category, whereas there are differences between the different categories.

Discussion

This study shows the relevance of working offensive tasks in the first stages which was already seen in other studies' results (Cañadas et al., 2009) and claimed by several experts (Ibáñez, 2008; Sáenz-López, 2009). However, three of the four coaches of this study tend to look for a balance and to work on the two game stages together (Ibáñez, 2008).

Game situations 1x0 and 1x1 are the most used in the four analyzed teams and all U'10 and U'13 teams obtained the same results (Cañadas et al., 2013; Cañadas et al., 2009). Small-sided situations 2x2 and 3x3 are used in these stages in order to optimize, simplify and contextualize basketball movements (Tallir et al., 2012) and they are used in U'13 category and also by one of the U'10 coaches, although a higher percentage was expected in U'13 category compared to the U'10 category (Cárdenas, 2003). These game situations have been assessed by experts (Cárdenas, 2003; Sáenz-López, 2009) and coaches (Leite et al., 2011) and used by the youngest and mini football categories (Saad and Nascimento, 2007). Situations 5x5 is especially used by one of the U'10 coaches (C2) and another coach of the U'13 category (C3), obtaining the latest the same results as Cañadas et al. (2013) in the same category.

Offensive tasks are mainly developed in situations without opposition, while in order to work on defense and on the mixed stage situations with opposition are used: individual situations to work on defense and group situations to work on the mixed stage. These data agree with the results of Saad and Nascimento (2007), Cañadas et al. (2009) and Cañadas et al. (2013) which show the higher use on situations without opposition. The planning of the main contents of basketball in these two stages is still presented with the use of situations without opposition. Regarding the throw toward the basket there is an improvement, from simpler to more complex situations, from the U'10 category to the U'13 category, increasing the number of participants in the task (Cárdenas, 2003; Ibáñez, 2008; Sáenz-López, 2009).

E	Cat.	Game stage (G.M.)				G.M./Coach				Game situations (G.S.)					G.S./Coach			
		O.	D.	M.	1	2	3	4	1x0	1x1	2x2	3x3	5x5	1	2	3	4	
1	U'10	44	3	53		.02*	.55	.17	25	32	11	4	1		.126	.069	.003*	
2	U'10	58.1	6.7	35.2	.02*		.002*	.000*	53.3	8.6	1.9	2.9	12.4	.126		.004*	.001*	
3	U'13	41.5	.7	57.8	.55	.002*		.382	26.5	19	15.6	2.7	10.2	.069	.004*		.256	
4	U'13	34	4	67	.17	.000*	.382		19	25	11	9	5	.003*	.001*	.256		

* $p < .05$

Table 1. Descriptive results of the variables "game stages" and "game situations" shown in percentages and Mann-Whitney U test.

The analysis of the training process provides important information when establishing sports teaching principles. Its results

have a great practical application and they favor the process of continuous training and a deeper reflection on coaches' actions.

ANÁLISIS DE LAS TAREAS DE ENTRENAMIENTO RESPECTO A LA FASE Y LAS SITUACIONES DE JUEGO EN CATEGORÍA MINIBASKET E INFANTIL

PALABRAS CLAVES: Fases de juego, Situaciones de juego, Entrenamiento, Baloncesto, Análisis tareas de entrenamiento.

RESUMEN :

El objeto de este estudio fue analizar cómo es el entrenamiento diseñado por cuatro entrenadores de las categorías de minibasket (9-10 años) e infantil (12-13 años) respecto a las fases de juego y las situaciones de juego. La muestra del estudio la constituyen 4 entrenadores, E1 y E2 dirigen equipos minibasket y con más experiencia como entrenador, y E3 y E4 dirigen equipos infantiles y tienen menor experiencia. Se analizaron las 452 tareas de entrenamiento, de dos meses de intervención, diseñadas por los entrenadores del estudio. Las variables pedagógicas registradas fueron: *Fases de juego*, *Situaciones de juego* y *Contenido*. El control de la calidad del dato se llevó a cabo a través de la concordancia consensuada y para la concordancia inter e intra-evaluador con los índices de *kappa de Cohen* y *multirater k_{free}* . Se realizó un análisis descriptivo e inferencial (χ^2 , ϕc and *RTC*) para explorar las características de las tareas diseñadas por cada entrenador y la prueba de *U de Mann-Whitney* para conocer las diferencias entre los entrenadores en las variables de estudio. Los resultados muestran que existe un predominio de las tareas dirigidas al ataque, aunque en tres de los entrenadores se aprecia una tendencia al trabajo conjunto de ataque y defensa. Las situaciones de juego más utilizadas son el 1x0 y el 1x1. Se utilizan situaciones sin oposición, en mayor medida, para trabajar contenidos ofensivos. El análisis de las variables pedagógicas del entrenamiento proporciona información muy útil sobre cómo es el entrenamiento deportivo diseñado en Baloncesto.

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