The Coaching Process in Football – A qualitative perspective

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ABSTRACT

This study aims to understand what the coaches observe in the game, and how they evaluate and make their intervention based on this observation. The participants were 8 experienced First Portuguese League coaches. Semi-structured interviews were carried out and the data were analysed through the technique of content analysis. The software QSR NVivo 9 was used in coding the transcripts of the interviews. According to these coaches to effectively observe and analyze the game it is crucial to have a detailed knowledge of the game and of the individual characteristics of players. They consider that the most important aspects to observe in the game are: i) the 4 moments of the game; ii) set pieces; iv) individual characteristics of players; v) random aspects of the game. Coaches have the perception that over the years their observation has become more effective and they value different aspects in the game. They consider that the factors responsible for the evolution of their observations are: i) the accumulated experience; ii) a better knowledge of the game; iii) the academic formation. These coaches evaluate the teams in a general way focusing mainly on strengths and weaknesses and they follow a specific logic of prioritization for the evaluation of these aspects that is based mainly in their model of the game. The intervention is done mainly through the adaptation of the training exercises, but also through visual strategies (movies, photos, etc.) and meetings (individual, by sector or in group).

Key words: Soccer, Match analysis, Tactic, Coach.

Introduction

In football, successful performance is usually characterized as an interaction of different technical, tactical, mental and physiological factors. Given the need to better understand the constraints that promote the sporting success, match analysis has assumed a very important role in sports games. Thus, it seems natural that in recent years the scientific interest in the study of the football game has increased considerably.

Much of the activity of football coaches is embodied in the observation of player technique and team dynamics in implementing strategy and responding to opponents. Thus, it is important to clearly define the behavior which can be observed in a game to produce an intervention to increase performance based on that information. However, despite a vast literature devoted to the match analysis, there are few studies that focus on the characterization of the coach’s thoughts about the observation of the game and his/her intervention before the information is collected.

A fact that becomes even more surprising is related to the lack of confrontation of the results of a great number of studies about football match analysis with the understanding that the coaches have about the main results of this research.

Because coaching is rapidly evolving as a profession it is important to structure the content of the coaching domain to promote its advancement as a profession. Consequently, conceptual models of coaching have been developed in the context of gymnastics or in the perspective of qualitative analysis of human movement technique. However, the models developed in the context of football do not adequately represent in a detailed way the tasks of the coaching process.

Thus, this study aims to understand what the coaches observe in the game and how they evaluate and make their interventions based on this observation.

Methods

Participants

The participants in this study were 8 expert high-performance Portuguese first league football coaches with a professional experience (as first coach) ranging from 2 to 30 years (14.9 ± 8.6 years). All of the coaches, who were initially selected to participate in the study and accepted the invitation, were involved in coaching at the time of the interviews, and had worked at some time in their careers as first coaches within the Portuguese first league.

Because of the in-depth character of each interview, the interpretational nature of the analysis, and the number of the teams in the first league (n=16), 8 coaches were considered representative and met the objectives of the study, as well as the criteria of expert selection.
Instruments

The methodology for collecting data in this study was the semi-structured interview. The advantages of using this type of interview are diverse when compared with other methods of data collection.

The interview schedule was designed to identify the issues most relevant to the coach and to focus on these issues in detail. The certification of the content validity of the interview was done according to common qualitative research methods.

The certification of the content validity of the interview was fulfilled after a preparation and discussion of previous drafts of the transcript, based on the following steps: i) preparation of first draft of the transcript based on the specific aims of the study and also on the literature review; ii) evaluation of the interview transcripts by three senior researchers in sports pedagogy, who have substantial experience with interview methods; iii) reformulation based on the presented suggestions; iv) a pilot study was with a Portuguese first league coach; v) minor adaptations in the transcripts resulting from the reflections of the pilot study; vi) resubmission of this version of the transcripts to the experts. This ultimately resulted in the final version of the interview guide.

