An exploration of the epistemological basis of red ball and white ball cricket - The what, how and why of coaching cricket to developing athletes

by

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STUDENT DECLARATION FORM

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I declare that while registered for the research degree, I was with the University's specific permission, a *registered candidate/*enrolled student for the following award:

PG Dip Elite Cricket Coaching (*in conjunction with the ECB Level 4 coaching qualification in partnership with University of Gloucestershire)*

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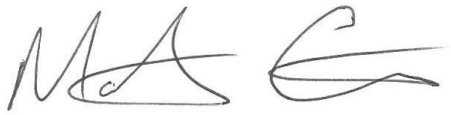

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Abstract

The aim of the thesis was to address and inform a gap in the current literature in relation to epistemology and the Epistemological Chain (EC). Whilst these concepts are well researched within education (e.g., Hofer, 2002; Nespor, 1987; Soleimani, 2020; Tarmo, 2016) and more recently across range of sports including golf (e.g., Grecic & Collins, 2012; Grecic, Macnamara, & Collins, 2013), adventure sports (e.g., L. Collins & Collins, 2015, 2016; L. Collins, Collins, & Grecic, 2015) and football (e.g., Olsson, Cruickshank, & Collins, 2017) until now, exploration of these concepts as influencing factors on coach decision-making and resulting coaching practice, specifically within cricket, does not exist. Therefore, the aim of the thesis was to explore the epistemological basis of coaching red and white ball cricket to developing athletes.

The findings of an initial longitudinal study (Chapter 4) revealed, and a follow up study including a wider sample of coaches (Chapter 5) confirmed, that coaches held different epistemological beliefs based on the format of the game. Coaches held increasingly naïve epistemological beliefs in relation to coaching red ball cricket, yet increasingly sophisticated beliefs in relation to coaching white ball cricket. The findings culminated in the creation of models of coaching across both formats of the game, identifying key characteristics of coaches' EC and coaching practice.

As a result of such polarised views held by coaches, the epistemological beliefs of players within the developing athletes' context were sought (Chapter 6). The findings revealed that players too held increasingly naïve epistemological beliefs in relation to learning in red ball cricket and increasingly sophisticated beliefs in relation to learning in white ball cricket.

In actioning the pragmatic aspirations of the thesis, Chapter 7 once again returned to working with coach-participants, with the aim to offer insight into coaches' practice through participants' involvement in an Action Research (AR) project. Results

of the initial AR cycle identified a softening of the previously identified contrasting epistemological beliefs, along with a positive view of the utility of the thesis. Most notably, the chapter was positively socially validated by those involved. Finally, the models of coaching were refined to reflect the softening, yet distinctive approaches to coaching red and white ball cricket.

Findings of the thesis have added to the existing evidence base in relation to epistemology and EC, specifically in regards to the distribution of, and extent to which epistemological beliefs appear to be context specific within cricket. Clear recommendations are made for those involved in coaching and coach educating in cricket, with the ambition of increasing self-awareness, and hence effectiveness of those involved.

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Peer Reviewed Publications produced from this Thesis

Crowther, M., Collins, D. & Holder, T. (2018). What you think – What you do – What you get? Exploring the link between Epistemology and PJDM in Cricket coaches, *Sports Coaching Review*, *7*(1). 63-81, DOI:10.1080/21640629.2017.1361165

Coach Education workshops delivered from this Thesis

Crowther, M. (2020). How learning happens: Exploring coaches' epistemology. ECB Level 4 coaching qualification workshop. Delivered online. 11th November 2020.

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CHAPTER 1: INTRODUCTION

Epistemology is the branch of philosophy concerned with the nature and scope of knowledge and learning. It is a significant, underpinning part of a coaches' philosophy, which can help coaches clarify motives and provide direction to their coaching (Kretchmar, 1994). Epistemology is concerned with answering the questions of what knowledge is, how it is acquired, and how do we know what we know (Grecic & Collins, 2013) and is said to develop as a result of home and educational life (Anderson, 1984). It is important because it is fundamental to how we think, perceive, value and learn about knowledge (Perry, 1981). Previous research has shown that epistemological beliefs can provide a basis for understanding how individuals use their specialist knowledge areas within professional practice (Arrendondo & Rucinski, 1996). It is here the direct link between epistemology and coaching practice in cricket is relevant and although coaches may rarely consciously consider their epistemological beliefs, coaching practice is suggested to be a direct output of coaches' beliefs about learning (Light, 2008). In beginning the thesis, the following section outlines for readers the context of the thesis, whilst exploring its key terms.

1.1 THE RESEARCH CONTEXT AND DEFINING THE KEY TERMS

1.1.1 Cricket in the UK

The current structure of cricket in the UK involves 18 professional county teams spread throughout the country (e.g. Lancashire, Gloucestershire, Nottinghamshire). These teams are referred to as First Class Counties' (FCC) and include both senior teams (e.g., 1st XI, 2nd XI) and junior representative teams. A stereotypical player pathway will consist of under-11, under-13, under-15 and under-17 teams, with the final step in the pathway being an 'Emerging Players' and/or 'Academy' team made up of specifically selected players before a potential transition into the senior ranks. The peak of the playing pyramid post-FCC is international honours when representing England.

Underpinning the professional FCC game is a network of Minor Counties (MC) (e.g. Cheshire, Wiltshire, Lincolnshire) which at senior level, is recognised as semi-professional. It is often the case that players on the fringes of a FCC will play for a MC in order to 'get game time'. Prior to these professional or semi-professional steps, players will be involved in the recreational stages of the game, most commonly being found within schools and local cricket clubs.

As with many sports, there is a range of competition levels available within local cricket clubs, with senior competition ladders existing throughout the country. Again, at the recreational level, it is the norm for cricket clubs to compete in competitions within their county, as opposed to travelling nationally. It is also the norm for recreational cricket clubs to have junior representative teams which map a similar pathway to that of a FCC ensuring the sustainability and long-term future of local cricket clubs. Whilst understanding the structure of cricket in the UK is important, the focus of the thesis is very much focused on the (coaching) action on the pitch. As a result, it is important to outline the particular nuances of the sport for readers.

There are three different formats of cricket being played at the professional level. Red ball cricket, is literally played with a red cricket ball and its defining characteristic is that it lasts over multiple days; 4 days at FCC level, and 5 days at the international level. White ball cricket, played with a white cricket ball, is scheduled for one day. Importantly to note, there are currently two formats of white ball cricket; 20-over cricket (consisting of up to 120 deliveries per side and lasting around 3 hours per game) and 50-over cricket (consisting of up to 300 deliveries per side and lasting around 7 hours per game). It is important to outline here that at the recreational level, two lengths of game are commonplace: 50-overs and 20-overs. Ironically however, 50-over recreational cricket is played using a red ball!

1.1.2 Coaching and Coach Education

In adding clarity for readers about what coaching actually is, there have been a number of ideas proposed. From a professional body perspective, the European Sports Coaching Framework (ESCF) supports a definition of sports coaching which is: "the guided improvement, led by a coach, of sports participants in a single sport and at identifiable stages of development" (ECC, 2007, p. 5). Perhaps increasing the focus on the coach, Côté and Gilbert (2009, p. 204) put forward a definition of effective coaching, outlining that it was; "the consistent application of integrated professional, interpersonal, and intrapersonal knowledge to improve athletes' competence, confidence, connection and character in specific coaching contexts".

Other authors have positioned sports coaching as a "co-operative, socially contested endeavour containing elements of initiation, reaction and exchange within temporal boundaries" (R. L. Jones, Edwards, & Viotto Filho, 2016, p. 204). What is absent from this definition however is the consideration of the goal-focused nature of sports coaching identified within the earlier ESCF definition. This explicit identification is important given that sports coaching *should* also be considered as a cognitive, decision making process (Abraham, Muir, & Morgan, 2010). Incorporating all aspects here, sports coaching practice is a deliberate attempt to improve sporting performance (and associated personal benefits of those involved) based on pre-planned short, medium and long-term goals (i.e. coaching as a cognitive process). Given that coaching can be unpredictable as a consequence of its co-operative and socially contested roots (i.e. coaching as a social process; R. L. Jones et al., 2016) coaches once again become involved in making micro-level and 'in-action' decisions (i.e. coaching as a cognitive process) about the events which are unfolding before them! As Abraham and Collins (2011a, p. 14) outline,

> Practically, the coaching process can be viewed as a series of decisions, initiated by and then finally checked against a goal, which generate the best fit option

> plan for that particular setting. This process is repeated ad infinitum, as aspects of the situation change.

What is perhaps troubling then given the complexity of the sports coaching process and dynamic nature of sports coaching environments that coaches have to 'deal' with, are current approaches to coach education. As Lyle and Cushion (2016) suggest, although coach education is a commonly used term in relation to the idea of coaches becoming *better*, the term 'coach training' is perhaps a better fit. This is due to the tendency of coach development programmes to focus on the development of procedural knowledge and associated key competencies. In linking with the previous research presented earlier, coaches are less *developing* their own professional, interpersonal and intrapersonal knowledge (i.e., Côté & Gilbert, 2009) as opposed to being *given standardised knowledge* to use.

Given the individualised nature of coaching contexts, the education of coaches should reflect the idea that coaches become increasingly prepared to utilise a diverse range of information in order to create solutions to the unique problems that they face (Stodter & Cushion, 2014). Simply put, "the same coach education opportunity will have different impacts on the individual coaches that experience it" (Lyle & Cushion, 2016, p. 299). As things currently stand, many approaches are in-fact devoid of any educational benefits, i.e. they do not contribute to the development of *knowledge* and/or *understanding* referred to earlier. As a result, many approaches appear to be focused more on coach 'training', i.e. developing key competencies required in order to do the job. As Lyle and Cushion (2016) refer to, coaches are all too often exposed to curriculum in an attempt to develop standardised knowledge and a range of pre-determined strategies to overcome 'typical' issues within their coaching context. This seems troubling given the significantly contextualised and intertwined cognitive and social aspects of the sports coaching process identified in the existing literature.

1.1.3 The developing athletes' context

It is important to present an overview of the context that this thesis is focused on. A range of authors have made proposals in relation to different coaching contexts. Côté, Young, Duffy, and North (2007) proposed four specific contexts, centring around 'participation' and 'performance'. These were; i) participation coaching for children ii) participation coaching for teens and adults iii) performance coaching for young adolescents iv) performance coaches for late adolescents and adults. Referring to earlier work regarding the structure of cricket in the UK [see 1.1.1, chapter 1], the context of the thesis involves coaches and players in the 'emerging players' and/or 'academy' stages of the player pathway. Most often, players involved in these programmes are aged 14 years and upwards (however there are no strict guidelines on this) which offers some challenges in relation to whether these adolescents are classed as 'young' or 'late' adolescents by these authors. Mostly notably, the challenges here are in relation to the descriptive characteristics and expectations of the environments. Work that followed identified coaching contexts based on participants motivation for taking part in sport and physical activity. D. Collins et al. (2012) 'three worlds' continuum proposed three distinct contexts; i) Participation for Personal Wellbeing (PPW) ii) Personal Referenced Excellence (PRE) iii) Elite Referenced Excellence (ERE). Whilst motivations for PPW can be easily understood, in clarifying for readers, PRE is described as excellence in the form of improving one's own performance, (i.e. task goal orientations (Nicholls, 1984). On the other hand, ERE is where "achievement is measured against others with the ultimate goal of winning at the highest level possible" (D. Collins & Bailey, 2015, p. 137). The context in this study is certainly not PPW and is not ERE. There are some aspects of PRE, i.e., the idea that players should be focused on their own progress as opposed to creating comparisons to others however this does not encapsulate *all* of what goes on at this stage of the pathway. Most recently, Lyle and Cushion (2016) somewhat

simplified the work of Côté et al. (2007), devising key criteria in which coaching contexts were classed as either ‘development’ or ‘performance’ contexts. Examples of differentiating factors between these two contexts include the intensity, level of contact between coach and performer and the types of objectives set.

