

Reading the game: A key component of effective instruction in teaching and coaching

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Introduction

Coaches of team sports are continuously confronted with having to make sense of the chaotic, ebb and flow of display action that unfolds during the game. It is during this time that the coach must observe, interpret and respond to, continuous sequences of action, whilst remaining relatively cool, calm and collected (Lauder & Piltz, 1999). Similarly, teachers in Physical Education lessons must also observe, analyse and respond to dynamic game play as students engage in a variety of small-sided team games. Coaching and teaching during the cauldron of the game is a difficult and complex task requiring specific skills in observation and analysis. The degree to which the coach and the teacher is able to make sense of the chaotic game display will directly influence their capacity to influence game performance and facilitate player learning (Gross, 1990). Knowledge of the specific activity together with information from the dynamic display is drawn upon by sport educators in order to provide relevant feedback, to modify game conditions, to present problems, to assess player performance and to plan both short and longer term progressive development. Of particular significance for teachers of Physical Education is their capacity to undertake authentic assessment of player performance in games units (Richard & Griffin, 2003).

The purpose of this paper is to draw on key findings relating to the process of bench coaching including 'in game' analysis (Piltz, 2000) and to outline a variety of learning experiences and strategies for teachers and coaches to improve this important aspect of their craft.

Research on game analysis and coaching has focused on using statistical data for evaluating player and team performance, developing game strategy and tactics, and improving practice design (Ejem, 1980; Miller, 1985; Parkin, 1988; Virjee, 1990). The increased sophistication and availability of video technology in recent times has enabled sports coaches to refine their understanding of technique and game analysis through the use of slow motion, frame by frame examination of technical execution and the systematic coding of play patterns (Lyons, 2003). The use of these tools for elite performance analysis in both training and competition has been a significant development for elite coaches that has been recognised by the Australian Institute of Sport through the establishment of the Performance Analysis Unit in May 2002 (Lyons, 2002). Whilst the topic of game analysis appears in many coach education programs for team sports in Australia (Australian Football League /South Australian National Football Coach Education curriculum, 2000; Australian Basketball Association National Coach Accreditation Scheme, 2000; Netball Australia National Coach Accreditation Scheme, 2000) the focus has been directed at providing the coach with knowledge about the topic rather than providing learning experiences that facilitate the development of the skills

needed to coach during the game in their role as bench coach.

Recent changes to the Level 3 coaching curriculum in the high profile professional sport of Australian Rules Football has seen the inclusion of a problem based game analysis learning experience to assist coaches to utilise tools and develop specific skills in game analysis (AFL level 3 curriculum, 2003). Courses for Level 1 and 2 coaches in the AFL however still provide limited practical experiences to prepare coaches to acquire skills in observation, analysis and bench coaching (AFL level 1 & 2 curriculum, 2003). The National Coach Education programs for Lacrosse in Australia use a series of experiential 'player - coach role play' learning experiences to progressively build skills in instruction and game analysis (Lauder & Piltz, 1996; Womens Lacrosse Australia, 2000). These reciprocal player – coach game simulation learning experiences assist novice sport educators to improve their understanding of tactical principles and to develop their capacity to apply contextual information as they observe and make sense of the game (Piltz, 1999).

Reading the play – novice vs expert sport educators

The capacity of coaches and teachers to read the play and make sense of the chaotic nature of interactive games requires higher order skills in observation and analysis. Just as the novice team player has difficulty in reading opponents movement patterns and recognizing relevant patterns of play as they unfold in a game (Starkes, 1987) novice coaches and teachers often spend much time watching the game but in effect see very little. Research on expert players in team sports indicates that they view the game as a complete pattern or chunk of information drawing on prior knowledge of opponent's preferences for movement patterns and predictable team game patterns in attack and defense (Farrow, 2001). Faster recognition of these patterns enables these players to respond quickly in the game, moving to good positions and to demonstrate game sense. Game sense, as defined by Lauder (2001), is "the ability to use an understanding of the rules, of strategy, of tactics, and most importantly of oneself to solve the problems posed by the game or by one's opponents or the game" (p. 36).