Data Collection

All the interviews were done by the first author, between December 2011 and February 2012, in a tranquil place (normally in the office) located in the football academies where the coaches work. The same format was used for each interview that began with general information about the purpose of the project. Next, the interviewer focused on background and demographic information. Finally, the knowledge elicitation took place using questions related to the purpose of the study. None of the interviews were rushed, and the coaches had time to clarify and reformulate their thinking. Each interview lasted between 1 and 2½ hours and was transcribed verbatim.

Data analysis

The objective of the analysis was to build an organizing system of categories that emerged from the unstructured data and that represented the organization and utilization of expert high-performance football coaches' knowledge.

Data analysis was performed using content analysis. Using a combination of inductive and deductive approaches, the text units were coded and text units with comparable meanings were organized into specific categories. Three researchers conducted the analysis independently to ensure that the resulting classification system was suitable and best fitted with the data. The software QSR NVivo 9 was used in coding the transcripts of the interviews.

Results

The analysis of the data allowed to establish the four main tasks of the football coaching: preparation; observation; diagnostic/evaluation; intervention.

Preparation

We define the task of "preparation" in this study as being not only the set of procedures performed by the coaches in order to implement a strategy that allows them to effectively perform the observation and analysis of the game, but also the basic knowledge necessary to perform this procedure (Figure 1).

![Graphical representation of the categories and sub-categories for the task "Preparation". The number "n" reported represents the number of independent mentions of this idea/concept by the eight expert coaches.](image-url)

The coaches interviewed consider that to perform the observation effectively it is essential to have a detailed knowledge of the game.

"Most important of all is the knowledge of the game (...) first you have to understand the game..." (Coach 1)

Moreover, coaches assigned significant importance to the procedures developed towards the definition/implementation of the observational strategy. Within this category all coaches referred to the development/utilization of media technology as a valuable aid for the observation and analysis of the game, especially the use of video technology and specific software. However, this analysis assumes only one objective importance if the information is correctly selected. Aware of this premise, there are coaches who feel the need to adapt the technological means in order to make its use more practical and functional in accordance with its objectives.
FIGURE 2
Graphical representation of the categories and sub-categories for the task "Observation"
“...we tried to develop a system that consists of the following: having an IPad with the game matrix (the way we see the game) on the bench connected to the stadium system of video images and to a television or a touchpad in the dressing room, so it would be an integrated system in which the game was enough to identify something positive that was happening and that we want to positively reinforce at half time. Touching the screen the pictures were captured five seconds before or five seconds after the relevant event (the same thing when something was not going well) and then just had to get there (dressing room), select and present, that is, we present and talk with the support of the footage.”
(Coach 2)

The coaches also feel that the particular observer characteristics are essential in the process of watching the game. Thus, whenever they recruit a specialist to work in this area, they look for someone who has a similar understanding and sensitivity to the game that they themselves have.

"A good analyst, a good observer is one who sees the game not with his eyes, but with the eyes of the coach..." (Coach 3)

In order to minimize the effects that different sensitivities may exercise in the analysis of the observed aspects, the coaches opt for previously defining the items to watch in the game, resulting in a standardized reporting instrument with pre-defined categories. Regarding the number of observations made to the opponents, we found they vary according to the coaches but especially according to the economic resources (2-6 games). Although much of the observation work is done by analysts, coaches reported that whenever possible they like to observe the opponents during live competition, because it allows them to have a more realistic perception of the intensity and rhythm of play beyond the observation of global team dynamics.

"Watching the game live is more important, because video only allows you to see the action on the ball. When I see a game on television, I cannot adopt the attitude of a professional or an analyst (...) it is too limited to evaluate a team just by what you see on the television". (Coach 4)

**Observation**

The second task of qualitative analysis consists in the observation of human movement. At this stage we tried to know what the coaches watch in a football game and which key aspects they should focus on (Figure 2).

In this sense, we tried to know which aspects are observed before and during the game by the coaches that constitute our sample, and we conclude that they most often refer to the need to observe the overall dynamics of the teams, the individual players’ characteristics, the set pieces, the random/unpredictable aspects and the four moments of the game: offensive organization, defensive organization, offensive transition and defensive transition.

