



## СПОРТНА ПЕДАГОГИКА

### АНАЛИЗ НА ПОВЕДЕНИЕТО ПРИ РЕШЕНИЯ НА ТОП ТРЕНЬОРИ ОТ ВИСША ЛИГА ПРЕДИ И СЛЕД СПОРТНОТО СЪСТЕЗАНИЕ

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### BEHAVIORAL ANALYSIS OF PREMIER LEAGUE TOP COACHES IN CONCERN WITH THEIR PRE AND POST GAME DECISIONS

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**Abstract:** Submitted article is thorough study of top coaches behavioral responses during the competition. A detailed analysis of the literature /from the last 15 years / is made, focusing on various determinants of sporting success which determine the role of the coach to shine and not be underestimated. It stressed the need to examine current trends, that elucidate the process complexity / behavioral and cognitive / in coaching job.

**Key words:** Coaching, Coach Behaviour, Decisions, Competition

**Анотация:** Представената статия е задълбочено проучване на поведенчески реакции на топ треньори по време на състезание. Подробен анализ на литературата /от последните 15 години / е направен, фокусиран върху различните детерминанти на спортния успех, които да подчертае ролята на треньора. Обръща се внимание на необходимостта, да се разгледат съвременните тенденции, които осветляват сложността на процеса /поведенческа и когнитивна/ в треньорската работа.

**Ключови думи:** треньорско ръководене, треньорско поведение, решения, състезания

#### 1. Introduction

In team sports, there is a multitude of roles fulfilled by players, coaches, and referees (Catteeuw, Helsen, Gilis, & Wagemans, 2009).

The athlete's performance, his relationship towards sportive success or unsuccessful is the visible face of what goes on during training sessions and competition.

Nevertheless and as Rodrigues (1997) guarantees, the search for sport performance as a consequence of the training process, allows the fulfilment of the competition aims, i.e., the sport success.

The coach should provide his athletes with all means, so that they can achieve the aims of the completions, during the training period.

In order to optimize the training process, so that it allows its full application in competition, the coaches will have to invest upon the planning tasks (pre-interactive decisions) and reflexion ones (post-interactive actions).

During the training sessions, the behaviour of the coaches will be conditioned by the pre-interactive decisions, but always subject to the unexpectedness of the training sessions (Lyle, 2002). After the training

session, the coaches' main concern will focus upon the post-interactive decisions, which will thus influence the pre-interactive decisions of the following training session or competition and so on.

Therefore, it seems to us that there are different determinants towards sport success, upon which the coach's role and function should be highlighted and not underestimated.

For a long time, the coaching research was done with behavioural or cognitive variables, each paradigm developed separately. Nevertheless, recent investigations (Hanke, 1991; Сфтй, Salmela & Russell, 1995; Gilbert, Trudel & Haughian, 1999; Cloes, Bavier & Piñon, 2001) happened to demonstrate the importance and the relevance of studying behavioural and cognitive processes in common, due to the fact that they complement each other.

During competition the performance of the coaches' functions is ruled by a set of formal aspects depending on the characteristics of the game and regulation of the competition (Arroyo & Alvarez, 2004). Probably, there is a major similitude between the performance of collective sports coaches.

Millard (1996) studied the behaviour of the football coach at secondary level and junior university level, during the training sessions. A sample was composed by 29 male coaches and 29 female coaches. The observation system was C.B.A.S. (Coach Behaviour Analysis System). The obtained results stated significantly and more often, male coaches showed they practised the *Control* keeping and *General Theoretical Instruction* and significantly and less often the *General Encouragement*, rather than female coaches. The author concludes suggesting a deeper search connecting differences between male and female coaches.

Pina & Rodrigues (1996) designed a study based upon the behaviour of top Volleyball coaches, in which it was aimed at analysing instruction sessions in competition. In this study 3 coaches were observed for 12 Games, which match with 40 "sets" (30 wins and 10 lost). It was used the S.A.I.C. (System of Information Analysis in Competition).