Clearly, expert coaches also demonstrate a sophisticated type of game sense as they use their understanding of the game, the players' capacities, the rules, the tactics, the strategy, and the specific game plan, to observe and interpret the game. Skilful bench coaches seem to have an almost uncanny ability to read the game and to make sound tactical decisions while under great pressure (Piltz, 2000). They are able to watch the players of both teams and identify the contributions of individual players, discern team patterns of play, identify the game tempo, recognize emerging opportunities and determine whether or not their team is attempting to carry out its game plan. The expert coach is able to process this information efficiently, decide on possible changes and respond proactively to influence the team's performance by using time outs, substitutions, runners messages, and game time breaks (Piltz, 2000). Communication both verbally and non verbally is a significant aspect of in game 'bench' coaching that impacts on and the performance of individuals and the team (Gross, 1990; Piltz, 2000). Expert coaches see the game from the other teams perspective as well as their own, they plan ahead and anticipate opposition moves and predict likely responses (Piltz, 2000). By adopting this 'chess player' perspective coaches are able to glean relevant

information and use this to provide constructive information to players during timeouts and break periods during the game.

In comparison, the perceptual capacity of novice sport educators is much less refined, limited by their understanding of the game, their capacity to process and make sense of the chaotic game play display and to communicate effectively during intervention breaks. Uncertainty about knowing what to look for in the game limits the process of in game analysis and restricts feedback to general comments pertaining to effort, reinforcement or inspiration (Piltz, 2000). Beginning student teachers in school contexts are often overwhelmed in a similar manner as they contend with managing the array of variables in the learning environment thus restricting their capacity to observe and provide specific feedback on movement performance.

The importance of the process of bench coaching

There was a consistent perception from the coaches participating in the interpretative study on bench coaching conducted by Piltz (2000), that intelligent reading of the game and effective coaching 'in the game' was a significant aspect of coaching at all levels as it enabled the coach in to directly have some influence on the game. Successful coach interventions such as a change in tactic to catch the opposition off guard, a substitution or time out to alter the tempo or momentum of the game, or a positional change to alter the playing dynamic were all cited as examples of coaching strategies that were influential in changing the flow and the outcome of the game (Piltz, 2000). Whilst game day coaching was considered a significant part of coaching its importance was perceived as being relative to the total process of team preparation. The overall success or failure of the team was perceived as being determined more by the quality of training and preparation, on a daily, weekly, monthly and longer term basis than on any particular changes made during the game (Piltz, 2000).

In a broader sense the process of bench coaching was identified as being significant because the behaviour of coaches can impact players either positively or negatively in the short term but also in the longer term far beyond a single game (Piltz, 2000). The choices that coaches make during the game including who is played for what amount of time, who is taken off, and the manner in which the coach responds and communicates can have a significant impact on the players confidence level, emotional states and performance (Gross, 1990; Piltz, 2000). The emotional environment in which communication occurs on game day varies for the coach and players as they interact in the pre game address, the post game debrief and during the game (Piltz, 2000). Messages are communicated by the coach in verbal and non-verbal ways and players respond not only to the content of the message but also to the way in which the information is delivered through voice tone and body language. Consistency in all modes of communication is needed to ensure that the spoken words, tone and the body language all transmit a clear and consistent message (Galanes, Adams & Brilhart, 2000).

The body language of the coach during the game when emotions are heightened is considered to be a significant form of communication with players and the manner in which a coach responds to player mistakes can influence individual and team performance (Piltz, 2000). If a player makes a mistake during the game and looks over at the coach who has his/

her head down or throws up his/her arms in disgust then the player is likely to dwell unnecessarily on the error rather than refocus on the immediate game context. The paradigm that the coach adopts towards the issue of making mistakes can impact on the quality of the learning environment created for players in games and at practice (Piltz, 2000) and as such the coach must communicate their perceptions about making mistakes to the players early on in the season in order to establish a shared understanding of this attitude within the team. This can be facilitated by the coach through discussion with the players about the place of mistakes in the process of learning and by encouraging players to understand that no matter who the opposition is or how well you prepare your team both players and coaches are going to make mistakes, forced or unforced - the significant thing is the manner in which the coach and players responds to them (Piltz, 2000).