What seems clear is that there is general acceptance within the literature that coaches operate with different people, for different reasons. When attempting to summarise what this actually means for cricket coaches working with developing athletes, a coach-participant in the work of Nash, Sproule, and Horton (2008, p. 546) gives a succinct overview:

> The role of the coach changes with the context really, but if I was to talk about coaching generally, I would say it's about the facilitation of the development of the athlete. I would put it into the context of long-term development; they're there to prolong the development of the athlete over many years

The coaching context in the current thesis will, perhaps unsurprisingly be defined as a result of incorporating a number of aspects from the work previously presented. To some extent, it is clear that the context of the thesis is performance coaching for adolescents (i.e. 14 years+) however the descriptive characteristics that Côté et al. (2007) propose are somewhat misaligned to modern day coaching approaches within this type of environment. As a result, the characteristics outlined by Lyle and Cushion (2016), such as having a stable performance group, having an increased control in variables, long-term objectives and extensive intervention and interpersonal contact over a long period of time, are more readily aligned to the coaching context explored in this thesis. Importantly too is the recognition that the ultimate goal of the coaching context is to produce professional cricketers. As a result, the term ‘developing athletes’ is used throughout the thesis in an attempt to cater for the developmental nature (i.e., improvement, self-development, longer-term focus) of the contexts, whilst the term *athlete* (as opposed to participant) is an attempt to reflect an increase in the holistic

nature of the context, and general increase in intensity towards becoming a professional in the sport.

1.1.4 The structure of cricket coaching in the UK

As with the previous sections of this chapter, it is hoped that readers will become clearer with a number of the underpinning aspects of the thesis. In doing so, it is important to address the structure of cricket coaching in the UK at the time of the thesis' writing. The main aim of this brief section is to enable readers to understand the formal qualification pathway for cricket coaches in the UK and how this links with the context of the thesis and the background of many of the coach-participants involved.

Historically in many sports across the UK, the coaches' pathway has been made up of *levels*. The assumption attached to this structure being, the higher the level, the better the coach. There has been a range of debate for some time as to the appropriateness of this structure. The stereotypical approach remains that the highest-level coaches should work with the highest level of players. Currently however there is debate as to whether coaches can become, and should be acknowledged as context specific experts (North, 2009) (e.g. an expert adult participation coach; an expert performance development coach with teenagers etc.)

Most recently, the England and Wales Cricket Board (ECB) have restructured the coaching pathway in an attempt to reflect opportunities for coaches to develop expertise within a particular setting. Pragmatically, this re-structure may also been seen as a step to increase the coaching workforce. Outlined below in Table 1.1, is the current structure of ECB coach development plotted against the previous 'level' based framework. In highlighting the key points for readers, the updated approach creates opportunities for coaches to become specialists within their contexts (as referred to above).

Table 1.1. *An overview of ECB coaching qualifications (pre-2019 and 2019 onwards)*

New ECB coach development framework (2019 onwards)	**Pre-2019 'level' based framework**	**Key Details**
Coach support worker	n/a	New format, example targeted groups are parents, siblings etc. Course completed in one day with the aim of coach support workers able to run 'organised, safe, fun' activities.
Foundation I coach	Level 1	Previously, level one qualified coaches were able to 'assist' coaching in sessions. In the new structure, they are qualified to lead
Certificate in coaching children's cricket **OR** Certificate in coaching young people and adult's cricket	Level 2	In the new structure, coaches choose *either* of the new courses in an attempt to enable developing coaches to begin to develop specialist knowledge of coaching within a context
Advanced coach	Level 3	This stage become increasingly holistic (i.e. technical, tactical, physical, psychological), involves an application for the course and requires significant commitment from coaches to undertake (i.e. months rather than weeks)
Specialist coach	Level 4	Integrated pathway option for coaches to select based on motivations (i.e. 'Management' or 'Development' which result in a small number of specialist modules. Course takes c. 2 ½ years to complete

In continuing to identify the key points, it is worth considering the type of 'consumer' the coaching qualifications are aimed at. It is commonplace for those (only) completing the early stages of coach development (i.e. they then 'stop' their qualification journey) tending to be those coaches who operate within their local cricket club, often on a voluntary basis. As a result, the new coaching pathway caters for coaches who are working with a particular type of participant. For example, a coach may be more interested in working with 'the juniors' (i.e. under-9's) as opposed to 'the colts' (i.e. under-17's). As a result, coaches can engage in coach learning and qualification around their chosen group. This is in contrast to the previous structure where all coaches received a 'standardised' qualification, which from a pragmatic (and legal!) view, enabled them to be qualified to 'lead' coaching sessions across many different groups.

In acknowledging an alternate view of the consumers of cricket coaching qualifications, those who become qualified with a 'certificate in coaching cricket' may well be employed to deliver a portfolio of sports within the wider context (e.g. a multi-sports coach delivering community and/or local school provision etc.) and the course enables them to have the appropriate level of (cricket) skills and knowledge to be able to deliver in these contexts.

When considering the final steps of the qualification pathway, generally, those completing the 'Advanced' (i.e. Level 3) and 'Specialist' (i.e. Level 4) courses have specialised in Cricket and are often employed full-time within the sport. As examples, county and regional cricket organisation coaching staff are likely within their careers to become qualified to 'Advanced' level, working and leading on representative cricket programmes (including talent identification etc.). Whilst at this point, it would be the norm for coaches to be working with players in both red and white ball contexts, the new pathway attempts to cater for those coaches who are working outside of representative cricket programmes to develop and apply 'advanced' coaching skills within their coaching context (i.e. their local cricket club). An example here may be the ability to track and monitor player progress, a skill relevant in both participation and performance development contexts. Finally, at 'Specialist' level (i.e. Level 4) it is highly likely that these coaches will be working within professional cricket (i.e. international or county level) or the pre-cursor steps to the professional game such as the 'academy' level. This qualification remains somewhat exclusive. At the time of writing, including myself, there are only around 250 'Specialist' (i.e. ECB Level 4 qualified) cricket coaches in the world.

1.2 SETTING THE SCENE: CRICKET IN THE MODERN ERA – OUT WITH THE OLD, IN WITH THE NEW?

For the experienced cricket follower, history is littered with international teams which have been hailed as great sides, perhaps the best ever. From the 1970's to the 90's it was

the West Indies, with Australia taking over the reins as the undisputed best for much of the 90's and early 2000's. Unfortunately, England were mostly on the receiving end of these great teams. In the last 15 years however, England has had its time. In 2011, after beating Australia in an overseas Ashes tour for the first time in 24 years, England were ranked as the number one, test match team according to the International Cricket Council (ICC). Aside from allowing some level of cricket nostalgia(!), the rationale for this introduction is to highlight that these teams, *the great teams*, have often been identified as great due to their performances in *red ball* cricket. This reflects a largely anecdotal (but also widely and well accepted) position by players, coaches and administrators, that the red ball, multi day format of the game is the ultimate challenge, for the ultimate player.

Over the last two decades however there has been an increasing shift of attention toward the white ball format of the game. Whilst the white ball format, including teams appearing in coloured clothing, has existed for some time, in years gone by the white ball format was simply played as a shorter version of the red ball, multi-day game. There were in-fact very few strategic differences between the two formats of cricket (i.e. multi-day, red ball cricket and 50-over, white ball cricket), culminating in a somewhat mundane experience for spectators and players alike.

Alterations were made to the rules in an attempt to increase its popularity however in 2003, the ECB introduced a new, shorter format competition, known as 'Twenty20'. This 20-over a side game ultimately became the 'third' format of cricket played in the UK. Since its eyebrow raising and somewhat sceptically accepted inception, the 20-over format of the game has progressed worldwide and has excelled on a global scale. There are now professional 20-over leagues taking place in India, Australia, Pakistan, South Africa, New Zealand, The Caribbean, Bangladesh, Afghanistan and Canada, with more leagues and locations on the horizon. The game of

20-over cricket in the modern era, is perhaps as much about the production of the event (e.g. fireworks, music, jaccuzis for spectators and players wearing on-field microphones) as it is about the proceedings on the pitch. In continuing to acknowledge the wider benefits of 20-over cricket, given its increasingly accessible nature and 'action packed' style, it is attractive to broadcasters and sponsors, ultimately placing it as a significant financial contributor to the sport as a whole.

In stark contrast to the red ball game, spectators are now well versed in experiencing high octane matches which are completed within hours as opposed to days. Batters are hitting the ball out of stadiums. Bowlers are expected to have the trickery in order to stop them. Finally, fielders are expected to have the athleticism and nouse to be able to save runs and take catches that were in the past, unthought of. The style of the game has developed to such an extent that these expectations are now the norm, rather than the exception. With the significant increase in global demand for this format of cricket, professional players are now able to make a living (and a handsomely good one at that!) playing only white ball cricket. Historically, the more lucrative playing contracts would be reserved for those who were successful in the red ball format.

Given that these games vary hugely in their techniques and tactics, with new, non-traditional approaches to the game becoming common, coaches are being challenged to help players approach, and be successful in all three formats. As a direct result, it is becoming widely accepted and expected that cricket teams employ specialist coaches on a short-term basis, to aid their success in these shorter formats. Examples of such roles include; power-hitting coaches, specialist fielding coaches and leadership mentors. Opportunities are also created for players to develop specialist roles within their teams. An example here is a bowler who exclusively picked to bowl the latter overs of a game. Clearly then, there is an increasing demand on coaches to balance the

focus of their attention across all three formats and the complexities which are associated with each.

Whilst this section has attempted to give a backdrop to the cricketing landscape, I hope it has also attempted to introduce some of the challenges facing cricket coaches, both at the very highest levels and of those underneath. These challenges for coaches were exemplified in the summer of 2019, which saw two of the most lauded events in cricket take place within just weeks of each other. Firstly, there was a white ball, 50-over World Cup. Here, winning eight, single day matches would lead England to being crowed World Champions. The second event, an England vs. Australia Ashes series, consisted of 25 days of cricket where the outcome could be to win, lose or draw.

The challenge for coaches working with developing athletes then is clear. With three formats of the game to learn, how do coaches help players to learn and be prepared for the challenges presented within the professional game? From a macro-level, how do the coach and player interact with the socio-political structures, traditions and expectations of the environment in order to best facilitate this learning with developing players across formats? On a more micro-level, how do coaches utilise their knowledge in order to create coaching practices which both engage and challenge the players to develop the relevant red ball and white ball skills? These are some of the pertinent questions the thesis will address along the way.

1.3 AIMS AND OBJECTIVES

The aim of the thesis is to explore the epistemological basis of red ball and white ball cricket and further understand the what, how and why of coaches' approaches when working with developing athletes. In order to achieve this aim, the research objectives (RO) of this thesis are:

1. To critically examine the literature in relation to epistemology and its application to cricket coaching

2. To investigate and critically evaluate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision in relation to red and white ball cricket.
3. To critically examine the epistemological beliefs of coaches involved in coaching red and white ball cricket
4. To critically evaluate the epistemological beliefs of players involved in red and white ball cricket
5. To design and develop a framework that presents an epistemological basis of both red and white ball cricket
6. To present and critically review the framework(s) with cricket coaches working with developing athletes

1.4 STRUCTURE OF THE THESIS

Following this chapters' introduction and overview of the key terms, the thesis continues to Chapter 2. The relevant literature is reviewed, and links are made between epistemology and a number of underpinning and inter-connected theoretical concepts. Connections are made between how epistemology influences decision making and the extent to which this connection forms an Epistemological Chain (EC) in an attempt to fully address the first objective of the thesis.

Chapter 3 overviews for readers the philosophical positioning of the thesis and the resulting methodological considerations. Key aspects of the approach to the thesis are discussed, including approaches to data collection, the use of reflexive thematic analysis and maintaining trustworthiness.

Chapter 4 presents a study which explores the behaviours and rationale of cricket coaches training practices and coaching styles. The investigation takes place with coaches working with their players in both red and white ball cricket (RO2). What this study allowed was a greater insight into the coaches' context and micro level

coaching practice. This provided a solid basis for investigating the epistemological beliefs of coaches in both red and white ball cricket (RO3). The closing stages of Chapter 4 presents a first attempt at outlining two distinct 'learning chains' in the different formats of the game (i.e., RO5).