The results led to the identification of a coach behavioural profile between the "sets". The identified differences were related to the coach intervention structure. After a "set" defeat, coaches provided more information to their athletes, presenting significant differences in the groups *Negative Evaluation*, *Prescriptive Information* and *Listening way*. Information is aimed at the team, mainly. On what concerns the Instruction content, the authors concluded that, after a defeat coaches provide more information to their athletes and that there are significant differences within the Information on the *Opponent Players* and the *Instruction on the Attention of Athletes in Game*.

Trudel, Côté & Bernard (1996) state the behaviour of coach in competition in their study upon Ice Hockey youngsters' coaches. The sample was composed by 14 coaches of 12 teams and 32 games were observed. COSG (Coaches Observation System for Games), developed by the authors for this study, was used. The system was divided into 16 behavioural categories and still 8 categories describing whom the behaviour was leaded. The obtained results showed that more than half of the time length of the game is spent in Silent Observation (51,2%) by the coach. Organization (15,0%), Organisation of the Game (8,1%), Stimulation (6,7%) and Providing Information (6,7%) were also signalised with high values.

It was also possible to verify that the behaviour of coaches are aimed fundamentally at the *Athletes in the field* (40,9%) and to *Substitute Players* (30,4%).

The main task of coaches does not restrain to guiding athletes during training and competitions. Buceta (1998) highlights the importance of "intellectual work", out of the field of training and competitions, and which enlarges tasks of planning and organization: initial definition of objectives, definition of contents, adapting initial plan to available time, planning of work to fulfil and foreseeing problems and possible changes.

Following the same trend, Castelo (2003) states the process of planning a training session should include four phases: preparation tasks and transcription of a training session, selection tasks and, settlement of theme, objectives and means of training, tasks of organization of a training session and management of the action of coaches during the training session.

According to Lima (2000), training sessions cannot depend on a flashy inspiration of coaches so that they might be useful and have a sustainable effect, but should, previously, be structured and organized.

In relation to planning, the perspectives of these authors focus on the concept of pre-interactive decisions, as both authors focus a set of decisions coaches might and should have into account before training and competitions.

Buceta (1998) reminds us of the fact that every training or competition is subject to constant adjustments. These adjustments should be identified and taken into account whenever coaches design future planning.

The observation of the coaches behaviour have to be jointly considered with the analysis of their pre and post-interactive decisions, as a way of evaluating their influences, aiming at achieving a deep knowledge of the training process. (Jones, Housner & Kornspan, 1997)

For the last years studies have been increasing with the aim to research the way coaches think, make decisions and select the strategies to use in a context specific situation.

This model, based upon the decisions of coaches, sets a new stage of approaching the coaches' activity, covering some of the lacks spotted in the behavioural research.

Cloes, Bavier & Piñon (2001) studied tactical decisions of coaches in competition by means of a three-step model: pre-interactive decisions, interactive decisions and post-interactive decisions. In a first step they aimed at verifying, by the end of the game, if coaches were able to state which had been their interactive decisions. In a second step they wanted to balance which factors did influence interactive decisions. The Basketball coach and the Volleyball coach of the second league, were interviewed and observed during the games. After each game, coaches referred a limited number of tactical decisions. Later, coaches were confronted with the videotape of their performance in order to complement the previously collected information. The Basketball coach presented 84 decisions and meanwhile, the Volleyball coach presented 88 decisions. The more analysed tactical decisions were: demand of "time out", replacements and tactical changes. On the other hand, strategy, providing information and "ruling the game" were the most used decisions.