Coaching 'in' the game

As Launder and Piltz (1999 b) suggest coaching in the game becomes “an expanding and revolving diagnosis of play” (p. 25) where the coach continuously asks an array of questions about what is happening in the game. The nature and complexity of the questions asked by the coach relate to the performance level of the players. With a team of beginners the coach may first look to see if players remember which way they are going when the team gains possession of the ball or have if they remembered their basic team assignments. With an elite team the focus prior to the start of the game may be directed at key positioning match ups, and once the game gets underway it may shift to player focus and readiness to play (Piltz, 2000). The scope of the focus expands as the game progressively unfolds and the coach seeks information about what is happening in the game. Offensive and defensive patterns of both teams are appraised to determine how tightly the defenders are tracking and marking their opponents, the possession pattern from center contests, the manner in which the team is responding at the point of transition, the quality of defensive coverage and if specific assignments to block out players are working. Since it is difficult for a single coach to watch everything that is happening in the game at the same time, observation must be focused and systematic. The expert coach appears to operate almost intuitively in this domain drawing on the wisdom accrued from past experience and on a capacity to instantaneously reflect and learn from real time game analysis (Piltz, 2000).

Developing a focus for observation

Learning experience 1

The first learning experience is designed to engage sport educators in the process of meta-cognition or thinking about their thinking as they observe a short period of game play.

Participants are asked to independently observe a few minutes of a 4 v 4, passing game called 'endzone' that is played with grip ball pads and a velcro ball. They are to record a few notes about the focus of their observation and about what they see happening.

Following the period of observation and recording, groups of 2-3 sport educators come together to discuss their thinking and observations of the game play. Not only does this process challenge the group to consider their thinking patterns but it also enables the sport

educators to appreciate the differences that exist in the coaches perceptions of the game and their focus for observation.

Learning experience 2

The participants collect one of three coloured cards, containing information to focus their game observation. They then select one team and observe 5 min of the same end-zone game making notes about their specified points of focus.

Pink Card

- 1. Communication patterns – observe the verbally and non verbally communication patterns used by players*
- 2. Agility - observe the ability of attack players to 'get free' from their defenders*
- 3. Tactics in attack - observe the positioning of the attack players who are supporting the player who is in possession of the ball.*

Blue Card

- 1. Application of the rules - observe for common rule breaches in the game*
- 2. Technique – observe the ability of players to control and redirect the ball*
- 3. Tactics in defence – observe the positioning of players when the other team have possession of the ball*

Green Card

- 1. Tactics in attack – mobility. Observe the positional movement patterns of players on the court to create and utilise space*
- 2. Team resilience –observe the capacity of individuals to remain focused and persist with effort in the game*
- 3. Fitness –observe the players capacity to consistently move into defensive and attacking places on the court*

After completing this observation the coaches who were observing the same team with the same focus pair up to compare notes on their perceptions of what they saw happening in the game. In the next discussion coaches who were observing the same team from each of the different focuses join together to share their analysis and to build a more complete picture of the game. Following this group discussion each coach had to plan and present a 10 sec time out address that included at least one positive aspect of play and a key point of focus for when the team returned to play. These learning experiences paved the way for discussion about the nature of the filters or templates that direct coach observation in the game and the issue of addressing players during game interventions.

Addressing players during game interventions

Game interventions such as time outs, quarter and half time breaks are opportunities for coaches to transmit game analysis information to the players in order to influence individual and team performance. During these intervals, communication to the players that is positive, constructive and specific is of greater value than negative or very general remarks (Gross, 1990; Hessert, 1999; Piltz, 2000). Information in the form of specific feedback needs to be relevant to the game context and linked closely to what the players understand. Coaches

should avoid presenting a running description of what happened but rather present information that directs future action for both the individual and the group in a positive way. In the highly emotional environment that can surround sport competition it is essential that the coach have thought through and planned their approach for addressing players for all intervention periods prior to the event (Hessert, 1999; Piltz, 2000). During the pre-game address coaches must avoid over verbalizing and learn to present the essential key information in productive ways using both verbal and visual means. One pertinent suggestion provided from an expert basketball coach indicates identifying three key offensive and three key defensive points of focus in the pre-game address in the rooms followed by reiteration of the three most important aspects on the floor prior to the start of the game (Piltz, 2000).

Multiple lenses that guide observation

Expert coaches draw on an array of lenses or templates to direct their observation patterns as the game unfolds (Piltz, 2000) and the variety of lenses that coaches are required to access whilst coaching in the game is dependent on the level of play and the complexity of the game. Complex games involving larger teams of players participating at professional or elite levels of competition challenge the coach to undertake rapid and multi-layered analysis. To do this successfully the expert coach draws information for decision making from a range of sources including assistant coaches who are responsible for analyzing specific areas of play and from a variety of in game statistical measures. The vast majority of coaches operating at the club level do not have access to this array of resources so they must eyeball the game and make sense of it. In order to do this the coach must understand the nature of the game and use this knowledge as a template to guide observation and analysis of individual and team performance.

