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Building a House of C.A.R.D.S.: The Practice Structures of Coaches in a Professional Rugby Union Academy.

BUILDING A HOUSE OF C.A.R.D.S.: THE PRACTICE STRUCTURES OF COACHES IN A PROFESSIONAL RUGBY UNION ACADEMY.

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INTRODUCTION

Our aim in this chapter is to provide insights into the practice structures used by coaches of the Newcastle Falcons rugby union Academy. We report how training session activities are organised and adapted to purposfully develop creativity, awareness, resilience, decision-making and self-organisation (C.A.R.D.S.) among players aspiring to compete professionally. This chapter is timely because the C.A.R.D.S. framework of priority outcomes, recently developed by England Rugby to help players explore the boundaries of their capabilities, is being widely promoted to coaches by the National Governing Body. In pursuit of our aim, we explore the integration of theory connected to the organisation of training activites through real-world examples from the Academy setting, drawing on contemporary research evidence to illustrate their application in everyday coaching practice.

A GLIMPSE AT HOW WE COACH

Each season, we set out to create opportunities for every player in the Newcastle Falcons Academy to explore the boundaries of their capabilities and adapt to the

changing nature of the game of rugby union by developing creativity, awareness, resilience, decision-making and self-organisation (C.A.R.D.S.) skills (England Rugby, 2017). In this section, we provide real-world examples from the Academy setting of how we structure training activities with the aim of developing C.A.R.D.S. Being constrained by space, we are unable to give exhaustive coverage to our practice structures, but the examples offer a glimpse into *how* we coach and to how the individual C.A.R.D.S. skills are strongly interrelated.

CREATIVITY

England Rugby (2017) define creativity as "the skill to achieve a specific outcome in different ways." To promote creativity, as with each of the C.A.R.D.S. skills, we adapt the rewards (e.g., points) and constraints (e.g., rules) of activities used in training, whilst also recognising that purposeful practise will be needed to refine the effectiveness of any action after its initial attempt. Typically, we make amendments to field dimensions, scoring zones and prerequisites to score or regain the ball (e.g., 2v1 must be executed first; four passes maximum), alter team groupings or the laws connected to the tackle area, and substitute other objects for the rugby ball. Players may also be awarded "bonus points" for successfully attempting a novel solution to the challenge posed by these constraints.

As an illustration of these principles, 4v4 and 5v5 games of "end ball" are used with forwards focussing on lineout strategies, with each team attempting to move the rugby ball from one end of a 30m x 15m pitch to the other using

successful lineout throws and catches. Mirroring Fenoglio's (2003) findings from academy soccer, we see a more diverse range of solutions explored by players in their efforts to retain and intercept the ball in this activity, as well as more numerous lineout throws completed by hookers (over more varied distances and trajectories), when compared to larger or full-sided games of the same duration. In turn, this enables critical discussions with and among players related to the more and less successful strategies they attempted under different circumstances, which informs subsequent awareness, decision making and self-organised coordination of action. Similarly, it helps to inform the personal constraints and challenges we apply to players to promote further exploration of the boundaries of their capabilities. For instance, a hooker who is comfortable throwing to the nearest "pod" might be constrained by only being able to use a front-pod option twice in the ensuing period of the game. Alternatively, they may only be able to gain one point for each successful front-pod throw but can gain five points each for throws completed to options behind the front pod. Bonus points are awarded for teams using deception (within the laws of rugby) to successfully win the ball in unconventional ways.

AWARENESS

Awareness is understood by England Rugby (2017) as "the skill to recognise individual and collective opportunities to support decision making." Passos *et al.* (2012) confirm the importance to rugby players of perceiving opportunities in the

environment, not only for themselves but also for others, because being aware of these can support effective decision making. We regularly add constraints to individual players during games using bibs and headbands as indicators of their "superpowers". The player wearing a headband on the blue team, for instance, might need to be grabbed by two defenders before a simulated tackle is achieved, whereas all other players can be tackled by one defender. At the same time, the player in a headband from the red team might gain an instant turnover of possession if they tackle the blue player with the headband. Thus, players are challenged to be aware of their own and others' strengths and weaknesses, and the opportunities for action these present, which we have found promotes the creative exploration of solutions through coordinated decision making and self-organisation.