Sousa & Rodrigues (2004) built a comparative study of Beach Volleyball coaches in Portugal and U.S.A., taking into account the orientation type of coaches (external coach, one athlete/coach, two athletes/coaches) and the practice level of the teams. 14 Beach Volley coaches of male seniors, from Portugal and 16 Beach Volley coaches of male seniors, from U.S.A. were considered. In Portugal, 10 training sessions and interviews to the 14 coaches, before the competition, were recorded. In the U.S.A., 12 training sessions and interviews to the 16 coaches, before the competition, were recorded. SOTA was used to collect the behaviours. One interview was used to study Pre-interactive decisions. By means of the collected data in the interview, the authors concluded that the pattern of thought of Portuguese coaches and American coaches tends to be stable and shows similitude between the two groups, and no significant differences existed, at the level of Pre-interactive decisions.

Lastly, Santos & Rodrigues (2004) studied expectations and behaviours of Football, 2<sup>nd</sup> League B, North, Centre and South Zone. The sample was also composed by 12 preparation speeches for competition and 12 competitions. One interview was used to collect data related to the speeches. The System for Analysis on the Coaches' Instruction (SAIC) was used. With this study, the authors concluded coaches expect to spread a lot of positive affective information and almost none aiming at negative affective information. Regarding the direction followed by the instruction, coaches hope to direct it to the team, in major times. Lastly, they present information with psychological and tactical content.

Thelwell, Weston, Greenlees, & Hutchings (2008) examined the varying performance and organizational stressors experienced by coaches from elite athletes. They interviewed eleven coaches. Content analysis of the data collected from the interviews revealed that coaches experienced comparable numbers of performance and organizational stressors. Performance stressors were divided between their own performance and that of their athletes, while organizational stressors included environmental, leadership, personal, and team factors. The findings provide evidence that coaches experience a variety of stressors that adds weight to the argument that they should be labelled as "performers" in their own right.

Starting from this premise, our study will focus upon pre-interactive decisions, behaviour and post-interactive decisions of top Handball coaches, during competition. We aim at analysing the relationship between pre-interactive decisions, behaviour and post-interactive decisions during competition.

## 2. Methods

We observed six top Handball coaches of the most important Handball championship in Portugal.

We videotaped three games per coach, during three weeks. Before and after each game one interview took place. Each coach was interviewed 6 times (3 times before the game and 3 after the game). The sample was composed by 18 games and 36 interviews.

Two data collecting tools were used in our study: Observation system and interview. SOTA (Observation system of the behaviour of coach), developed by Rodrigues, Rosado, Sarmento, Ferreira & Leza-Veiga (1993) was used as a way of evaluating behaviour variables and in a second hand, interviews were used to analyse pre- and post-interactive decisions, thus, evaluating cognitive variables.

We analysed the relation between cognitive variables (pre- and post-interactive decisions) and behavioural ones (interactive behaviours). These relations will be presented by means of descriptive statistics.

According to Schmitt (2000), Schmitt & Hanke (2001), Lenzen, Brouwer, Dejardin, Lachi & Cloes (2004) the simultaneous presentation of decisions and behaviours allows the deduction of relationships between the variables.

Comparison between coaches will be carried out using the non-parametric statistic test Kruskal-Wallis. As stated before the results of the comparison relied upon the SOTA five dimensions and eighteen categories.

In order to analyse connections between decisions and behaviours of coaches we followed a protocol based upon the works of Hanke & Schmitt (1999) and Schmitt (2000):

**Table 1. Protocol for analysis of coherence between decisions and behaviour of coaches**

<b>ANSWER / BEHAVIOUR OF COACH</b>	<b>INTERPRETATION</b>
Yes	Used and spent time in the category
No	Didn't use and didn't spend time in the category
Maybe	No clear definition in the use and the time spent in the category
Before training session	Used and spent time in the category before training session or competition
Few time	Until 10,00% of time spent in one category
Some time	Between 10,01% and 40,00% of time spent in one category
A lot of time	From 40,01% until 100,00% spent in one category
Between 0,00% and 0,99% of the time spent in one category	Counts as absence of behaviour in one category
From 1,00% to 100,00% of the time spent in one category	Show of behaviour in one category