Chapter 5 adds further detail and support for the findings of Chapter 4. As a result of increasing the number of participants within this stage of the thesis, the chapter increases the clarity and trustworthiness of the findings in relation to the third objective. The chapter culminates in the confirmation and extension of previous findings. Newly created models of the coaching and epistemological process are presented in an attempt to offer readers a joined-up view and continue to address RO5.

Progressing from the exploration of the coaches' perspective, Chapter 6 attempts to explore the epistemological view of developing cricket players (RO4). A sample of 'developing athletes' were recruited and were involved in individual, semi-structured interviews. In concluding the chapter, players' and coaches' epistemological views are presented side by side in order to more simply identify similarities and differences in beliefs about learning.

Chapter 7 is the final empirical study of the thesis and utilises an innovative five-step Action Research (AR) methodology in order to present and critically review the framework(s) with cricket coaches working with developing athletes (i.e. RO6). Given this was the final exploratory phase of the thesis, the AR method was vital in an attempt to 'make a difference' and help coaches to develop their practice, an important aspect of AR research (McMahon, 1999; L. Smith, 2010). As opposed to traditional participatory action research, the chapter took a 'case study approach' to AR and integrated a number of key recommendations on best practice in coach development (e.g., Abraham et al., 2010). The chapter concludes with a final presentation of the epistemological basis of both red and white ball cricket (i.e. RO5).

Chapters 8 draws the thesis to a close by way of offering an overview of the completed work and a summary of the key findings. Implications of the findings are identified, and the chapter and thesis conclude by outlining recommendations specifically for those involved in cricket, with suggestions made about the direction of future research.

CHAPTER 2: WHAT YOU THINK – WHAT YOU DO – WHAT YOU GET? EXPLORING CRICKET COACHES' EPISTEMOLOGY AND ITS IMPACT ON PROFESSIONAL PRACTICE

The aim of the current chapter is to critically examine the literature in relation to epistemology and its application to cricket coaching (RO1). The chapter will begin by offering a definition of epistemology and continue on to fully overview the concept for readers. In doing so, the chapter will discuss the developmental journey of individuals' beliefs about learning and consider the historical work of Perry (1968, 1970, 1981) and Kitchener and King (1981). Further work by Schommer (1994) and Schommer and Walker (1995) is integrated here and the key dimensions of epistemology outlined for readers. The chapter continues to make connections to the interwoven area of Decision-making and make clear the implications and practical outcomes for coaches through the introduction of the Epistemological Chain (EC). The work is brought to life and applied by the use of a cricket specific exemplar.

Prior to completing the chapter, links are made to the well-established area of theories of learning. In doing so, the focus increases yet again on making sense of interconnected concepts that directly impact on the practical approaches to learning that are used and are a focus of the thesis. The chapter concludes by outlining the challenges that lay ahead.

2.1 AN INTRODUCTION TO EPISTEMOLOGY – WHAT IS IT AND WHY DOES IT MATTER?

2.1.1 A definition of epistemology

There has been some debate within the literature regarding a definition of *personal epistemology* (referred to throughout the thesis as epistemology). Authors have proposed both deeply philosophical and more practical definitions of the concept. The role of this section is to make clear the definition of epistemology used throughout the remainder of the work.

There is some contention as to whether the definition of epistemology should integrate views only about knowledge, or whether the definition should also include beliefs about learning. Hofer and Pintrich (1997) defined epistemology as only concerning views about knowledge whilst others conducted epistemological research based on definitions which were inclusive of participants' views both about the nature of knowledge and the nature of learning (e.g., Elby, 2001; Schommer-Aikins, 2004; Schommer, 1994)

As the current thesis is focused on how coaches' epistemological beliefs influence the approaches to helping players under their supervision *learn*, the thesis uses a definition which is inclusive of both beliefs about knowledge *and* beliefs about learning. After all, as Elby (2009, p. 3) proposed:

> From some theoretical perspectives, however, empirical results may support the interpretation that views about knowledge are inseparably entangled with views about learning. In that case, excluding views about learning from personal epistemology obscures rather than elucidates the content and cognitive structure of students' views

Consequently, for the purpose of the thesis, epistemology is viewed as a system of more-or-less independent beliefs, hypothesized as five distinct dimensions that may or may not develop in synchrony (Schommer, 1994). More specifically, readers are referred to the continued definition of epistemology below, from Schommer-Aikins (2002, p. 78) which will form the crux of the thesis' work moving forwards:

1. Personal epistemology may be conceptualised as a system of beliefs. That is, personal epistemology consists of more than one belief.

2. Beliefs within the system are more-or-less independent, that is, it cannot be assumed that beliefs will be maturing in synchrony.

3. Epistemological beliefs are better characterized as frequency distributions rather than dichotomies or continuums. For example, it is likely that a mature learner believes that a small percentage of knowledge is unchanging, and a substantial percentage of knowledge is evolving.

As a result of making clear the definition of epistemology used in the thesis, the following section explores in brief, how we got to this point.

2.1.2 The development of the epistemological literature

Early work around epistemological beliefs by Perry (1968) plotted epistemological development on a continuum with two extreme ends – naïve and sophisticated. A person who holds a naïve epistemology generally believes that knowledge is simple, clear, and specific and that knowledge is handed down from authority rather than developed from reason. A naïve epistemology is also based on the premise that knowledge is certain and unchanging. Finally, a naïve epistemological stance is based on the premise that concepts are learned quickly or not at all, and that your ability to learn something is innate and fixed rather than acquired and developed (Grecic & Collins, 2013). In comparison, a person who holds a sophisticated epistemology believes that knowledge is complex, uncertain, and tentative; that knowledge can be learned gradually through reasoning processes and can be self-constructed by the learner (Howard, McGee, Schwartz, & Purcell, 2000). Table 2.1 (on the following page) outlines an individuals' beliefs about knowledge according to the positions set out by Perry (1968). It is worth noting here the deliberate use of the term *positions*. The work suggests that people can change positions at will, moving back and forth from position to position, whilst also being able to hold differing positions in differing contexts.

Research by Perry continued (i.e. 1970; 1981) and was based upon students' conceptions of learning and knowledge within higher education. The work explored university students' views of how knowledge is gained and developed across their university careers. Perry (1970) identified four key stages as to how students viewed learning and knowledge; i) Dualism – knowledge is either right or wrong. It is black or white. ii) Multiplicity – there are a number of ways of looking at the same situation. iii) Relativism – there are a number of possible conclusions to the same situation based on using objective evidence. iv) Committed Relativism – a personal stance is formed in given situations with an acceptance that all knowledge and ideas are ultimately relative.

Table 2.1 *Perry's (1968) positions on individuals' beliefs about knowledge moving from a Naïve to Sophisticated epistemological stance*

Epistemological Positioning	Position number	Definition
Naïve epistemology	1	Acknowledges absolute knowledge handed down by authority
↓	2	Acknowledges differences of opinion that are the result of poorly qualified authority
	3	Acknowledges uncertainty as temporary
	4	Acknowledges relativistic knowledge as the exception to the rule
	5	Acknowledges absolute knowledge as the exception to the rule
	6	Apprehends the need for personal commitment in a relativistic world
	7	Initial commitment is made
	8	Exploring commitment
Sophisticated epistemology	9	Acknowledges commitments as an ongoing, complex, and evolving process

Importantly, these beliefs about *knowledge* impacted heavily on how students viewed the learning process. Specifically, to what extent is learning the rote memorisation of facts, compared to individuals finding personal meaning in the content being learned?

To summarise, Perry's work suggests that as students enter the world of higher education, they assume knowledge is simple and can be passed down. As an example, consider this student-participant response; "when I went to my first lecture, what the man said was just like God's word, you know. I believed everything he said because he was a professor, and he's a Harvard professor, and this was a respected position" (Perry, 1968, p. 18). As educational life continues however, it is assumed that students'

epistemological views are challenged as they are faced with more dynamic and complex material within their classes. As a follow up example:

> There was one thing I expected – I expected that when I got to Harvard…I came up here expecting Harvard would teach me one universal truth…took me quite a while to figure out…that if I was going for a universal truth or something to believe in, it had to come from within me
>
> (Perry, 1968, p. 38)

Acknowledging the context of this research is important, given the similarity (although not *like for like*) between its context and the context of the thesis. What is unknown is the extent to which developing athletes within cricket hold the same positions as their peers from Perry's research. The extent to which developing athletes within cricket also embark on this developmental journey (i.e., moving from a dualistic to committed relative approach) is also unknown.

Connections *are* able to be made however in relation to (cricket) coaches. In re-visiting Perry's four stages, an example of the dualistic stage can be found in the work of Schempp, McCullick, and Mason (2009, p. 149) focused on the development of expert coaches. These authors suggest that novice coaches "try to detect the commonplace through objective facts". These black and white answers (i.e., the facts) link to the dualistic stage in that knowledge is viewed as absolute (Perry, 1970). Continuing this connection to coaching, Schempp et al. (2009) continued to suggest that when compared to novice (i.e., dualistic) coaches, more expert (i.e. relativistic) coaches are more readily able to solve problems as a result of evaluating and justifying approaches to the problem.

In progressing from Perry's work, Kitchener and King (1981) developed the 'Reflective Judgement Model' (see Table 2.2). The main extension of the Reflective Judgement Model is the appreciation shown by Kitchener and King (1981) for the individual as part of the existence of knowledge and incorporation of the individuals' time and space (i.e. *their* reality). This can be explicitly observed in the terminology

used by Kitchener and King. For example, ‘stage 6’ and their use of *the knower*. A second extension comes in the way of an increased focus by Kitchener and King on how people deal with ill-structured problems (Schommer, 1994)

Table 2.2 *The reflective judgement model (Kitchener & King, 1981)*

Views of Knowledge	Stages towards reflective judgements	Definition
Increasingly complex assumptions about knowledge 	1	Absolute knowledge is handed down by authority
	2	Absolute knowledge exists but is not immediately known
	3	Some knowledge is temporarily uncertain
	4	All knowledge is uncertain. Hence, there is no way to determine which claim is correct or better
	5	Knowledge is subjective. Claims are made through subjective interpretation.
	6	Objective knowledge is not possible. The knower plays an active role in constructing claims
	7	Knowledge is an ongoing process of inquiry and must be perceived as approximations of reality

In linking directly with the focus of the thesis, coaching has previously been identified as a complex process [see 1.1.2, chapter 1]. It is in generating “a best fit option plan for that particular setting” (Abraham & Collins, 2011a, p. 14) that the application of the work of both Kitchener and King, and Perry becomes clear.

In bringing this work to life, a practical example of the latter, increasingly subjective phases of both Perry’s (1968) and Kitchener and King’s (1981) work on individuals’ beliefs about knowledge can be found in the work of Abraham, Collins, and Martindale (2006, p. 558). In their work which explored expert coaches’ views on the

coaching process, the following quote from a coach-participant succinctly demonstrates a coach who has progressed to the stage of (committed) relativism:

> All the other -ologies and -isms and all the rest of it, well my personal view is that you need to have as broad a background as you can and have a broad range of knowledge. It's very rare that you push a button that says psychology or you push a button that says physiology or technical. Everything that you do has an implication psychologically or physiologically or whatever and you need to know how things work, the ''what ifs'', so if you press that button what happens to that, what happens to that?

In progressing, the current section has outlined the existing literature in relation to epistemology and presented readers with an overview of both the historical work alongside more recent applications to the sports coaching process. Whilst a number of key terms have been used to refer to a person's (in this case a coach's) epistemology, such as 'naïve' *or* 'sophisticated', the following section explores how these polarised characteristics are actually applied.

2.1.3 Epistemology is not black or white

The previous section introduced readers to epistemology and referred to two polarised positions: naïve and sophisticated. It has however become increasingly acknowledged that epistemological beliefs are not represented by an either-or approach. This can be seen in the proposed definition by Schommer-Aikins (2002) at the outset of the chapter. It is also well established within the existing literature that people may hold distributed beliefs within a specific dimension of epistemology (Brownlee, Purdie, & Boulton-Lewis, 2001; Schommer, 1993). An overview of the most recent dimensions of epistemology (Schommer, 1994; Schommer & Walker, 1995) along with definitions of the extreme poles, can be found below in Figure 2.1.