Sometimes, constraints are applied without us drawing players' attention to them, such that they are required to be continually aware of their changing environment. For instance, the conned boundaries of a small-sided game might be quietly expanded to see if players recognise this additional space in which they can attack and defend. Similarly, on a standard rugby pitch, full-sided play is regularly restarted from different areas (e.g., Scenario A: lineout on defending team's five-meter line; Scenario B: attacking scrum on the middle of the halfway line). The effect is to constrain players' staring positions relative to the pitch boundaries, the ball and each other, which has been shown to influence emergent decision making and action in rugby union (Correia et al., 2012). We often add

contextual information to these situations that challenges players to adapt and make decisions under pressure (resilience), such as the defending team in Scenario A being four points ahead in the final minute of a game, so that they need to prevent a try and the attacking team score a try within a given time in order to achieve their objective.

RESILIENCE

England Rugby (2017) consider resilience to be "the skill to adapt to pressure." Therefore, some of our place kickers have completed competitive kicking sessions together in front of 8000 spectators during half time in the senior team's league matches. Time pressure is often imposed by us on skill execution (e.g., "you've got 30 seconds to try and get the ball back through an interception") and self-organisation during training (e.g., "you've got one minute to discuss a strategy to stop them winning the ball at the front of the lineout"). Competitive pressure, focussed on skill execution, is regularly added to how games are restarted (e.g., "best body shape in a 1v1 scrum gets the ball to start the game"; "if the red player can score a drop goal from here, they get the first attack" etc.). Moreover, speed and fatigue are used to challenge players. For example, a tennis ball can be passed more quickly between attackers than a rugby ball. Replacing the rugby ball with a tennis ball in small-sided games places additional pressure on defenders' decision-making skills and self-organisation.

Making frequent amendments to the constraints of training activities (as above) is itself a form of adversity, as players need to remain aware and quickly adapt to respond to the new challenges posed. We accentuate this by making controversial refereeing decisions during training (e.g., not calling a tackle even if a player is touched; ignoring a knock on). Similarly, we might call "next try wins" but actually allow the activity to go on for another three tries, all of which is intended to challenge the players to positively adapt to the naturally variable interpretations of rugby's laws by real referees, remaining aware and self-organised in order to make good decisions even under fatigue and when frustrated or disappointed.

DECISION MAKING

Becoming an effective decision maker involves developing "the skill to select an effective action in all situations" (England Rugby, 2017). Underpinning this, players must be aware of relevant opportunities (affordances) in the playing environment and correctly interpret these before they can act (Araujo, Davids, Chow, Passos, & Raab, 2009). To achieve this, building on the scenario examples (above), we include representative volumes of different origins of ball possession and durations of breaks in play. For example, there are on average 18 scrums per match (an origin of possession) at the level our athletes are aspiring to play (International Rugby Board, 2014). Accordingly, we try to include restarts from various "scrum" situations in training sessions (perhaps in sub-units of 1v1, 3v3 or

5v5, as well as 8v8). We also try to base breaks in training activity (e.g., for coach whole-group instruction, feedback or questioning, player discussion and reflection, transitions between activities, and water breaks) on the typical duration of breaks in match play. This helps to challenge players' resilience, for example, to efficiently discuss a strategy for the forthcoming passage of play under relevant time pressure. Decision making and awareness are also developed using video-based training. Here, players are tasked with reviewing themselves, their opponents and other players (e.g., the club's senior players and team). This is combined with notational analysis of performance, showing statistical profiles of patterns of play, which together support players' awareness and detection of action possibilities underpinning decision making (Passos et al., 2008).

SELF-ORGANISATION

Self-organised players will have "the skill to use information to effectively coordinate themselves" (England Rugby, 2017). We use constraints to emphasise the importance of players organising themselves, because it is the players who make decisions during match play. For example, when amending constraints and challenges, as described above, we sometimes quietly pass this information to only one player on each team, allowing the broader training activity to continue. This allows us to observe how effectively players then share information to co-adapt as groups. We also try to disrupt the traditional structures of training sessions observed in many coaching contexts to further challenge players to

coordinate their actions. For instance, rather than being kept in a group together, we have tried placing water bottles individually at intervals around the playing area. Players must, therefore, split up to retrieve a water bottle during rest periods, which accentuates their need to actively reassemble so that information and strategies for subsequent play can be explored.

THEORY-INFORMED PRACTICE STRUCTURES

The term "structure" seems unfashionable in coaching at the moment, perhaps because it conjurs up images of rigidly traditional, heavily coach-led and strictly controlled training environments. Coaches we talk to often try to distance themselves from these ideas, making claims instead to a more "contemporary philosophy" that is less structured. Alongside this, we regularly hear buzzwords such as "game sense", "player-centred" and "empowerment" combined to describe coaches' intentions, as if these few words alone coherently capture, in its complex entireity, some kind of structureless "right" way to coach rugby[1]. Our point here is not to say these particular ideas are wrong; indeed, there is growing evidence available, specific to rugby union, which enables critical appreciation of the benefits and challenges of their implementation (e.g., Hodge, Lonsdale, & Ng,

[1] Such terminology has gained traction through its promotion in rugby coach education in the UK and further afield since the mid-1990s (Reid & Harvey, 2014).