Lauder (2001) has identified a model of competencies that can be applied to analyze the nature of the game and to identify the key elements of effective play in the sport. It also serves as a lens to guide coach observation and in game analysis. The elements of this model have been defined in relation to the functional capacity of players in the game. They include *athleticism* that enables the player to get quickly into the right spaces in game, *knowledge of rules* that enables players to determine what can be done in the game, and an understanding of *tactics* that forms the basis of team play through shared understanding amongst players of positioning and movement in attack and defense. Other elements include *communication* to promote team-work, *fitness* to enable players to continue to get into the right places and maintain good positioning throughout the game, *technique* to enable the player to control and redirect the object effectively and *mental toughness and resilience* so that the player can 'keep on keeping on' particularly in the tough phases of play. In addition to these components the player must be able to *read the play*, anticipate, make good decisions and demonstrate *game sense* (Lauder, 2001). This framework provides a overall lens for observation that can be used to make sense of the game, analyze and direct future actions to improve individual and team performance.

A tactical template - the Principles of Play

The tactical element of Lauder's (2001) model of effective play can be unpacked further to provide a more detailed lens for observing and analyzing player positioning and decision

making during the game. The tactical principles of play developed in the 1950's in the sport of soccer provide a framework for guiding individual and team understanding of positioning and mobility during game play (Hale, 1967; Wade, 1967). Soccer coaches are taught the principles of play and they utilize this framework as a lens for observing various aspects of tactical game play including the support positioning of attacking players, the width of the oppositions attacking structure, the speed at which the opposition close down the attack, the movement pattern of player in defensive transition and the defensive depth and cover (Gowan, 1981; Piltz, 2000). The principles of play can be applied to direct observation in a range of team invasion games such as hockey, football, lacrosse, basketball, netball and touch where similar positioning patterns in attack, defense and transitional play exist. The tactical template provides an important lens for in game observation as it enables the coach to read the patterns of play as they unfold and process this information to make informed tactical and strategic decisions. Different sports use their own terminology to describe the general tactical framework that operates within their particular game. Soccer, hockey and lacrosse utilize the concept of tactical principles of play, basketball refers to rules or principles and Australian rules football have in recent times begun to identify 'patterns' of play (Piltz, 2000).

Learning experience 3

This learning experience involved the coaches observing a 3v1 and then a 3v2 attack transition play pattern in basketball. Once again the coaches selected one of three focus cards that directed their game observation.

Card 1. Focus is on observing the defenders.

- *Do they move to delay the ball carrier? Are they positioned to move into the passing lanes? Are they alert, balanced and ready to react?*
- *Do they provide pressure on the ball carrier? Do they recover and move once the pass has been made?*
- *If there is more than one defender – do they work together to delay the ball and recover to a position where they can get to the next pass?*
- *Does the second defender read the play and anticipate the passing option?*
- *Do they provide constant pressure on the ball carrier by moving and then adjusting their position quickly?*

Card 2. Focus on observing the attacker with the ball.

- *Do they scan the court?*
- *Do they dribble when there is space to do so?*
- *Do they select the correct passing option?*
- *Do they deliver the ball safely? Do they pass the ball wide of the defender? Do they pass the ball to the target provided?*
- *Where do they move to after the ball has been delivered? Do they position themselves to be a receiving option?*

Card 3. Focus on observing the attackers without the ball.

Observe their positioning on the court.

- *Do they move to support the ball carrier by using width?*
- *Do they support the ball carrier using depth in front and behind the ball?*

- *Do they position themselves to provide safe passing options? Do they move quickly into the space? Do they indicate a passing target?*
- *Once the pass has been made do they move to provide an alternative passing position?*

After observing the game play for a few minutes using the specified focus the coaches were asked to form a group with two other coaches who observed the play with a different focus. This enabled the group to discuss what they saw happening in this play pattern and it enabled the group to identify the components of the principles of play that they used as a template to guide their observation and analysis.

Other lenses to guide observation and analysis

As game complexity and team performance increases the coach draws on more than just the tactical principles of play to observe and analyse the play. The weekly game plan provides a direction for playing specific opponents and it presents an additional framework for analysing game play (Piltz, 2000). It is constructed by considering the strategy of both teams, identifying the strengths and weakness of both teams and then designing a plan of action to maximise strengths and minimize weaknesses.