### 3. Results

The three games average only allows the characterization of the coach A global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

**Table 2. Pre-interactive decisions, behaviour and post-interactive decisions of A coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

<b>Categories</b>	<b>Pre-interactive decisions</b>	<b>Behaviour</b>	<b>Post-interactive decisions</b>
Silent Observation	A lot of time	85,03	Few time
Attention to the Verbal Interventions	No	0,83	No
Descriptive Information	No	0,03	No

Prescriptive Information	A lot of time	4,22	A lot of time
Questioning	No	0,02	No
Positive Evaluation (+)	No	0,33	No
Negative Evaluation (-)	No	0,12	No
Demonstration	No	0,00	No
Organization	No	0,75	No
Positive Affectivity (+)	Yes	1,17	Yes
Negative Affectivity (-)	No	0,00	No
Pressure	Some time	2,22	Some time
Interactions with the Second Coach	A lot of time	4,12	No
Interactions with the Directors	No	0,61	No
Interactions with the Referees	No	0,03	No
Interactions with the Bench Players	No	0,21	No
Interactions with the Opponent Players	No	0,00	No
Other Behaviours	No	0,30	No

Thus, it is interesting to realize that, in global terms, it seems to exist a great homogeneity between what A coach decides pre- and post interactively and his behaviour, whenever we compare the average of the three games.

**Table 3. Pre-interactive decisions, behaviour and post-interactive decisions of B coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

Categories	Pre-interactive decisions	Behaviour	Post-interactive decisions
Silent Observation	Few time	76,11	Few time
Attention to the Verbal Interventions	No	0,58	No
Descriptive Information	No	0,05	No
Prescriptive Information	A lot of time	6,97	A lot of time
Questioning	No	0,08	Yes
Positive Evaluation (+)	No	1,41	No
Negative Evaluation (-)	No	0,00	No
Demonstration	No	0,00	No
Organization	No	1,70	No
Positive Affectivity (+)	Yes	1,61	Yes
Negative Affectivity (-)	No	0,03	No
Pressure	No	10,22	No
Interactions with the Second Coach	No	0,57	No
Interactions with the Directors	No	0,03	No

Interactions with the Referees	No	0,25	No
Interactions with the Bench Players	No	0,23	No
Interactions with the Opponent Players	No	0,00	No
Other Behaviours	No	0,16	No

The three games average only allows the characterization of the coach B global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

Thus, it is interesting to realize that, in global terms, it seems there exist some homogeneity between what coach B decides pre- and post interactively and his behaviour, whenever we compare the average of the three games.

**Table 4. Pre-interactive decisions, behaviour and post-interactive decisions of C coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

Categories	Pre-interactive decisions	Behaviour	Post-interactive decisions
Silent Observation	Some time	71,18	A lot of time
Attention to the Verbal Interventions	No	1,72	2 Yes e 1 No
Descriptive Information	No	0,91	No
Prescriptive Information	A lot of time	11,78	Some time
Questioning	No	0,23	Yes
Positive Evaluation (+)	No	0,36	Yes
Negative Evaluation (-)	No	0,46	No
Demonstration	No	0,00	No
Organization	No	2,36	No
Positive Affectivity (+)	Yes	0,83	Yes
Negative Affectivity (-)	No	0,95	No
Pressure	A lot of time	4,18	A lot of time
Interactions with the Second Coach	Don't have	0,00	Don't have
Interactions with the Directors	Some time	0,48	Few time
Interactions with the Referees	No	2,94	No
Interactions with the Bench Players	No	1,28	No
Interactions with the Opponent Players	No	0,00	No
Other Behaviours	No	0,34	No

The three games average only allows the characterization of the coach C global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

In competition coach C shows a great homogeneity between pre-interactive decisions, behaviour, and post-interactive decisions.