2008; Light & Robert, 2013; Reid & Harvey, 2014). Instead, our concern rests on how frequently these and similarly simplistic descriptors of coaching are exposed as poorly understood, partly-formed or hollow rhetoric when we probe a little deeper and ask coaches to translate their claims into reality. All to regularly, we observe coaching practice that (unknowlingly) ignores, deviates or contradicts the concepts and research evidence associated with the terms used by coaches to describe it. Yet, the value of any claimed approach to coaching should be evident not only in the coach's ability to articulate its principles and justify its worth through logical argument, but in an embodied practical mastery of these things in practice.

As we hope to have illustrated through the examples given above, a degree of structure is integral to the coaching process. We take structure to mean the organisation and adaptation of the physical and socio-cultural learning environment including its spatial (space) and temporal (time) characteristics, which incorporate the arrangement of participants (e.g., players and coaches) and resources (e.g., cones, bibs and balls) together. Without at least some structure, coaching, as a series of purposeful interactions between coach(es) and athlete(s), simply could not occur. Consequently, absolutist claims that treat structure as being a bad thing and directly opposed to agency (freedom) as a good thing in coaching do not hold. Instead, we draw upon broader thinking about the causes of human social behaviour, notably from Pierre Bourdieu (1977), among others, who

argued that structure does not exist without agency and vice versa[2]. Such thinking avoids positioning behaviour either as something entirely caused by external influences (deterministic) *or* as decided entirely by free will (voluntaristic). As Lemert (2012 p.42) explained, what people think and do is "simultaneously a result of social rules and of their own individual flourishes". In other words, social organisation should be understood to create possibilities and constraints for action (also called *affordances*), the coach's skillful orchestration of which can help to direct the coaching process towards certain objectives by mediating learning.

In our own attempts to skillfully orchestrate the coaching process, we draw upon a range of concepts from dynamical systems theory, representative design, non-linear pedagogy, constraints-led coaching and games-based approaches. Importantly, each of these ways of thinking – including the C.A.R.D.S. framework itself – shares a common foundation: a constructivist learning theory. Constructivism views knowledge as something actively *constructed* by learners as they experience situations and interactions with others (Light & Wallian, 2008). This contrasts with outdated notions of knowledge as being inert and separate from the learner, which suggest knowledge can be passively transmitted from the coach – as an expert – to the player – as a novice recipient. Rather than being rooted in authority, dictating players' learning through excessive instruction and decontextualised repetition, we approach our

[2] We also recognise that socio-cultural relations (i.e. structure/agency) shape coach behaviour, but a broader, more holistic discussion is beyond the scope of this chapter.

coaching as interactive facilitators of the coaching process. Again, we emphasise that facilitation is not a totally "hands off" approach; it is about stimulating players to become active thinkers, who share responsibility for their learning, make decisions, explore solutions and accommodate new experiences. Consequently, we believe our task as coaches is to support players to engage in interpretive sense-making and processes of adaptation as they participate in the learning environment together. It is for these reasons that we to pay close attention to how the learning environment is structured as we seek to develop C.A.R.D.S.

Building on these constructivist foundations, we hold a series of research-informed beliefs that are relevant to structuring the training environment: (1) rugby can be characterised as a highly complex system composed of numeorus interacting components (e.g., individual players etc.), which create dynamic, non-linear and emergent conditions (Light, Evans, Harvey, & Hassanin, 2015); (2) these conditions produce uncertainty as well as constraining and affording opportunities for action by players (Passos, Araújo, Davids, & Shuttleworth, 2008); (3) the effectiveness of players' tactics, strategies and decision-making is heavily dependent on their ability to notice and then act upon these affordances[3] (Renshaw, Davids, Shuttleworth, & Chow, 2009); and (4) transfer of learning from training to performance will, therefore, be more effective if training environments are designed to be representative of match environments (Pinder,

[3] Affordances are perceived opportunities for action (action possibilities) provided by the environment (Passos *et al.*, 2008).

Davids, Renshaw, & Araújo, 2011). It is worth stressing the point that actions are tied closely to perception, cognition and social interaction, so we try to organise training activities in ways that help players become attuned to key sources of information in their environment and to explore together skilful solutions to the affordances of these circumstances. Without this, players will lack sensitivity to or awareness of the most relevant stimuli for action. For instance, in a study of rugby coaching practice, Hall *et al*. (2016) noted that training activities were frequently restarted by coaches when a group lost possession of the ball, which prevented players from exploring transitions from defence to attack and attack to defence when a turnover occurred in open play. Given that 13% of tries came from turnovers in a recent men's Junior Rugby World Cup (International Rugby Board, 2014), this suggests training should be structured in ways that enable academy players to perceive, decide and act in response to transitions in posession.