A game of chess

It appears that coaches, like good chess players, must learn to plan ahead and anticipate, they must learn to see every game from the other teams point of view. In this way they can blueprint the game two steps ahead and they can begin to anticipate opposition moves and predict likely responses (Piltz, 2000). To a certain degree they must be coaching both teams. By adopting this perspective coaches are able to glean relevant information that can be used to inform players during timeouts and break periods during the game. The process of observing both teams is not easy. Coaches require an awareness of the flow of the game and an appreciation that certain things may change at given times in the game. Whilst there appears a strong agreement amongst coaches that if your games going well then don't change it, there is also a consistent sentiment that the coach needs to remain alert to the possible changes that the opposition may make to upset your playing pattern and game plan (Piltz, 2000).

Real time data - statistics during the game

Collection of data on performance during the game can be valuable at a basic or an advanced level of play when it provides the coach with relevant information in order to gain a clearer picture of what is happening in the game. Statistics can include authentic play specific measures such as shooting percentages, entries into specified areas, defensive clearances, possessions as well as authentic measures of individual effort or sacrifice for the team. Coaches who value these seemingly intangible measures of play intensity and sacrifice have defined and quantified these behaviours and objectively tracked them as key game performance indicators (Parkin & Bourke, 1999; Piltz, 2000). By defining these effort areas it is possible for coaches to encourage players to direct their attention to doing these things well and for coaches to use them as another lens to observing and analysing player performance. Sport educators need to be aware that the amount of information generated in the form of game statistics can become overwhelming at times and they need to recognise that more

information is often not as important as how the coach interprets and responds to the information that they already possess.

Improving coaches capacity to read the game.

In order to quickly develop the observation skills necessary for effective in game analysis the coach must spend time watching lots of games, particularly at a level above the one that they are coaching (Lauder & Piltz, 1999a). This specific practice of observing games where the tempo is higher challenges coaches to identify what is happening during faster paced game play and speeds up their capacity to observe and analyze the action. This practice of watching games can include observing live action as well as video recordings in order to build a bank of relevant contextual information about the way that teams are playing. Coaches are able to practice watching both teams in order to identify play patterns, individual habits, and tactical changes. It is also beneficial for coaches to observe different sports that involve similar tactical concepts so that the coach is able to develop their capacity to identify attacking and defending patterns of play, off ball mobility and team response actions at point of transition. Coaches need to exhibit a clear understanding of the tactical principles of play associated with their activity and this needs to be actively taught to the players as a way of consolidating their knowledge and establishing it a key template for game observation.

Training sessions

Training sessions provides a valuable learning time for the coach to practice their skills in observation and analysis. As coaches plan training that is closely aligned with the demands of the game they include game like practices that develop the players capacity to think and demonstrate game sense as well as other elements of effective play (Lauder, 2001). This practice environment enables coaches to observe and analyze the play and develop their skills in communication and questioning with their players. The development of thinking, reflective players is advantageous for any team as these players can take greater responsibility for influencing on court action and implementing the game plan. These players are able to undertake on court leadership because of their capacity to think the game and play it at the same time (Piltz, 2000).

Mentoring and reflective practice

Coaches who are able to monitor and reflect on their practice have the capacity to undertake lifelong learning and maintain ongoing professional growth. Working with a mentor coach can be a valuable way to improving game analysis skills and to develop the capacity to reflective constructively on various aspects of the coaching performance. Mentor coaches can be involved on game day by observing the mentee coach in action providing relevant information about communication patterns during interventions and by questioning the process of in game analysis. Novice coaches can observe and make notes about team performance in a game that the mentor is coaching and discussion can follow about the observed patterns of play and significant influences in the game (Lauder & Piltz, 1999a; Piltz, 2000). Coaches can also make use of strategies for self assessing aspects of their coaching behaviour. They can use voice or video recording of their communication patterns during game interventions and review these in a constructive way to gain feedback and plan to improve performance (Kidman, 1994a; Kidman, 1994b).

Reading the play and undertaking in game analysis is a central component of effective coaching in team sports. The challenge for coach educators is to tease out the critical components of this ability, make them intelligible, and find ways of facilitating all coaches to improve this crucial aspect of the coaching craft. This paper provides information about this component of coaching and presents a framework of practical strategies that can be used for developing these specific coaching skills.

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