“Essentially I observe dynamics and ways. Basically what I do is try to find solutions to any problems that the adversary creates for us, to find solutions to find ourselves, give clues for players to have a better performance.” (Coach 5)

“The set pieces, as we all know are very important (...) Then we have to find what is the randomness and unpredictability, i.e., how the team reacts in completely different, random and transient situations” (Coach 6)

“...basically we try to divide the game into four moments, to be easier to evaluate.” (Coach 7)

The observation and identification of regular actions in the game (patterns of play) the behavior of the opponent coach and situational variables (e.g., audience type, state of the grass, etc.) are also priorities about which coaches refer focus its observation.

During the course of the game, while leading their teams, coaches are concerned primarily in observing the fulfillment of the outlined game plan, and mainly focus their observation on their team. We highlight the fact that coaches often state that their eyes are not directed to where the ball is but to spaces away from the typical visual focus of action around the ball in order to decipher the dynamics that occur there.

“We have a game plan based on our characteristics that is adjusted to the characteristics of the opposing teams. I primarily center my observation on the correct implementation of the plan that we make for the game. My observation is focused mainly on my team...” (Coach 7)
They consider that the main factors that affect their observation are the psycho-emotional aspects, the expectations, the position on the bench and the referees’ errors. However, they acknowledge that the observation and analysis that they perform has evolved over the years, leading them to make more effective observations or to value aspects in the game that they did not previously value. The factors responsible for the evolution of this observation are the accumulation of experience and a better knowledge of the game, academic training and technical training.

“There is also a certain level of emotion that makes us often change the meaning of what we observe” (Coach 6)

“Many of the times the expectations affect and limit our observation, or give another dimension to the observation” (Coach 7)

**Evaluation/Diagnosis**

The third task consists of the evaluation that was observed in order to produce a diagnosis that provides the development of an appropriate intervention plan to enhance performance (Figure 3).

When evaluating the opposing teams’ coaches conduct an overall evaluation of the teams that enables them to identify strengths/weaknesses, to allow them to "explore" these weaknesses, or in order to avoid any difficulties that the opposing team can place on the basis of its more positive aspects.

“…try to understand where are the similarities, differences, which we can exploit, and what the opposing team can explore in our game, the more/less positive, stronger/weaker factors (...) what can create more imbalance in our team, and what we can do to imbalance the opposing team, according to what we see.” (coach 6)

**FIGURE 4**

Graphical representation of the categories and sub-categories for the task "Intervention"
The assessment and diagnosis that coaches perform are based on certain logic, which means, a framework of ideals behind this process of evaluation/diagnosis, that we call logic of evaluation. This logic that coaches follow in order to evaluate their own team or opposing teams is sustained on the one hand, on a relation of antagonism between the teams against, and on the other hand, on a referential that every coach has relative to his own game model.

“When I’m evaluating an opposing team, I have to know who my team is, to get a sense of what is important and more crucial in this vision of two antagonistic processes.” (Coach 8)

**Intervention**

The last task of qualitative analysis is the intervention planned by these coaches, based on their interpretation of the data observed. The intervention is understood not only as the organization of training process, but also as a set of resources or techniques the coach uses to effectively transmit the information to his players (Figure 4).

The intervention of coaches is performed during the micro cycle training or during the game. During the micro cycle training, the intervention is sustained primarily on the adaptation/modification of training exercises depending on the diagnosis done based on the performance of own and opposing teams. However, this intervention is also done through meetings which are collective, individual or in small groups.

“…during the week we adapt the training exercises depending on the characteristics of the opposing team (…) I try, especially with the players who are opposition during the training sessions to create some similarities to what we might find in the opponent team.” (Coach 1)

Throughout the game, the coaches reported that half time is the most appropriate moment to perform their intervention. However, they make use of other techniques such as the fact that they have a target player who they often use to transmit information so that it can get to their colleagues, the use of immediate feedback and the use of gestures.