To ensure purposeful training, where players explore solutions to situations that are representative of match conditions, we draw upon principles from constraints-led and games-based, as well as non-linear pedagogy research. Constraints, which we have referred to extensively in describing *how* we coach, are simply the demands we manipulate in any activity that serve to amplify certain information available to players within the learning environment in pursuit of particular goals (Carvalho, Correia, & Araújo, 2013). These have been classified into individual or *organismic* (e.g., emotions, physical size, motivation),

environmental (e.g., weather conditions, socio-cultural influences) and *task* constraints (e.g., rules, boundaries, equipment; Newell, 1986). By manipulating the constraints of the learning environment (e.g., by changing player groupings, pitch boundaries and scoring mechanisms) we try to prompt players to:

> "…search for alternative task solutions (improving their ability to cope with inherent performance variability) in dealing with unpredictability." (Passos et al., 2008 p.132)

Newcastle Facons Academy players generally experience constraints in non-linear games, meaning their skills are developed in game-based activities that are more authentic to the complexities of rugby union match play; rather than developing skills in the less authentic, technically focussed, blocked practise of highly-repetative drills. In line with constructivist learning theory and the C.A.R.D.S. skills, our careful and strategic manipulation of the structural boundaries (constraints) of training activities situates learning as problem-solving, the players as active learners and decision makers, and positions us (the coaches) as orchestrators, steering and shaping a dynamic, interactive and engaging coaching process (Jones, Bailey, & Thompson, 2013). Thus, we use and modify the constraints of games to promotes players' individual and collective awareness of affordances, their resilient adaptation to changing pressures over time, and a coordinated self-organisation of behaviour as the boundaries of their capabilities

are creatively explored in search of solutions to the problems posed by the learning envornment.

SUMMARY AND RECOMMENDATIONS

We have presented examples of how training session activities are organised to purposefully develop creativity, awareness, resilience, decision-making and self-organisation (C.A.R.D.S.) skills in Newcastle Falcons Academy players. Our major focus has been on the use of constraints in non-linear games, which unnaturally ignores the importance of the coach's complimentary behaviours to the effectiveness of these structures (and others), because coach behaviour is discussed in greater detail elsewhere. Still, we hope to have raised awareness of principles from representative design, non-linear pedagogy, constraints-led coaching, a games-based approach, and constructivist learning theory, as well as an appreciation of what these can look and feel like in practice (Reid & Harvey, 2014).

We have introduced ideas about how to manipulate the learning environment to challenge academy rugby players to seek a range of effective solutions to performance-relevant cues. We recommend you explore and critically reflect on how the following can be implemented in your own coaching context:

- Develop match-like training scenarios incorporating representative volumes of different origins of ball possession (e.g., scrums, linouts, penalties, free-kicks and other restarts, and turnovers) along with representative durations of breaks in play[4].
- Plan a range of constraints that can be adapted in each training activity to accentuate different (relevant) affordances that prompt players to search for varied performance solutions.
- Ensure individuals and groups are supported to reflect upon how effective their tactics, strategies and decision-making are in different situations, and to plan how these could be developed, improved and adapted for other scenarios.
- Identify in advance how you will notice players demonstrating each of the C.A.R.D.S. skills, and how you will then reward and challenge these further taking account of players' learning needs.

We hope that those reading this chapter will consider critically the important role the coach plays in structuring the coaching process. Skilfully orchestrating affordances by manipulating the constraints of games used in training sessions can create opportunities for players to test the boundaries of their capabilities and direct the coaching process towards the purposeful development of C.A.R.D.S. skills. This is about challenging players as active thinkers and decision makers to be aware of their learning environment, and through co-

[4] These should also ensure adequate recovery time for player wellbeing and desired training effects.

ordinated self-organisation to creatively and resiliently explore solutions to the challenges and opportunities they face. To achieve this, we believe coaches also need C.A.R.D.S. skills: *creativity*, to generate and evaluate different constraints and coaching practice that challenges players appropriately; *awareness*, to consciously notice their own and others' contributions to the learning environment; *resilience*, to adapt well under pressure and in the face of challenges; *decision-making*, to make good choices about what to do (and not do), as well as knowing how to do this effectively and why; and *self-organisation*, to co-ordinate oneself and others to maximise the outcomes of the coaching process through planning, co-operation and shared critical reflection.

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