1. Omniscient Authority (beliefs about the validity of the source of knowledge)

Knowledge is handed down by authority vs. Knowledge is created by the learner

2. Certain Knowledge (beliefs about the reliability of knowledge)

'Knowledge is certain vs. Knowledge is ever changing'

3. Simple Knowledge (beliefs about the structure of knowledge)

Knowledge is simple (isolated, discrete facts) vs. Knowledge is complex (entangled, synoptic)

4. Quick Learning (beliefs about the speed of learning)

Learning happens quickly vs. not at all

5. Innate Ability (beliefs about capacity for learning)

Learning ability is developable vs. Learning ability is something you're born with

Figure 2.1 An overview of the dimensions of epistemology

In referring back to the distribution of beliefs, this would mean someone who held sophisticated epistemological views in relation to the dimension of 'certain knowledge', believes that a vast amount of knowledge is evolving, some knowledge is yet to be discovered and that a very small amount of knowledge is unchanging. Similarly, someone who held naïve epistemological views in relation to the dimension of the source and validity of knowledge (i.e. Omniscient Authority) believes that a vast amount of knowledge is passed down from authority figures, and that some knowledge can be developed by the learner.

Previous work has also considered the extent that epistemological beliefs remain constant or differ, across different domains. There remains some debate in this area. The work of Schommer and Walker (1995) suggested that the beliefs of students in education were similar across academic domains. To contrast, the work of Mori (1999) lead to suggestions that epistemological views were in fact context specific. This followed up on work by Beers (1988) and Roth and Roychoudhury (1994) who also proposed epistemological beliefs to be context specific. In applying the concepts of

distributed, and domain-specific beliefs to cricket coaching, the interest in coaches' approaches with developing players, in different formats of the game (i.e., red and white ball cricket) becomes increasingly apparent.

Whilst this section has provided readers with an overview of the historical work and development of the epistemology literature, the chapter now continues to explore the concept of the Epistemological Chain (EC). This is an important area to address, given it is the EC which leads to the tangible coaching behaviours and approaches that are used in practice, with developing athletes.

2.1.4 Epistemology in practice – The Epistemological Chain

Whilst epistemology is an individuals' stance on learning and knowledge, the EC is effectively the link between an individuals' philosophy, beliefs about learning and knowledge, and the resulting behaviour (Grecic & Collins, 2013). From a coaching perspective, where an EC is present, a coaches' epistemology will directly influence the coaching 'outputs' used with players. Put more formally, the EC has been described as:

> the inter-related/connected decisions made that are derived from high-level personal beliefs about knowledge and learning, and which become apparent through the planning processes adopted, the learning environment created, the operational actions taken and the review and assessment of performance.
>
> (Grecic & Collins, 2013, p. 153)

In exploring the EC in education, numerous studies confirm a strong connection (i.e., chain) across teachers' beliefs, their classroom behaviours, and the learning environment they create (e.g., Hofer, 2002; Hofer & Pintrich, 1997; Nespor, 1987; Soleimani, 2020; Tarmo, 2016). These studies illustrate the link between Epistemological beliefs and behaviour. These studies also reinforce the above definition of the EC, as proposed by Grecic and Collins (2013). There are also similar findings in recent sport specific studies that have taken place within golf (Grecic & Collins, 2012) and adventure sports coaching (L. Collins et al., 2015) where coaches have used the EC to aid their planning, decision making and critical reflection.

In discussing coaches planning, decision making and critical reflections in more detail, areas of consideration for coaches include; i) the athlete (i.e. who the coach is working with) ii) the task(s) (i.e. what the coach is coaching) iii) the environment (i.e. how the coach is coaching). As the primary purpose of coaching is about athlete learning and performance improvement (R. L. Jones et al., 2016), coaches are required to consider unique and complex blends of decisions of these factors that best suit the needs (i.e. goals) of the athlete(s) in question (Muir, Morgan, Abraham, & Morley, 2011).

In showcasing examples of these considerations and offering more detail on the areas identified above, considerations regarding the athlete(s) (i.e. who the coach is working with) may range from factors such as their previous sporting experiences, current developmental status and other social/lifestyle influences (e.g., J. Baker & Horton, 2004). Task considerations (i.e. what the coach is coaching) in this instance would be components such as the level of technical complexity, the time allocated and the level of representativeness involved (Pinder, Davids, Renshaw, & Araújo, 2011; Pinder, Renshaw, & Davids, 2009). Finally, environmental considerations (i.e. how the coach is coaching) that the coach has to take into account range from the type of motivational climate that is created (e.g., Nicholls, 1984), the level of urgency required in relation to improvement/development actually taking place (for example in relation to a competitive fixture that may be just days away) and level of commitment that is required from those involved, such as coaches, athletes, parents etc. (e.g., Côté & Hay, 2001). These are important considerations given that a coaches' epistemology impacts directly on coaches' approaches to these aspects. Highlighting an example here, a coach who holds increasingly naïve views, specifically with a belief that learning happens quickly or not at all, may consider the adolescent athlete they are working with (i.e. the who) to be *too old* in relation to their current (skill) development status and therefore

increasingly unlikely to ‘make it’ (i.e., they have not learned quickly enough to be successful). As a result, there is a direct influence on coaches’ actions, approaches and behaviours with their developing athletes. This influence is made apparent in Figure 2.2 (below).

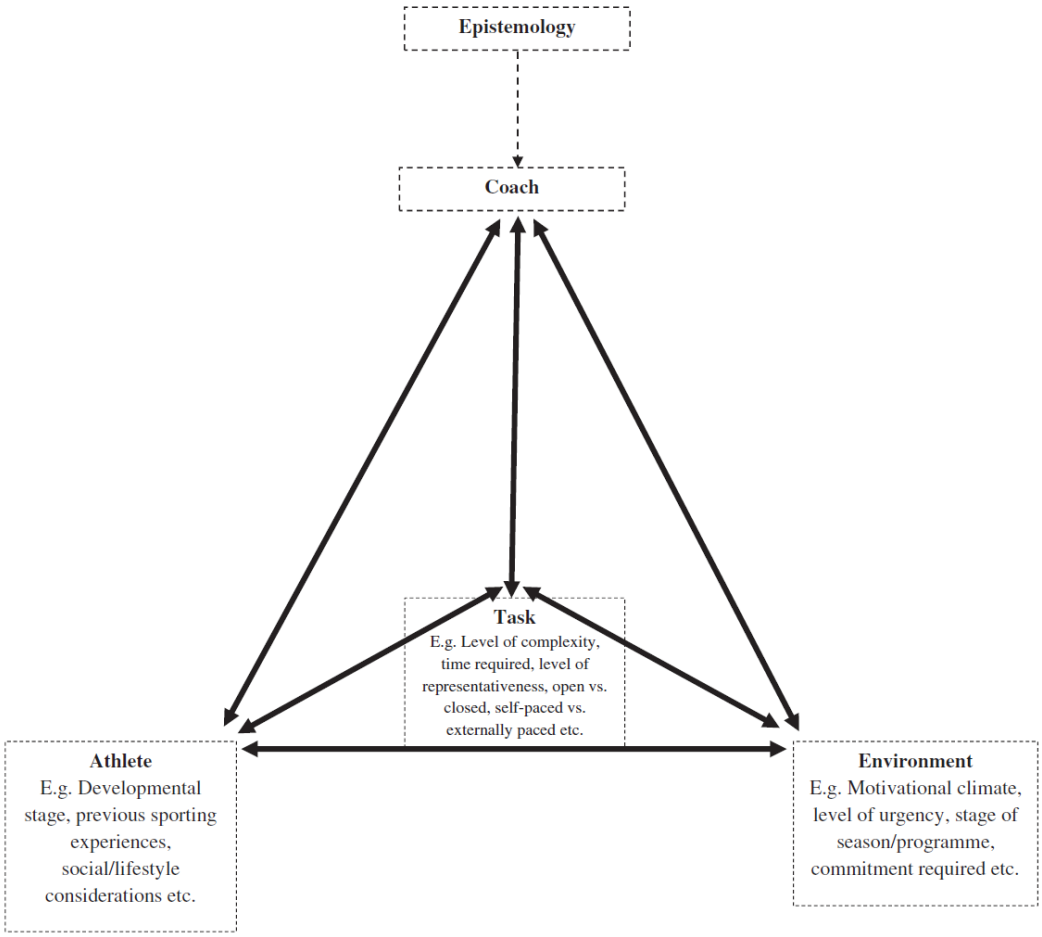


Figure 2.2 Factors influencing coach Decision making (Crowther et al., 2018, p. 69)

These considerations (i.e., who, what and how) have become well established within the sports coaching literature and has most recently been extended to coaches working within specialist areas (e.g., strength and consitioning; Till, Muir, Abraham, Piggott, & Tee, 2019). These authors also explicitly identify that decisions are also influenced by the socio-cultural-political norms and expectations of the wider environment. Examples of common socio-cultural-political considerations are the sports NGB, long standing

traditions and pressures from a range of key stakeholders (Till et al., 2019). It is important to highlight here that these considerations can further complicate the coaching process as a result of epistemological misalignment between the coach and the organisation. A common example (although perhaps somewhat anecdotal) of epistemological misalignment can be found when a coach taking a new role, in a new environment, is challenged with *"this is how we do things here"* from the existing coaching team. As a limiting factor, Figure 2.2 does not explicitly acknowledge the wider socio-cultural-political context the coach is working in. Nevertheless, the ways in which epistemological beliefs impact on coaches approaches to meeting their stated objectives at macro, meso and micro levels is of significant interest.

The current section has introduced and overviewed the concept of the EC for readers. The work in the following section continues to add meat to the bones and outline a theoretically grounded model of the EC which will be used in the thesis moving forward.

2.1.5 Presenting the Epistemological Chain framework

Whilst the previous section has outlined what the EC *is*, this section clearly outlines an applied model of the EC, which will be integrated throughout the remainder of the thesis. The current chapter has previously referred to Grecic and Collins (2012) and their work in relation to Epistemology and EC in golf. One of the outcomes of the continued work by Grecic and Collins (2013) was the creation of an EC framework, outlining explicit aspects of the coaching process that are influenced by coaches epistemological beliefs.

As a result of the similarities of the coaching roles in golf and cricket (i.e. the players are in control during performance and the coaches are not directly present on the field of play), the framework was chosen for use in the current thesis. This was the case along with the practical and accessible nature of the work, which compliments the

pragmatic aspirations of the current thesis [see 3.2, chapter 3]. The six stages of the EC framework created by Grecic and Collins (2013) were; i) Environment ii) Relationship Built iii) Goal Setting iv) Methods v) Judgements Made vi) Future Direction. As a final and important rationale for the use of this particular framework, Grecic and Collins (2013) appear to implicitly acknowledge both the socially constructed aspects (i.e., R. L. Jones et al., 2016) and cognitive, decision making aspects (i.e., Abraham et al., 2010) of the coaching process discussed earlier [see 1.1.2, chapter 1]. The EC framework also clearly acknowledges that the coaching process happens in line with a clearly identified goal or outcome (i.e., Abraham & Collins, 2011a). In completing the link for readers, considerations such as 'Environment' and 'Relationship Built' reflect the social underpinnings of the coaching process, whilst 'Goal Setting', 'Methods' and 'Judgements Made' more reflect the cognitive and Decision-making focus of the coaching process. Table 2.3 (on the following page) presents a full overview of the EC framework created by Grecic and Collins (2013), along with descriptive characteristics and example behaviours of coaches operating from both increasingly naïve and increasingly sophisticated positions.