“Normally I produce my intervention at half time (…) because the player is mentally a bit more available, calmer, more serene and hears better.” (Coach 1)

“There are aspects that occur during the game that if not corrected immediately, will be repeated. In these situations the best is to give immediate feedback” (Coach 2)

The coaches interviewed showed a great concern for making an appropriate intervention. To do this, they carefully select the information they wish to convey to players, resort to using images to enhance their feedbacks, perform various meetings throughout the week with a short duration, and attach particular importance to their body language.

“…much of this information we transmit to players; there is other that we do not as they do not need to know everything. They just need to focus on what is essential, as we have all the information to understand some things that may have happened in the game.” (Coach 3)

**Discussion and Conclusion**

The objective of this study was to understand how the professional football coaches prepare, observe and analyse the game and how they carry out their intervention before the information is collected.

The previously presented four tasks of observation, analysis, evaluation/diagnosis and intervention were edified based on the specialists (coaches) statement, who are daily involved in the training process of high performance football teams, exceeding the traditional reductionism characteristic of some current models available in the literature, developed mainly based on theoretical conceptualizations. These four tasks systematize much of the work of a football coach.

In relation to the task of “preparation of the observation” all the interviewed coaches were unanimous in considering that the knowledge that each one has of the game is crucial in order to be able to extract from this activity the aspects that are really important.

At this stage, the coaches consider the development/utilization of media technology as a valuable aid for the observation and analysis of the game. The potential of using technologies like video, or sophisticated software (e.g., Amisco, ProZone) to facilitate the observation and analysis of the game are well described in the literature11,12.

Although these coaches know the currently available software for analyzing performance and while some of them use this type of software in their clubs, they refer that they do not use it very often. This fact is due to the gap between the data generated by this software, and the data that coaches aims to analyze in the game, which are mainly of tactical and strategic nature. In this context, the use of video is the fundamental tool used for performance analysis, since it represents a powerful tool to obtain, evaluate and present information about the performance in sport.

The implementation of the observational strategy involves the observation of a certain number of games depending on not only the ideals of the coach, but also on the economic resources of the clubs. However, the coaches consider that the observation of just one game is not enough since this may not transmit with the necessary precision, the information about the opponent team and may even contain some risks for decision makers. As far as possible the coaches based their analysis on at least two games paying attention to specific situational aspects (e.g., games away vs home games). Teodorescu13 considers that at least three games of the opponent teams should be observed, in order to make the detection of match regularities possible. This finding is consistent with the intentions of the interviewed coaches who reported that they would like to have the possibility of analyzing a larger number of games.

Usually the coaches assign the task of observing the opposing teams to an assistant coach (analyst/observer). This analyst is carefully selected because he needs to have a similar understanding of the game to what the main coach has. These coaches refer that the analyst should have a continuous presence in training sessions of their own team, in order to better know the specificities of the game and players.

However, the observation of opposing teams is not restricted to the observation produced by the observers/analysts. Whenever possible the coaches go to the stadiums to watch “in loco” the opponent teams because they consider that only the direct observation allows a global analysis of the game dynamics. Through this process they can observe a set of events that, in most cases, are not captured by the television, because, in general, they happen in areas away from the center of the game. Another reason is related to the veracity of the collected information, since, according to these coaches, watching games on TV is sometimes misleading. In this way, the coaches apply different techniques to observe, record and analyze the data in order to overcome the natural limitations of human memory, and moving away from the traditional chain that states that an experienced coach can capture all the important events of a game14.

After the “preparation of the observation” emerges the second task called “observation of the game”. The coaches refer more often, the need to observe the global dynamics of teams. In general, they want to observe the collective movements and be...
haviors presented by the teams but also place great importance on the individual players’ characteristics. This analysis is based mainly on the tactical and technical details that might cause perturbations or imbalances in opposing defensive structure, but also for the detection of psychological aspects characteristic of players who can be "exploited" as a function of an appropriate strategy. The importance of observing these aspects is highlighted by the specialized literature. These authors reported that although it is not an easy task to directly access the mental factors, these can be inferred through the analysis of player behavior.