**Table 5. Pre-interactive decisions, behaviour and post-interactive decisions of D coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

Categories	Pre-interactive decisions	Behaviour	Post-interactive decisions
Silent Observation	Some time	62,59	Few time
Attention to the Verbal Interventions	Yes	2,08	Yes
Descriptive Information	No	1,92	A lot of time
Prescriptive Information	A lot of time	14,09	A lot of time
Questioning	Yes	0,54	Yes
Positive Evaluation (+)	Yes	0,05	Yes
Negative Evaluation (-)	No	0,12	No
Demonstration	No	0,09	No
Organization	No	2,24	No
Positive Affectivity (+)	Yes	0,41	Yes
Negative Affectivity (-)	Yes	2,32	Yes
Pressure	A lot of time	6,22	A lot of time
Interactions with the Second Coach	Some time	1,33	Few time
Interactions with the Directors	No	0,11	No
Interactions with the Referees	No	3,48	No
Interactions with the Bench Players	No	2,17	No
Interactions with the Opponent Players	No	0,00	No
Other Behaviours	No	0,24	No

The three games average only allows the characterization of the coach D global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

Thus, we realized that in competition there exists some homogeneity between what coach D decides pre- and post interactively and his behaviour, as only in eight categories we can find some heterogeneity.

**Table 6. Pre-interactive decisions, behaviour and post-interactive decisions of E coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

Categories	Pre-interactive decisions	Behaviour	Post-interactive decisions
Silent Observation	A lot of time	84,75	Some time
Attention to the Verbal Interventions	Yes	0,41	Yes
Descriptive Information	No	0,03	No
Prescriptive Information	A lot of time	5,35	A lot of time
Questioning	No	0,14	Yes
Positive Evaluation (+)	Yes	0,03	Yes
Negative Evaluation (-)	No	0,00	No
Demonstration	No	0,00	No
Organization	No	1,92	No
Positive Affectivity (+)	Yes	0,74	Yes
Negative Affectivity (-)	Yes	0,24	Yes
Pressure	No	3,39	Few time
Interactions with the Second Coach	Some time	0,50	Few time
Interactions with the Directors	No	0,13	No
Interactions with the Referees	No	1,08	No
Interactions with the Bench Players	No	0,92	No
Interactions with the Opponent Players	No	0,00	No
Other Behaviours	No	0,37	No

The three games average only allows the characterization of the coach E global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

Thus, we realized that in competition there exists some homogeneity between what coach E decides pre- and post interactively and his behaviour, as only in seven categories we can find some heterogeneity.

**Table 7. Pre-interactive decisions, behaviour and post-interactive decisions of F coach in competition – In the highlighted categories we found differences between pre-interactive decisions, behaviour and post-interactive decisions**

Categories	Pre-interactive decisions	Behaviour	Post-interactive decisions
Silent Observation	Some time	72,35	Some time
Attention to the Verbal Interventions	Yes	0,43	Yes
Descriptive Information	No	0,19	No

Prescriptive Information	A lot of time	9,47	A lot of time
Questioning	Yes	0,09	Yes
Positive Evaluation (+)	Yes	0,10	Maybe
Negative Evaluation (-)	No	0,11	Maybe
Demonstration	No	0,00	No
Organization	No	2,27	No
Positive Affectivity (+)	Yes	2,44	Yes
Negative Affectivity (-)	No	0,60	Yes
Pressure	Some time	6,48	Few time
Interactions with the Second Coach	A lot of time	1,73	Some time
Interactions with the Directors	No	0,20	No
Interactions with the Referees	No	2,46	No
Interactions with the Bench Players	No	0,94	No
Interactions with the Opponent Players	No	0,06	No
Other Behaviours	No	0,07	No

The three games average only allows the characterization of the coach F global profile, in a very light way, due to the fact that pre- and post-interactive decisions could not be related to behaviours that were not enclosed by those same decisions (e.g. pre-interactive decisions connected to the first game cannot be confronted with the behaviour of another game apart from the considered one).