Table 2.3 *The Epistemological Chain (EC) of naïve and sophisticated sports coaches (Grecic & Collins, 2013 p.155)*

Naïve	Epistemology	Sophisticated
Guru and discipline, rules to follow, autocratic, disciplined, power relationship, dominating coach, compliant athlete, failure to perform is highlighted	Environment	Learning environment created, where athlete can experiment safely without fear of ridicule, two-way discussions and flow of ideas
Transactional, power roles, dictating behaviours	Relationship built	Trusting, caring, nurturing, autonomy-supportive behaviours demonstrated
Coach prescribed, subjective to coach's beliefs, constant reliance on the coach	Goal setting	Athlete led in discussion with coach
Learn - drill – do, follow set practice regime	Methods	Challenges set for the athlete, creating learning episodes
Success or failure determined by tangible markers or results (e.g. changes in technique, improvement in coach's measure/statistics	Judgements made	Dependent on how the player develops as an athlete and person with life skills, whilst working towards the athlete led targets. Decisions based on "is the athlete now an autonomous decision maker confident in their own ability?"
Constant coach's revision of targets, technique, results. Coach led modifications to be practiced, re-learned and embedded	Future direction	Future path determined by how self-reliant the player feels. Possibilities include requests for future guidance/mentoring, or removal from the coaching process if it is no longer needed

In continuing the application of the epistemological positioning of sports coaching, examples of this chain can be found when reflecting on earlier coaching literature. As an example, Becker (2009) explored athletes' experiences of 'great coaching'. Participants in this study commented on *the environment* created, suggesting their coaches were approachable: "You never felt like you were stepping over a boundary if you were to walk into their office and ask them a question" (p.103). The same author also identified that, for the most part, participants in the study were also able to build

'strong' and 'lasting' professional and personal *relationships* with their coaches. As an athlete-participant in the study indicated: "you could have fun with coach and he would let you pick at him, but there was never a sense that you would ever disrespect him or that you were on the same level. He was always the coach and you were always the player" (p.104).

This theme was also identified in the work of Dieffenbach, Gould, and Moffett (1999) who outlined that good coach-athlete relationships are "characterized by mutual trust, confidence in each other's ability, good communication (especially good listening skills) and a sense of collaboration or working together" (p.2). These examples once again offer support for the EC framework identified in Table 2.3.

So far the chapter has focused specifically on addressing and unpacking epistemology and the EC as two defining concepts that underpin the thesis. Moving forward, the following sections of this chapter explore the supporting concepts of Professional Judgement and Decision Making (PJDM) and theories of learning which are directly relevant to both epistemology and the production of micro-level coaching practice (i.e. the practical outputs that we see coaches *do* with their players). As a starting point, PJDM is explored as an area interwoven with epistemology and the EC.

2.2 AN INTRODUCTION TO PROFESSIONAL JUDGEMENT AND DECISION MAKING

It is becoming increasingly recognised that professional practice, at least in fields where human behaviour is concerned, is characterised by complexity, uncertainty and unpredictability to which practitioners are required to exercise their judgment and wisdom (Coles, 2006). In a more applied sense, it has been suggested that professional practice is largely a series of decisions in terms of assessing which issues require attention, setting goals, finding or designing suitable courses of action, and evaluating and choosing among alternative actions (Simon & Associates, 1986). This idea is extended by Carr (1995, p. 71) who identifies:

> Professional action is not 'right' action in the sense that it has been proved to be correct. It is 'right' action because it is reasoned action that can be defended discursively in argument and justified as morally appropriate to the particular circumstances in which it was taken.

The argument proposed by Carr highlights the uniqueness of professionals' (and in this case coaches) Decision-making, and the extent to which decisions are context specific. These *particular circumstances* referred to by Carr, can be easily linked to the *specific coaching contexts* identified by Côté and Gilbert (2009) along with the *temporal boundaries* referred to by R. L. Jones et al. (2016) [see 1.1.2, chapter 1]. In understanding how coaches ultimately make decisions, the thesis places its focus on the modern perspective of Professional Judgement and Decision Making (PJDM).

In doing so, it is important to acknowledge the historical perspectives that have influenced the emergence of PJDM, namely Classical Decision Making (CDM) and Naturalistic Decision Making (NDM). CDM suggests decisions are made as a result of careful consideration and a 'weighing up' of options (Abraham & Collins, 2011b; Edwards, 1954). Here it is well accepted that decisions are deliberate, analytical and logical (Thompson & Tuden, 1959). On the other hand, NDM suggests decisions are made very quickly (often on the spot) as a result of previous experience(s) and that NDM is often time-pressure and more automatic, relying less on cognitive resources due to the emotional and environmental demands (Klein, 1998). Whilst both CDM and NDM are valuable tools for decision makers in order to effectively "deal with uncertainty by weighing alternatives and taking creative risks" (Conley, 1988, p. 397), PJDM offers a collective view of these separate yet supporting concepts.

L. Collins and Collins (2013) propose that PJDM is a combination of both the analytical (i.e. CDM) and naturalistic (i.e. NDM) Decision-making models outlined previously. In continuing, PJDM is complex, synergetic and develops as a result of reflective practices (L. Collins & Collins, 2013). More recently, the same authors have proposed PJDM as a series of decisions taken before, during and after the coaching

process (D. Collins & Collins, 2021). Importantly (and as previously identified) coaches make decisions as a result of a combination or blend of knowledge in relation to i) 'who' the coach is working with, 'what' is being covered and/or 'how' it is being addressed (Muir et al., 2011). As a final point, PJDM places a specific and explicit focus on the *correctness* of the chosen approach for the specific context and assessment of Decision-making quality is made against this objective (D. Collins & Collins, 2021). In linking back, clear connections can be made between this *correctness* and the *justified as morally appropriate* presented by Carr (1995).

In implementing the PJDM approach, the decision maker uses macro (overarching) cognition during the pre-planning stage to drive the process of design and implementation of the activity (e.g., Martindale & Collins, 2012). This very deliberate process involves a projection of future progress towards achieving the desired goal, including the nature of progress, what challenges are likely to be faced (i.e., the situational demands; Abraham & Collins, 2011a) and how these can be overcome. Clearly here, analytical aspects of the Decision-making process are of increased importance to enable coaches to identify the 'big picture'.

When in action however, coaches require an increased level of metacognition, defined here as; "knowledge about and regulation of one's cognitive activities in learning processes" (Veenman, Van Hout-Wolters, & Afflerbach, 2006, p. 3). The coach extends the use of metacognition into the activity, through on-going, in action reflective checks or audits (L. Collins & Collins, 2015; Schön, 1987). This increased use of reflection-in-action (Schön, 1987) enables the coach to internally assess *how things are going*. Referring to the previously raised idea of 'Nestedness' in the planning process (Abraham & Collins, 2011b), in-session PJDM enhances coaches' abilities to make decisions which cater for the application of long-term objectives with a combined

focus on micro-level delivery with players (i.e., how are things going *today* in relation to the plan?) It is this blended approach which is a defining characteristic of PJDM.

Having introduced PJDM as a significant concept which influences the coaching process, the work that follows integrates and discusses the links between epistemology, the EC and PJDM as a method of Decision-making. This takes the form of a practical example from cricket and in doing so, continues to outline the relevance of exploring the epistemological basis of red and white ball cricket with developing athletes.

2.3 INTEGRATING THE EPISTEMOLOGICAL CHAIN WITH PJDM – HOW COACHES COULD/SHOULD OPERATE

The previous sections of this chapter have set the scene for readers and explored the key theoretical concepts which underpin the current thesis. The aim of this section is to offer readers and applied example from cricket coaching practice, showcasing the interwoven nature of epistemology, EC and PJDM.

The extent to which epistemology and the EC are integrated into the decision-making process varies. For example, where a coach observes a practice that is not going as planned and makes a decision to intervene and adapt the practice, may be based heavily on their PJDM. In contrast, epistemology and the EC may become significantly (and consciously) blended in order to guide coaches on a more meso- and macro-level. For example, a coach identifying what is trying to be achieved within their environment. As an attempt to contextualise this work within Cricket, consider the following example, from the developing athletes' context.

A representative age group side have played their first competitive fixture of the summer and are all out having scored only 84 runs. The team has only managed to fulfil an hour of its three-hour batting allocation. Prior to the team starting their three hour fielding allocation, the coach has a number of decisions to make; i) (How) does the coach interact with the players during the mid-session break after this (severely) below par performance? ii) If the coach does choose to do so, does he/she interact with the

team as one group, specific sub-groups of the batting order, bowling attack or on an individual basis? iii) Does the coach look ahead to the second half of the match, review the first half or do both? iv) In doing any or all of the above, what type of specific coaching behaviours does the coach engage in? (E.g. praise, open/closed questions, scold, silence etc.)

It is here where PJDM comes to the fore. In making these choices, the coach may internally review the aims and desired outcomes of the fixture (micro-level), identify an 'intention for impact' (Hill & O'Grady, 1985) and design a short-term intervention to suit. It's worth noting here that the coach would have the same decisions to make had the team batted for an hour and a half, two hours or the full three-hour allocation. Fundamentally, the coach has to assess the context that they find themselves and develop an appropriate course of action (Simon & Associates, 1986).

In making these micro-level decisions, it is here where the coach should be, consciously or unconsciously integrating their epistemological stance to create an effective EC. It is acknowledged that *at times* however coaches' micro level PJDM may be disconnected from their epistemological views due to the time-pressured and emotionally-laden nature of situations (Crowther et al., 2018). To further explore the above example, the coach may want to consider the meso- and macro-level environmental outcomes of the context that they are working in (i.e., the nestedness; Abraham & Collins, 2011b). For example, what are the aims of the system in which the coach is working? (E.g. win/loss ratios, psychological development, high level of enjoyment, player progression, increased player retention etc.) How long have individual players within the team been involved with the system? (e.g. 6 months, 2 years, 4 years). To what extent are individual players progressing towards the individual aims and objectives they are working towards?

Being able to form answers to these questions would help to guide the coach's PJDM as a result of incorporating their epistemological views via an EC. Table 2.4 (below) considers the possible short, medium and long-term outcomes of coaches in the above situation who hold opposing naïve and sophisticated epistemological views.

Table 2.4 *A table to demonstrate coaches' short, medium and long-term decisions and responses to a heavy defeat based on differing epistemological positions*

Naïve	Epistemology	Sophisticated
Knowledge is 'handed down', is certain and unchanging	Knowledge beliefs	Knowledge is complex and uncertain
Learning happens quickly or not at all. Learning ability is fixed	Learning beliefs	Learning can take place gradually and can be self-constructed by the learner
Coach engages in a coach-centred interaction with the players between innings based on the probable outcome of the game. Coaching behaviours include instruction, closed questions and scold	Short term outcomes	Coach engages in a holistic, individualised player-centred review process against players' current development status and individual aims and objectives. Coaching behaviours to include open questions, prompts/probes and silence.
Coach driven goal setting for the next fixture and remainder of the season including reactive training sessions focused on improvement of identified 'weaknesses'	Medium term outcomes	Continuation of individualised player development programme however coach to 'check in' with players about where they are at, what their focus is etc. Coach (and coaching team) to provide extra support in areas which players identify
Coach labels players as either 'having' or 'not having' the ability to play at representative level and selects/deselects players accordingly	Medium-long term outcomes	Review of player development (with player(s)) in accordance with over-arching programme aims and individual development plan. Players given developmentally appropriate progression or exit routes

What should be noted here is the immediate role PJDM plays in the short and potentially medium term outcomes as a result of the coach identifying an 'intention for impact' (Hill & O'Grady, 1985). Significantly, as identified previously in Figure 2.2, coaches *are* influenced, consciously or unconsciously by their epistemological positioning when deciding on these choices. In the longer term, epistemology and EC

increasingly come to the fore as a result of an increased amount of time available for coaches to make their choices.

Progressing from the above example, there are benefits in switching the focus and considering an athletes' EC. If a coach were to spend time understanding their athletes' EC and hence their preferred methods of working and learning, it is likely that a more cohesive and effective coach-athlete relationship will occur and any future conflict in the relationship may well be avoided. For example, consider the coach with a naïve epistemology working with a player who holds a sophisticated stance. The direct instruction and knowledge 'transmission' from coach to player may well be unwelcome and poorly received. Consider too the reverse. A coach with a sophisticated epistemology attempting to draw out the knowledge from a player – who themselves hold a naïve stance and are wanting/needing the knowledge (and answer) to come from the coach (Grecic & Collins, 2013).

Thus far, the chapter has explicitly considered key concepts which will underpin the thesis. Prior to closing the chapter, it is important to acknowledge a final aspect which will form a somewhat implicit part of the thesis, namely, theories of learning. Clearly, as a result of exploring coaches most deeply help beliefs about how learning happens (i.e. their epistemology), theories of learning will be an important consideration. As a result, the following section makes clear to readers the links between the well accepted theories of learning and epistemological positions previously identified.