It is natural that coaches focus much of their work on the analysis of tactical schemes and regularities of the game of the opposing teams. In order to more easily observe the game, they split its organization into 4 moments, called: i) defensive organization; ii) transition defense-attack; iii) offensive organization; iv) transition attack defense. Thus, they seek existing regularities inside the game of each team. In this way they can prepare their teams more efficiently for the games against these opponents.

The relevance of the detection of these regular structures of behaviors or patterns of play has been highlighted by several authors, attesting congruence between what are the needs of coaches and scientific research on this aspect. There is a set of aspects which may be observed and that are related essentially to the conditions that characterize the involvement of the game (e.g., weather conditions, state of the grass, type of audience, alongside the goal that the opposing team prefers to attack, the end result, the quality of the opponent, etc.) and allow a deeper understanding about the reality in which the activity will develop. The knowledge of these aspects is considered important because it can influence the behavior of the players and will of course affect their competitive performance.

The interviewed coaches can describe the performed observation on a qualitative/quantitative dichotomy. Contrary to the one suggested by Carling et al. (2005), who consider that coaches should make use of simple statistical data during the game (e.g., number of passes failed, number of times the team achieves the offensive third, etc.) to support their interventions, none of the interviewed coaches mentioned making use of this type of data. A substantial amount of research recently developed, using various technologies that allow quantifying, for example, the distances covered by players at different intensities does not seem to satisfy the need of coaches. However, the literature also states that a strictly quantitative analysis may not provide all the important information of the football game.

The observation of any phenomenon is a dynamic process that is being influenced over the years by the personal experiences and also by a framework of doubts itself, uncertainties and expectations. The football game is developed in scenarios where there are a large number of the factors that influence the quality of the observation (e.g., public, referees errors, momentary results).

The interviewed coaches have the perception of the influence that these factors have on the way they observe and analyze a game and, consequently, how they make decisions from that analysis. Previous researches confirm the influence of spectator behavior, referees errors, expectations and the position on the bench affect both coaches and players. But they also mention some factors like the inadequate behavior of the opponent players and coaches, the error of their own players and unexpected situations in the game as factors that have direct influence in the quality of the observation.

After observing the performance of the athletes and teams, the coaches must identify desirable and undesirable aspects of that performance. The large amount of information resulting from this process must be processed in the analyst’s mind, in order to evaluate the main points of performance and to diagnose the adequate intervention. This may be the most difficult task in the context of this qualitative analysis.

The coaches who participated in this study reported that they initially perform an overall evaluation of teams and then analyze more specifically the strengths and weaknesses. The overall assessment allows them to have a general idea about the characteristics of their opponents, but also, to acquire an idea of how the process that they idealized for their own team and players evolves.

As stated by the literature, these coaches focus their evaluation mainly on the detection of the more and less positive aspects of the opposing team structure in order to “explore” these weaknesses or avoid any difficulties that the opposing team can create according to their most positive aspects. This analysis is performed not only at the organizational level of the teams, but also at the individual level, looking for characteristics that may be relevant in certain players.

The evaluation and diagnosis that the coaches performed are based on a specific logic (i.e., a framework of ideals behind this process of evaluation/diagnosis) that we name logic evaluation. This logic is established, on the one hand, in a relationship of antagonism between the teams in opposition, and on the other hand, in a self-referential that each coach has in relation to his game model.

Once the observation has been conducted and the strengths and weaknesses of the movement have been evaluated and diagnosed, the last task of this process is the intervention, in order to improve the performance. Improper intervention can result in decreased performance.

There seems to be a congruence between what is seen by the coaches (both in their team as well as in the opposing teams), their model of play, and the adaptation and implementation of training exercises. A coach is between the triad: game model, training model and model of analysis. Given this assumption, the interviewed coaches in accordance with some authors, reported that when provided with the information resulting from the games analysis they made changes in the training exercises, which are programmed not only in relation to their own game model, but also in relation to the opponent characteristics, looking somehow to recreate similar scenarios to those that will occur in the game.