Thus, we realized that in competition there exists some homogeneity between what coach F decides pre- and post interactively and his behaviour, as only in eight categories we can find some heterogeneity.

**Table 8. Average, Pattern deviation, maximum and minimum values of coaches' spent time percentage during competition**

Categories	Average	Deviation	Minimum	Máximo
		n	m	m
Silent Observation	<b>75,34</b>	8,56	60,72	88,56
Attention to the Verbal Interventions	<b>1,01</b>	0,75	0,07	2,10
Descriptive Information	<b>0,52</b>	0,80	0,00	2,38
Prescriptive Information	<b>8,65</b>	3,84	3,95	15,40
Questioning	<b>0,18</b>	0,22	0,00	0,74
Positive Evaluation (+)	<b>0,38</b>	0,63	0,00	2,56
Negative Evaluation (-)	<b>0,13</b>	0,18	0,00	0,51
Demonstration	<b>0,01</b>	0,06	0,00	0,26
Organization	<b>1,87</b>	0,99	0,42	3,45
Positive Affectivity (+)	<b>1,20</b>	0,93	0,00	4,14
Negative Affectivity (-)	<b>0,69</b>	0,86	0,00	2,51
Pressure	<b>5,45</b>	3,76	0,74	15,59

Interactions with the Second Coach	<b>1,38</b>	1,53	0,00	5,35
Interactions with the Directors	<b>0,26</b>	0,34	0,00	1,16
Interactions with the Referees	<b>1,71</b>	1,76	0,00	6,12
Interactions with the Bench Players	<b>0,96</b>	0,81	0,05	2,96
Interactions with the Opponent Players	<b>0,01</b>	0,04	0,00	0,19
Other Behaviours	<b>0,25</b>	0,24	0,00	0,72

During competition there were expected two behaviours of coaches. Passive coaches leaving the week work to be applied during the game and active coaches in constant dialogue with the intervenient. Maybe because we are considering excellent athletes, coaches dedicate themselves to observation for more than three quarters of the time of game length (average 75,34%) leaving small verbal or non-verbal interventions to small corrections ( the sum of the categories of the dimension Instruction sums up only 9,87% of the behaviour of coaches. In average, coaches pressure athletes few 5,45%, although maximum values reach a high value of 5,45%. According to Garcia (2000), it would be expected that coaches would in feel a major need of pressing up their athletes at this level of competition.

The low values on positive (1,20%) or negative (0,69%) affectivity showed by coaches during competition, reflect a new way of performing of top coaches. The attempt to spread and demand a more professional attitude might be at the origin of this affective distance (Maldonado, 1991 e Garcia, 2000).

Interactions with the referee team also show a low percentage value (1,71%), and this reflects the increasing will of coaches in order to focus upon their athletes, almost exclusively. Another explanation might lay down in the fact that coaches do not want to contest referees' decisions, so that there might not arise any risk of a "contagious" behaviour in the team.

Another aspect reflecting a certain coaches' state of solitude is the fact that there are in contact with the second coach for a few time (1,38%). The main concern is to be focus on everything that goes on the field game or the previous definition of the functions of the second coach in relation to the game (to control changes defence-attack, for instance) might be some explanation for this behaviour of the coach.

Table 9 show us a synthesis on the results, characterising the differences between coaches by means of the presentation of value (H) and the corresponding probability of mistake (P).

**Table 9. Comparing the group of Coaches and behaviour of Coaches during Competition**  
\* -There are significant changes among the six coaches

Categories	Average	Deviation Pattern	H	P
Silent Observation	75,34	8,56	14,942	*0,011
Attention to the Verbal Interventions	1,01	0,75	12,462	*0,029
Descriptive Information	0,52	0,80	14,801	*0,011
Prescriptive Information	8,65	3,84	13,311	*0,021
Questioning	0,18	0,22	9,556	0,089
Positive Evaluation (+)	0,38	0,63	10,880	0,054
Negative evaluation (-)	0,13	0,18	13,442	*0,020
Demonstration	0,01	0,06	5,000	0,416
Organization	1,87	0,99	5,000	0,416