2.4 ACKNOWLEDGING THEORIES OF LEARNING

Whilst it is not within the scope of this thesis to give an in-depth exploration of learning theories, it is certainly worth exploring and connecting the individual theories of learning with the epistemological positions outlined earlier in this chapter. For those

wanting a fuller review of theories of learning in sports coaching, please see Nelson, Groom, and Potrac (2016).

When considering coaches who hold naïve beliefs about learning, there is a strong connection with the behaviourist theory of learning, the dominant theory of learning in the first half of the twentieth century (Harris, 2000). Learning, according to behaviourism is identified as a change in behaviour, that is as a result of a relationship between behaviour and consequences (Carlson & Buckist, 1997). In short, a behaviourist approach to learning identifies the use of stimulus and associated responses. In this view, learners are somewhat passive recipients 'of' learning (Harris, 2000) and there is belief that given the right conditions, learners will ultimately learn appropriate responses to stimuli presented to them. Learning, according to behaviourism is influenced by both genetic and environmental antecedents as learners develop towards, *one, objective truth* (Groom, Nelson, Potrac, & Coyles, 2016). Referring to epistemology, there are clearly links here to two specific dimensions of epistemology; i) the certainty of knowledge ii) the source of knowledge. Given knowledge is viewed as certain, and that experts hold the knowledge that the novice seeks, behaviourism as an approach to learning would readily align with a more naïve epistemology.

When applying behaviourism to coaching, success or not of coaching episodes would be based on the progress of participants behavioural attributes. For example, common coaching objectives would be based around; "by the end of the session, participants will be able to…" (Chambers, 2011, p. 43). Commonly, the objectives of the coaching will be operationalised through coaching behaviours such as instruction and demonstrations, with the coach holding responsibility for the pace and direction of the coaching session. Once again, these approaches place the coach as 'knowledge holder' and reflect an increasingly naïve epistemological stance.

The next consideration is that of social cognitivism, and specifically Social Learning Theory (SLT; Bandura, 1977). As an important aspect which differentiates this approach from behaviourism, Bandura (1977) positioned SLT as based significantly on information processing. Specifically, that unlike behaviourism, social cognitivism acknowledges that 'something happens' between the stimulus and response stages of behaviourism (Atkins, 1993). An important point to make here is the view that individuals can affect their own behaviour *however* that this is only after initial behaviour has been shaped by external influences such as reward and punishment (Thomas, Morgan, & Harris, 2016). In an attempt to summarise, social cognitivism and more specifically SLT, focuses on three key interconnected aspects; personal factors, behavioural patterns and environmental influences (Bandura, 1986). There is an understanding that each can influence behaviour individually, at different times, and with different levels of 'strength'. In sum, they are not all influencing to an equal extent, all the time.

In making connections between epistemology and SLT it is necessary to identify the four stages of observational learning more broadly. Namely, attention, retention, production and motivation (Bandura, 1977). It is here that there is some debate. In discussing the attentional processes when observing a model (a key component of SLT), it is widely accepted that it is not simply observation which enables learning to take place but the accurate recognition of the key features of the behaviour being modelled (Bandura, 1977). It is in the ways in which learners are 'directed' to these key features which may connect to increasingly naïve or increasingly sophisticated epistemological views. As an example, a coach may explicitly direct the learner to observe the key features of a demonstration. E.g., *watch how the foot is facing towards the target.* As a contrasting view, the coach may engage learners in watching a demonstration, prior to asking a series of questions which encourage the learner to 'work through' what they

have seen for themselves. E.g., *talk to me about what you have noticed.* In this example, learners are processing the information which they deem most relevant and the emphasis is placed on the learner to organise the information (Harris, 2000). In relation to the epistemological dimension of 'the source of knowledge', the two examples here may lead to assumptions about the level of naivety or sophistication distributed across coaches' beliefs and hence the extent to which the social cognitive aspects of the process are present. As a brief follow up, the same can also be said during the *reproduction* stage of observational learning. It is the way in which further observation and feedback are operationalised in attempting to refine and adapt the skill, which may provide clues as to the coaches' epistemological positioning.

It would be remiss having considered *explicit* approaches to learning within the cognitivist perspective (through SLT), not to briefly point to *implicit* approaches to learning. As a result of the extensive work of Masters (see most recently; Masters, van Duijn, & Uiga, 2019) implicit learning, and its strategy of aiding learnings without the development of conscious rules and knowledge to guide behaviour has become well documented. In linking with information processing raised previously, the working memory of the learner is 'hampered' (i.e., strategies are used such as analogies and/or secondary tasks) to distract the learner form engaging in hypothesis testing and as a result, developing explicit knowledge of the required behaviour (i.e. skill). In linking implicit learning approaches to epistemology, these approaches, where the emphasis is once again placed on the learner (i.e., Harris, 2000) would certainly be positioned as increasingly sophisticated. This is especially so when considering three particular dimensions of epistemology; i) the source of knowledge ii) the certainty of knowledge iii) the complexity of knowledge.

A final consideration in this section is constructivism. Across both of its component parts, i.e. cognitive constructivism and social constructivism, there is an

acknowledgement that learners build up their own knowledge (Sewell, 2002) as a result of active involvement in learning and that learning is most effective when it is active and interactive (Newmann, 1994).

When considering cognitive constructivism, coaches should aim to understand the prior knowledge that the learner is 'bringing to the table' (i.e. that they are not a blank canvas). Coaches who are more aligned to the theory of social constructivism place equal importance on both the coach (i.e. teacher) and the learner given that learning is viewed as multidirectional (Lave & Wenger, 1991). From a social constructivist view, learning grows out of social interactions, particularly when experienced and inexperienced learners interact.

In once again linking to epistemology, it is clear that coaches utilising these approaches are likely to be operating from an increasingly sophisticated epistemological view. At the micro-level, coaches with increasingly sophisticated beliefs about the learning process, engage their learners through frequent interaction and feedback, alongside making connections to real world contexts (Roschelle, Pea, Hoadley, Gordin, & Means, 2001). As a result, coaching is (often) task orientated, including increasingly self-directed and discovery-based activities (Wenger, 1998).

To summarise, this section has outlined connections between the higher order, epistemological beliefs of coaches and the inter-connected concepts of specific theories of learning. I note here that although the theories of learning in the above work have been presented 'against' each other, given the characteristics of epistemology, PJDM and the complexities of coaching in general, it is common for coaches to find a best fit. What is presented in this section are the 'probable' and 'likely' connections of coaches who lean towards (as we all do!), one perspective or another.

2.5 CONCLUSION

This chapter has critically examined the literature in relation to epistemology and its application to cricket coaching (RO1). It has outlined what is currently known about epistemology (and the EC) through applied exemplars, anecdotal and qualitative accounts. The vital and influential role that epistemology plays in the coaching process has been made clear. Alongside this, readers have been presented with a step-by-step EC framework (i.e. Table 2.3) which ultimately guides the professional judgements that coaches make, both within and outside of the coaching session.

There remains however, little in the way of 'applied evidence' confirming or not, the existence of inter-connected decisions based on coaches' epistemological beliefs, specifically in relation to cricket coaches' planning, practice and reflection processes. This becomes even more scarce when the specific considerations of coaching red and white ball cricket to developing athletes are taken into account.

As a result, the key area of exploration across the thesis is the influence the format of the game has on coaches' epistemological beliefs. To what extent is the epistemological positioning and underpinning PJDM processes affected by the format of the game being coached? (I.e. red ball or white ball); To what extent does their epistemological viewpoint remain the same for both formats?; To what extent is a coaches' epistemology and PJDM adapted?; To what extent is a coaches' epistemology, and resulting PJDM *allowed* or *expected* to change based on the social-cultural pressures and expectations that are often faced by coaches in the world of sport? (E.g. line managers, colleagues, parents of players etc.).

Currently, there are very few answers to these types of questions. Consequently, it is the aim of the current thesis to address a number of these questions, in line with the research objectives stated in Chapter 1.3. In addressing this area of research, coaches (and coaches' contexts) will be more informed and better understand the approaches

used, and challenges faced by coaches when creating truly aligned, cohesive and context-specific coaching environments that best meets the needs of those within it.

In undertaking primary research, it is important to outline the *why* and *how* of the research process. What follows in Chapter 3 is an exploration of the philosophical underpinnings of the thesis, and as a result a number of methodological implications for the research process.

CHAPTER 3: RESEARCH PHILOSOPHY AND METHODOLGY

3.1 INTRODUCTION

The aim of this chapter is to outline the philosophical positioning of the thesis and methodological implications. Exploring the rationale behind the philosophical approach will enable me to showcase the alignment of the methodological decisions taken throughout the research process. The aim here is to leave readers with a clear understanding of how my philosophy as a researcher has impacted on the practical, 'on the ground' choices I have made in undertaking the thesis.

3.2 PRAGMATISM AS A RESEARCH PHILOSOPHY

The thesis utilises a pragmatic research philosophy. As a decisive factor, pragmatism was chosen given its focus and emphasis on creating practical solutions to applied research questions (Giacobbi, Poczwardowski, & Hager, 2005). Given my own practical wants for the thesis, and the aspirations for the thesis to be *useful* and *more than a book on a shelf,* clearly pragmatism as an overarching philosophy bodes well. Pragmatism reinforces the positive implications for the 'end user' (Giacobbi et al., 2005), encouraging studies to produce applied implications which make a difference (Bryant, 2009). In continuing to add detail in the sections that follow, three interwoven areas were considered when deciding on pragmatism as a philosophy, these were; ontology, axiology and epistemology.

In addressing ontology, i.e., that of how I see the world (Lincoln & Guba, 2013), the research is positioned from a relativist perspective. Relativism outlines there are multiple realities which are *relative* to the individual. Experiences are key and it is the interpretation of those experiences which ultimately leads to a personal truth (Brownlee, 2004; Guba, 1990). There is no one truth. There is no true or false. As Blaikie (2007) suggests, the only knowledge of reality lies with the social actors who experience it. It is this 'personal truth' of cricket coaches that is of significant interest.

As a direct consequence of this relative ontological stance, the thesis will utilise increasingly interpretive methods. Interpretivism, in its purist form, is interested in understanding the thoughts, feelings and experiences of those being researched and more specifically how they go about 'making sense' of them (Coe, 2012). Interpretivism is concerned with understanding the world as it is, at a subjective level, as it emerges and is experienced by the individual (Burrell & Morgan, 1979). It fundamentally rejects the positivist view that the world consists of observable and measurable facts (Sparkes, 1992), placing an emphasis on how the individual mind influences and interprets meaning making (J. Smith, 1989). This ultimately leads to subjective interpretations of reality, as individuals convey unique interpretations of the same subject (Chilisa & Kawulich, 2012; Creswell, 2003). This interpretive view offers clear alignment to my relativist ontological position.

As there is a key relationship between myself as the researcher and the research topic, it's important to explore my axiological assumptions. Exploring this set of assumptions is required due to the fact that as the researcher, I bring both the specialist, intricate and nuanced understanding of both the research topic and context, alongside the experiences and emotional biases that will undoubtedly have an impact (Chilisa & Kawulich, 2012). As a result, what follows is an exploration and some brief detail on how and why I have come to want to explore the area in question, using pragmatism as a guiding approach.

As a Level 4 qualified cricket coach (see Table 1.1), with a strong educational background in academia, the role of having 'a reason why' which underpinned professional thoughts, opinions and actions is something that I have been well versed in since early adulthood. As a result, *'knowing why'* has become a key personal aspect of being able to 'label' someone as a good coach. Attempting to practice what I preach, this is a key aspect of my own practice across a micro to macro level. (Of course, I am

not claiming that all of my coaching practice has been informed by a lengthy planning session where all aspects are 'reasoned out', deemed appropriate and aligned to the greater good). Therefore, individuals being able to give *their own personal clarity* on 'why they decided to' is something that is a key component of my own success criteria of coaching.