Although the training exercises are considered the best solution for transmitting information to the players, the coaches also used other strategies such as: meetings, the use of written reports and video images. The potential of the use of video technology is well known, however many coaches also resort to the use of photography, because the frozen image can highlight all aspects without losing information.

In summary, the qualitative methodology used has led to a conceptualization of expert football coaches’ knowledge. In fact, focusing on what Knudson and Morrison defined as the integrated model of qualitative analysis, the present study has adapted and systematized the different components and their links which appear to be central to the coaching process in football. The proposed model consists of 4 main tasks (preparation, observation, evaluation/diagnosis, intervention). However, the construction of this model is supported not only in a theoretical approach as some of the models that are presented in the literature. On the contrary, it results from the analysis of the reports of high performance coaches in this sport that daily face the reality of the practical application of their knowledge. Thus, it was possible to systematize in a detailed way the different tasks included in the process of qualitative analysis in football.
From this analysis we emphasize the rigor and systematization that characterizes the preparation phase of the observation, beyond the fact that these coaches demonstrate similar concerns in respect to aspects to watch in a game, which are mainly characterized by the detection of regularities/patterns of behavior that emerge from the activity, thereof on a qualitative perspective, rather than a data analysis of qualitative nature, which they consider to be less relevant in this context. The observed aspects are then evaluated taking as reference the specific game model of each coach who, based on that observation, carefully planned his intervention.

The underlying model of the process used by expert coaches to improve sport performance in football was an important basis for formalizing coaching knowledge. Indeed, a deeper understanding of each of the underlying tasks appears to be necessary for obtaining a true understanding of coaching at any level of competition in football.

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TRENAŽNI PROCES U FUDBALU – KVALITATIVNA PERSPEKTIVA

S A Ž E T A K

Ova studija je imala za cilj da otkrije šta je to što treneri posmatraju tokom igre, kako oni ocjenjuju zapažanja i kako interveniju na osnovu svojih zapažanja. U studiji je učestvovao osam iskusnih fušbalskih trenera iz prve portugalske lige. Polu-strukturisani intervju su primijenjeni i podaci su analizirani tehnikom sadržajne analize. Korišćen je softver QSR NVivo 9 sa ciljem da se kodiraju transkripti intervjuja. Ono što su ispitanici istakli kao od ključnog značaja da treneri efikasno posmatraju i analiziraju igru, te da imaju detaljno poznaju fušbalsku igru i individualne karakteristike svojih igrača. Takođe, oni ističu da su najvažniji aspekti posmatranja igre sljedeći: 1) određeni trenuci igre; 2) prekidi; 3) individualne karakteristike igrača; i 4) slučajni aspekti igre. Odabrani treneri za ovo istraživanje, takođe vjeruju da su tokom godina postali efikasniji i da sada vrednuju različite aspekte u igri, dok ističu sljedeće faktori koji su odgovorni za njihovu evoluciju: 1) akumulirano iskustvo; 2) bolje poznavanje igre; i 3) slučajni aspekti igre. Osim toga, oni ističu da su tokom godina postali efikasniji i da sada vrednuju različite aspekte u igri, dok ističu sljedeće faktori koji su odgovorni za njihovu evoluciju: 1) akumulirano iskustvo; 2) bolje poznavanje igre; i 3) akademsko formiranje. Ono procjenjuju svoje istaknute aspekte i primjenjuju određenu logiku prioritetima za procjenu aspekata koji se zasnivaju uglavnom na već odesenim modelima igre. Intervencija se vrši uglavnom preko adaptacije trenažnog procesa, ali i kroz vizuelne strategije (filmovi, fotografije, itd.) i sastanaka (pojedinačnih, sektorskih ili grupnih).

Ključne riječi: Fudbal, analiza mečeva, taktika, trener.