Positive Affectivity (+)	1,20	0,93	11,550	*0,042
Negative Affectivity (-)	0,69	0,86	14,826	*0,011
Pressure	5,45	3,76	9,468	0,092
Interactions with the Second Coach	1,38	1,53	14,489	*0,013
Interactions with the Directors	0,26	0,34	8,330	0,139
Interactions with the Referees	1,71	1,76	12,514	*0,028
Interactions with the Bench Players	0,96	0,81	12,785	*0,025
Interactions with the Opponent Players	0,01	0,04	5,000	0,416
Other Behaviours	0,25	0,24	3,330	0,649

As we can verify through table 9, we found significant differences in ten categories: *Silent Observation*, *Attention to the verbal interventions*, *Descriptive information*, *prescriptive Information*, *Negative Evaluation*, *Positive Affectivity*, *Negative Affectivity*, *Interactions with second coach*, *Interactions with Referee* and *Interaction with Bench players*.

During top competition, the personality of the coach, the development of the result, classification and aims of the team, performance of athletes, presence of public are some of the amount of factors that might influence and turn inconstant the behaviour of the coach, what might explain the existence of a great diversity at the behaviours in the studied coaches group.

#### 4. Discussion

Competition is a moment lived with great intensity by the coach, once it demands high levels of concentration and quick decision making. Beyond that the behaviour during competition and at this level is always connected to the turning on of the result, the athletes' performance, individual and collective.

Coaches showed a pre-interactive decision to all categories we observed during competition. During competition, coaches showed some behavioural reactions different from those they had previewed. The great diversity of factors (injuries, results, among many others) which interact during competition, promote a certain improvability that forces behavioural changes on the coach. After the competition coaches take notice on whether their behaviour showed some changes or not. Nevertheless there are moments in which they suppose they have done it. The degree of importance coaches consider regarding different changes or behavioural maintenance is one of the explanations for this statement.

We can conclude that the behaviour of coaches in competition is planned and object of reflexion, but it shows some incoherence in the relation between pre-interactive decisions, behaviours and post-interactive decisions.

We also concluded that the behaviour of the coach during the game is very instable and improvable making difficult the search for a behavioural pattern at this level of competition.

#### 5. Conclusions

With this study we aimed to verify the existence of differences between pre-interactive decisions, behaviour and post-interactive decisions in competition.

As main conclusions we identified the following:

- Pre-interactive decisions of the coaches before the competition allow the design of the following profile: victory is the aim of the game, the expectation they show in relation to the game is the good athletes performance, being confident and be able to correct their mistakes, to provide a lot of prescriptive instruction, to question the athletes in some moment of the game, use any type of positive evaluation instruction, to press athletes for a long time, affective interactions are positive, to spend some time with the second coach, to be in silent observation for some time, to pay attention to verbal interventions of athletes and preparation of the game connecting to previous training sessions.

- During competition the most common behaviour of the coaches are: Silent Observation, Prescriptive Information, Management, Pressure and Interactions with the referee.

- Post-interactive decisions of the coach after the competition allow the design of the following profile: the aim of the game was achieved because players applied everything they had trained, used a lot of

prescriptive instruction, questioned athletes in any situation of the game, used positive evaluation instruction, pressed athletes during a lot or a few time, used positive and negative affective interactions, spent some time with the second coach, spent few time in silent observation for some time, paid attention to verbal interventions of athletes and the relation of this game with posteriors training sessions is, in tactical terms, of recovery and/or preparation of the following game.

- The behavioural differences between coaches are highlighted during competition (we found significant differences in ten categories: Silent Observation, Attention to verbal interventions, Descriptive Information, Prescriptive Information, Negative Evaluation, Positive Affectivity, Negative Affectivity, Interactions with the second coach, Interactions with the referee and Interactions with bench players).

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