I remember vividly, a coaching experience whereby I was asking other coaches within a session *why* they were doing the practices they were doing? *Why* today? *How* is this helping the players to learn? To offer some more detail, the practices that the coaches were doing were well established, physical and technical coaching practices for bowlers, which many coaches within cricket will have used. (In fact, they are often showcased at coaching conferences, masterclasses etc. led by those working at the highest levels of the sport). My intrigue and enthusiasm lay in why the particular players within this session, on this day, were taking part in these activities. My enthusiasm was not reciprocated. "**Are you just here to criticize?"** my new colleagues asked rather abruptly. Exploring *why* coaches are doing what they are doing when helping players learn in red and white ball cricket, is clearly a continuation of this theme. Applying this work and helping coaches to develop a deeper understanding of why *they* are doing what they are doing, with *their* players, is an area of real intrigue.

In adding some more meat to the bones, and in considering a more personal, and emotive view, I am one on a long list of those who aspired to become a professional cricketer and didn't. As part of a somewhat stereotypical story, I peaked early, got injured and was replaced by an outsider! Perhaps this offers some insight into the developing athletes context of the current thesis. In further adding to this point, it remains commonplace for those working within professional cricket (i.e., 1st XI coaches) to have played professional cricket themselves. In highlighting this, all eighteen current FCC head coaches have previously played professional cricket. As I

have not, the developing athletes' context has been chosen as one where I may realistically be able to add value throughout my career.

Finally, it is important to consider my epistemological positioning. This is something that has certainly developed, and perhaps is still developing across the many facets of life. Initially, as a student of education in school through to university. More currently, in my professional life as a university 'lecturer' and cricket coach and finally, in my personal life, in the role as 'Dad', the learning and knowledge ideas central to epistemology are ones that are often in the forefront of my mind [see 2.1, chapter 2].

Reflecting firstly on my time as a student in school, I'm not sure I considered how learning happened and how I knew what I knew. I got my head down and worked hard to learn what the teachers told me(!!) As a university student - with more autonomy over the topics I was learning about - was probably the first time I took a leading role in my own learning. I progressed from a naïve epistemological position (i.e. a belief that knowledge and learning happens as a passing down of discrete facts from expert to novice) to a *lesser naïve* stance (i.e. I appreciated *slightly more* my role in the learning process). Take for example a world-renowned guest speaker. I was on the edge of my seat to hear what this leading expert had to tell me about the topic in question. I mean, who was I to question what they were saying? Even in my entry into being a university lecturer, I was always proud of my information filled powerpoint presentations that I *gave* to students.

Interestingly, this positioning was blurred in different contexts. As a coach standing in front of a group, I enjoyed using a blend of coaching approaches that stemmed from both behaviourist and constructivist approaches. The assumption about my role as a cricket coach was not that I was there to provide players with all of my knowledge, but to help them along *their* way. Help them to develop their skills and work *with them* to nudge them in whichever way was possible. One significant

influencing factor appears to be my own perception of the roles and the associated socio-political expectations, 'pressures' and importantly level of experience held in each of these roles.

As a result of many factors (including being surrounded by more experienced practitioners in the world of education, a want and willingness to improve and the influence of this thesis!) my epistemological positioning has developed - and quickly at that – and has impacted significantly on the teaching and learning strategies that I use in practice with learners in my professional life. This change has also coincided with now being 'Dad' to two small rascals(!) since the beginning of this thesis. There have certainly been times where both in the moment, and on reflection, I have considered how the learning process plays out for my children. How *is* she going to learn that her pasta needs to be cooked in a pan and she can't just eat it out of the packet? How *is* he going to learn to move her hands closer together to catch a smaller object? For now at least, I am positive that my epistemological stance is becoming increasingly sophisticated.

In attempting to draw this section to a close, the real importance of my philosophical positioning is the impact that this has on the micro-level procedures undertaken 'on the ground', with my participants and the data that is created. To that end, the following section will address the wider methodological considerations underpinning the thesis.

3.3 METHODOLOGICAL CONSIDERATIONS

As the final section in this chapter, what follows is an exploration of a number of methodological choices I have made as the researcher. The section will cover three key, re-occurring aspects of the research process, which are; i) data collection using interpretive methods ii) reflexive thematic analysis iii) addressing rigor and trustworthiness.

3.3.1 Data collection using interpretive methods

Interpretive approaches such as interviews, focus groups and workshops formed a significant part of the data collection activity across the thesis. These activities, rich in interaction between researcher and participant(s) encourage a much deeper exploration of the individual's thoughts, feeling and experiences of the topic in question. This seems appropriate given that understanding the experiences of individuals and groups is at the heart of interpretive inquiry (Coe, 2012). Not only do these methods allow for greater depth, they also allow for the participant to take control (if given the reins!) and lead the research in the direction that may be outside of the original line of questioning (Purdy, 2014; Rynne, Mallett, & Tinning, 2010). Making direct links with the pragmatic philosophy of the thesis, this approach helps to maintain the *'usefulness'* and *'relevance'* of the approaches in question.

To continue to make links between the methodology and the overarching pragmatic philosophy, the qualitative data collection approaches used throughout the thesis also lend themselves to the development of meaningful and long-lasting relationships between the researcher and the participant. Given that pragmatism has been identified as a philosophy which bridges the gap between academic study and the practical concerns of practitioners (Giacobbi et al., 2005), spending time with, getting to know, and maintaining relationships with cricket coaches operating in the real world is seen as a significantly positive outcome.

Importantly, from a practical perspective, these approaches offer the flexibility required when working in an applied context. If for example, a participant could not attend a face-to-face interview at short notice due to unforeseen circumstances (e.g. a coach being re-deployed with other parts of the organisation), these methods were able to bend and flex accordingly. As an example, a telephone interview could replace the last minute cancellation of a face-to-face interview whilst still maintaining an alignment

to methods that emphasise deep, interpretive understandings of the social phenomena in question (Pope, 2006).

3.3.2 Reflexive Thematic Analysis

Thematic analysis (TA) is often mis-conceptualized as a single qualitative analytic approach. It is however better understood as an umbrella term for a range of quite different approaches to identifying patterns (i.e. themes) across qualitative datasets (Braun, Clarke, Hayfield, & Terry, 2019). TA offers researchers great flexibility, meaning it can be used to do lots of the things that qualitative researchers are interested in. This flexibility stems from TA's status as an analytic method, rather than a methodology (Braun et al., 2019).

In recent developments, three main approaches to TA have been recognised; i) coding reliability ii) codebook iii) reflexive. Each approach to TA has a significantly different *method* (i.e. how the analysis actually happens). The different method is as a result of significantly different philosophical underpinning. Whilst it is not the ambition of this particular section to review the philosophical underpinnings of all three approaches to TA, readers who would like this are referred to the work of Braun et al. (2019). The remainder of this section outlines for readers the philosophical positioning of Reflexive Thematic Analysis (RTA) and its suitability for use within the philosophical positioning of the thesis.

Aside from the philosophical alignment of RTA to the thesis, it would also perhaps be remiss at this point not to highlight that given (R)TA can be used within most theoretical frameworks, the flexibility, alongside its accessibility, makes (R)TA particularly suitable for (early career) researchers who may be less experienced in qualitative research (Terry, Hayfield, Clarke, & Braun, 2017).

3.3.2.1 Reflexive Thematic Analysis as a 'Big Q' approach

Whilst there is some debate as to the quantitative (and positivist) origins of TA and who first created the term (e.g., Holton, 1973; Kinsky & Strunk, 1933; Winder & Hersko, 1958), what is clear is that RTA represents a *Big Q* approach (Kidder & Fine, 1987). Namely, an acceptance that 'meaning' is contextual and/or situated, and there are multiple realities. It is clear that this approach aligns with the previously identified pragmatic and interpretive philosophical underpinnings of the thesis. Another influencing factor in the choice of RTA was the acceptance and encouraged stance that the researcher plays an active role in the interpretation of the data, and brings a host of meaningful experiences and influences to the process (e.g. cultural memberships, social positionings, ideological commitments and scholarly knowledge (Braun et al., 2019). This active involvement in the analysis process reflects well the pragmatic and experiential orientations of the thesis and ultimately leads to RTA as a useful tool in exploring what participants think, feel and do.

On a personal note as the researcher, I have become comfortable with the active role I play in 'constructing' the data, as opposed to searching for themes akin to mythical creatures that are waiting 'in' the data to emerge(!) (Braun et al., 2019). I refer readers to an extract from Terry et al. (2017, p. 21) who suggest that:

> In Big Q TA, the researcher is more like a sculptor, chipping away at a block of marble. The sculpture is the product of an interaction between the sculptor, their skills and the raw materials. Analysis becomes a creative rather than technical process, a result of the researcher's engagement with the dataset and the application of their analytic skills and experiences, and personal and conceptual standpoints

3.3.2.2 The RTA process

From a practical perspective, analysis includes both semantic and latent aspects of coding. Codes were generated as a result of concepts explicitly stated by participants, but also those concepts which were more implicit and underpinned what was expressed by the participants involved (Braun, Clarke, & Weate, 2017). Inductive analysis was the

primary method of analysis throughout all of the Chapters. This process started with a focus on the data, rather than existing concepts and theories (Terry et al., 2017). Deductive analysis was also used as a supporting method in order to maintain a 'cross-check' against the pre-existing literature. A pertinent example here comes in Chapter 5. As a next step in exploring the results of the initial primary data collected and analysed in Chapter 4, my main priority was to analyse the data inductively. That being said, I was also keeping 'one eye open' in an attempt to be deductive against the previous evidence base and results from Chapter 4.

Analysis followed the six-stage method as identified by Braun and Clarke (2013). Familiarisation (step 1) with the data occurred through reading and re-reading of the transcripts whereby initial codes were then generated (step 2). Once initial coding was completed, themes were created (step 3) and reviewed to ensure data was reflective of the themes (step 4). Finally, themes were defined (step 5). As a result of the truly 'Big Q' approach eluded to earlier, I have attempted to 'fully realise' themes (as opposed to offering domain summaries of the data that are less likened to RTA approaches). As a result and reflecting the idea that good themes are those that tell a coherent, insightful story about the data in relation to the research question (Braun et al., 2019) the final step in the analysis was the creation of 'storybook themes' (Clarke, 2017). Once these storybook themes were created, they written up (step 6).

3.3.3 Addressing Rigor and Trustworthiness

There has been significant recent debate in relation to addressing rigor and trustworthiness within qualitative research. Discussion centres around researchers' use of specific *criteria* in order to showcase the level of rigor and trustworthiness of the qualitative research process. In offering a short overview, recent authors have been challenging the historical and well accepted measures of rigor and trustworthiness (i.e., Tracy, 2010) and the extent to which there are *universal measures* of rigor and

trustworthiness. For a fuller review, readers are directed to the work of authors across the last decade (e.g., Burke, 2016; B. Smith & Caddick, 2012; B. Smith & McGannon, 2018; B. Smith et al., 2014) which have been influential in the production of this thesis.

The approach to addressing trustworthiness follows the relative philosophical positioning of the thesis. In doing so, it is important to acknowledge the 'letting go' position that was taken (Sparkes, 1998, 2002; Sparkes & Smith, 2014). This position focuses on the 'goodness' of the research and uses study specific criteria in order to understand this. As numerous authors have identified (e.g., Burke, 2016; B. Smith & McGannon, 2018) this does not simply mean that anything goes. Whilst a socially constructed 'list' of criteria may remain (Burke, 2016; Schinke, Smith, & McGannon, 2013; J. Smith & Deemer, 2000; Sparkes & Smith, 2009), the relativist approach to trustworthiness reinforces the idea that criteria is study-specific, and 'universal criteria' (i.e., Tracy, 2010) do not exist. Referring to my earlier comments in relation to the philosophical underpinning of RTA, a criteriological approach appears to have seemingly positivist roots, or certainly *small q* underpinnings. A relativist approach is increasingly aligned to a *Big Q* approach (Kidder & Fine, 1987) and acknowledges that certain criteria are only useful in certain conditions and situations (Gergen, 2014; Tobin & Begley, 2004).

As a final point here, a study identifying 'more' criteria than the next does not indicate that it is 'more trustworthy'. As B. Smith et al. (2014, p. 197) state, "meeting ten criteria does not make a study twice as good as one that meets five criteria". Fundamentally, the relativist approach focuses on markers of quality being increasingly internal (i.e. the experiences and background of both the researcher *and* the reader(!) as opposed to objective measures which can be tested (Amis & Silk, 2008)

In helping to understand a starting point for ensuring rigor and trustworthiness across the thesis, I leaned on the work of B. Smith et al. (2014), who outlined a list of

potential criteria for researchers with a relativist approach. This extensive and detailed list can be found in appendix 1. Whist not all of these criteria were relevant, six criteria were selected and actioned across all of the primary research chapters (see Table 3.1 below). This reflects the view that criteria for judging rigor and trustworthiness should be utilised based on the starting point, research environment and aims of specific studies (B. Smith & McGannon, 2018).

In closing this section, readers are referred to Table 3.2 (also below). Whilst the criteria remained consistent, there was a review of, and subsequent shift of focus towards a number of criteria, and a softening of focus on others within specific chapters. I would steer readers to picture a music DJ, incrementally increasing and decreasing the treble and bass within their set. Whilst all criteria were present across the thesis, Table 3.2 clearly outlines the specific rigor and trustworthiness criteria which *received the spotlight* for each of the primary research chapters. As an additional element, the methodological strategies used to maintain this rigor and trustworthiness are also presented.

3.3.3.1 The use of critical friends

As a result of the consistent use of critical friends within the thesis (see Table 3.2 below), it is my intention here to clearly outline what these critical friends *did* and *didn't* do. In keeping with the relative positioning of the thesis and aims of RTA, I used critical friends as a way of increasing the depth of my own interpretive understanding of the data. Conversations were had and questions were asked. These allowed me to showcase my (subjective and) intricate knowledge of the data, again addressing a number of key rigor and trustworthiness criteria. This approach was clearly aligned with the *Big Q* approach referred to earlier in this chapter.

Finally, a note on *who* these critical friends were. The extensive turnover of my supervisory team (eluded to in the opening acknowledgements of the thesis), created the

opportunity to use the new incoming supervisors as critical friends. To be clear, coding reliability (i.e., Braun et al., 2019) was not sought amongst myself and supervisory team given that reality (and hence meaning) is both contextual and situated. Fundamentally, my own role as storyteller came to the fore, drawing on aspects such as my existing cultural memberships alongside my ideological and theoretical commitments as a researcher and cricket coach.

Table 3.1 *Characteristics of Rigor and Trustworthiness to be utilised across the thesis (B. Smith et al., 2014)*

Characteristic	**Considerations**
Substantive contribution	Does this piece contribute to our understanding of social life? Does the writer demonstrate a deeply grounded (if embedded) social scientific perspective? How has this perspective informed the construction of the text?
Worthy topic	The topic of the research is relevant, timely, significant, interesting, or evocative.
Rich rigor	The study uses sufficient, abundant, appropriate, and complex theoretical constructs, data and time in the field, sample(s), context(s), and data collection and analysis.
Sincerity	The study is characterized by self-reflexivity about subjective values, biases, and inclinations of the researcher(s); and transparency about methods and challenges.
Resonance	The research influences, affects, or moves particular readers or a variety of readers through aesthetic merit, evocative representations, naturalistic generalizations, and transferable findings
Credibility	Has the researcher spent a significant amount of time with participants? Were participant reflections on the researcher's interpretations of the data sought? Participant reflections, or what is sometimes known as member checks, can open up dialogue about the fairness, appropriateness, and believability of interpretations offered. As participants reflect, fresh light on the study may too be thrown up, providing a spur for richer and deeper analyses. Participant reflections or member checking is, therefore, less a test of research findings or a technique to achieve trustworthiness. Instead, they are an opportunity for dialogue with participants, reflexive elaboration, critique, feedback, affirmation, disagreement, and even collaboration
Transparency	Was the research made transparent through, for example, an audit trail? Did another person, such as a critical friend, scrutinize matters like theoretical preferences, breadth of the interview sample, and the process of sorting, choosing, organizing, and analyzing the data? Did a researcher present his or her interpretations of the data to critical friends who provided a theoretical sounding board to encourage reflection upon, and exploration of, alternative explanations and interpretations as they emerged in relation to the data? Here, in contrast to peer debriefing within a parallel position, the notion of presenting an interpretation acknowledges that while there can be agreement, not all those involved in the process need to define the meanings of a particular data set in the same way as they can be positioned differently in relation to their theoretical interests, research experience, and power resources

Table 3.2 *Chapter specific Rigor and Trustworthiness criteria and associated methodological strategy*

Chapter No.	Rigor and Trustworthiness criteria (i.e. Macro Level)	**Strategies** (i.e. Micro level)
4	a. Substantive Contribution b. Worthy Topic c. Rich Rigor d. Transparency	• Reflexive diary • Follow-up interviews (i.e. 1 initial with each coach + follow ups) • Extensive and flexible interviews • Observations in the field • [External] Critical friend through pilot study • Audit trail of data analysis
5	a. Sincerity b. Credibility c. Transparency	• Member reflections (to open up dialogue as opposed to check for right and wrong) • Critical Friend(s) • Audit trail of data analysis
6	a. Worthy Topic b. Sincerity c. Resonance d. Transparency	• Reflexive diary • [New] Critical friend(s) • Audit trail of data analysis
7	a. Substantive Contribution b. Sincerity c. Credibility d. Resonance e. Transparency	• Social validation questionnaire • Reflexive diary • Critical friend(s) • Audit trail of data analysis

The early chapters of the thesis have made clear for readers the key terminology, literature and methodological considerations that form a key part of the research process. All that is left now is to begin! Four empirical studies follow which address the specific research objectives previously identified [see 1.3, chapter 1]. The thesis draws to a close with conclusions of the findings and recommendations for those involved in cricket.

CHAPTER 4: EXPLORING COACHES' EPISTEMOLOGY IN RED AND WHITE BALL CRICKET

4.1 SETTING THE SCENE

Chapter 2 identified the link between a professionals' epistemological beliefs and their micro level PJDM, in the form of an EC. In the recent literature there has been a growing interest in the 'what and why' of the activities of sports practitioners within their contexts. For example, the work of Martindale and Collins (2012) in sports psychology with Grecic et al. (2013) and Ford, Yates, and Williams (2010) working with golf and football coaches respectively.

Due to the professionalisation of sports coaching (Lyle & Cushion, 2016; North, Piggott, Lara-Bercial, Abraham, & Muir, 2019) this work has moved away from the historical focus on coach behaviours (e.g., Cushion & Jones, 2001; Trudel, Côté, & Bernard, 1996) and toward understanding the rationale behind practitioner choices. This is where the focus of this chapter lies; the exploration of cricket coaches' epistemological perspectives which inform their decisions about practice (Crowther et al., 2018) specifically in respect of two very different formats of the game (i.e. red ball and white ball). After all, one of the defining characteristics of *professionalism* identified by North et al. (2019) is the ability to "show autonomy and expert judgement" (p.2). What is unique in this study is the multiple formats of the sport being played and the extent to which coaches epistemological views, and the format of the game, impacted on the coaching process.

As briefly described in Chapter 1, in the modern era, three different versions of cricket are currently being played. Multi-day cricket, 50-over cricket (approx. 7 hours per game) and 20-over cricket (around 3 hours per game). Given that these games can vary in their techniques and tactics, with new, non-traditional approaches to the game common, coaches are challenged to help players develop their skills and be successful in all three versions [see 1.2, chapter 1]. Clearly then, there is an increasing demand on

coaches to balance the focus of their attention across all three formats and the complexities associated with each.

Coaches identifying the appropriate balance of focus in developing players in both the red and white ball formats of the game is a high-level problem encountered by cricket coaches at all levels of the player pathway. With coaches working with developing athletes being tasked to develop 'the next generation' of players across three formats, the ways in which coaches are going about doing so is an area of intrigue. Therefore, it would be interesting to find out more about what coaches are doing and why, with a focus on coaches' epistemology as an underpinning influence on decision making (i.e., Figure 2.2).

As a result, there were two key aims of this chapter. Firstly, to investigate and evaluate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision when coaching red and white ball cricket (RO2). Secondly, to critically examine the epistemological beliefs of coaches involved in coaching red and white ball cricket (RO3).

4.2 METHODOLOGY

4.2.1 Research Design

Reflecting the desire for rich and deep data (Schultze & Avital, 2011), the aim was to gain an understanding of the coaches knowledge of representative situations concerning practice structure and performance. An interpretive study with longitudinal aspects was developed. Importantly, using a small sample size with multiple data collection points enabled the understanding of individual experiences to be at the heart of the research process (Coe, 2012) and focus on how participants understand and make sense of their world (Sparkes & Smith, 2014). This was achieved through the use of a blended approach of observations, field notes and semi-structured interviews.

The research design enabled a real-world blend of the previously identified pragmatic and interpretive roots of the thesis [see 3.2, chapter 3]. Importantly, the theoretical alignment of the study was maintained, whilst the flexibility of methods catered for the real-world aspects of working with applied practitioners.

As a final note to readers, a pilot study was conducted with a coach from another sport, also working with developing athletes. As a result, the interview methods were refined to ensure the study aims and objectives were met. This focused on a restructuring of the interview with a macro-micro level focus. An example of this was starting the interview with discussions about the coaches' role and ultimately the aims and aspirations of the organisation as a whole before delving into a micro-focus on the coaches' delivery. The phrasing of a number of questions was also revisited to increase the extent to which they were open-ended.

4.2.2 Participants

A purposive sample of five male cricket coaches aged 26 to 45 years old *(*M_{age} = 33 years, *SD* = 9.14) were recruited based on the following criteria: (1) holding a minimum of the national governing body (NGB) 'advanced' or 'level 3' coaching award (two participants held level 4 awards) (2) working with developing athletes within the representative age group and/or academy stages of county cricket programmes (3) having a willingness to examine their own coaching practices. Table 4.1 below outlines how participants met the relevant criteria

As a note to readers, a sixth participant was recruited however withdrew after taking part in a pilot interview. This was due to the participants perception of the volume of commitment required. As a review measure, I re-affirmed the involvement required from the remaining five participants and in doing so agreed both researcher and participant expectations.

Table 4.1 *Coach-Participant demographic*

Participant	Qualification Level	Background	Number of years coaching experience	Number of years' experience in roles coaching developing athletes	Observed practice environment
Rob	ECB level 4	Gained a 'trainee' county cricketer contract aged sixteen for two years prior to getting a full-time job outside of cricket. Coaching began as a second career after deciding on a career change	14	10	County cricket club 'Academy' and 'Emerging Player Programme' (EPP)
Evan	ECB level 4	Played county 2nd XI cricket for a number of years prior to becoming a coach. Has been employed as a coach since.	16	11	County cricket club 'Academy'
Richard	ECB level 3	Played junior CAG cricket for the organisation before gaining employment as a coach. Has progressed internally into current role	10	5	County cricket club 'Academy' and EPP
Steve	ECB level 3	Played junior CAG cricket for the organisation before gaining employment as a coach. Has progressed internally into current role	12	5	County cricket board EPP
James	ECB level 3	Played junior CAG cricket for the organisation before gaining employment as a coach. Has progressed internally into current role	14	7	County cricket board EPP

4.2.3 Data Collection Procedure

4.2.3.1 Phase 1: Semi-Structured Interviews supported by observations and field notes

The initial phase of data collection took the form of a single, semi-structured interview *(n=5)* after gaining informed consent (see Appendix 2). Interviews lasted between 55 and 90 minutes *(mean duration = 72 minutes)* and were recorded using a Dictaphone for later transcription. Interview approaches included both face to face (*n=4)* and telephone (*n=1)* options, as is becoming common in wider coaching related research (e.g., Blackett, Evans, & Piggott, 2018; Downham & Cushion, 2020; Watts & Cushion, 2017). This entailed purposeful conversations where the researcher gathered information about the perspectives, thoughts and feelings of the participants (Holloway, 1997). In order to contextualise the interview, the researcher observed a coaching practice episode of each participant. During the observation, the researcher took field notes. The field notes re-visited in the interview and acted as a tangible prompt for the researcher. Example field notes can be seen below in Figures 4.1, 4.2 and 4.3.

Observations were chosen as part of the data collection method to allow researchers to record the 'mundane and unremarkable' features of everyday life which may be missed by interviews (Sparkes & Smith, 2014). An example of this would be the

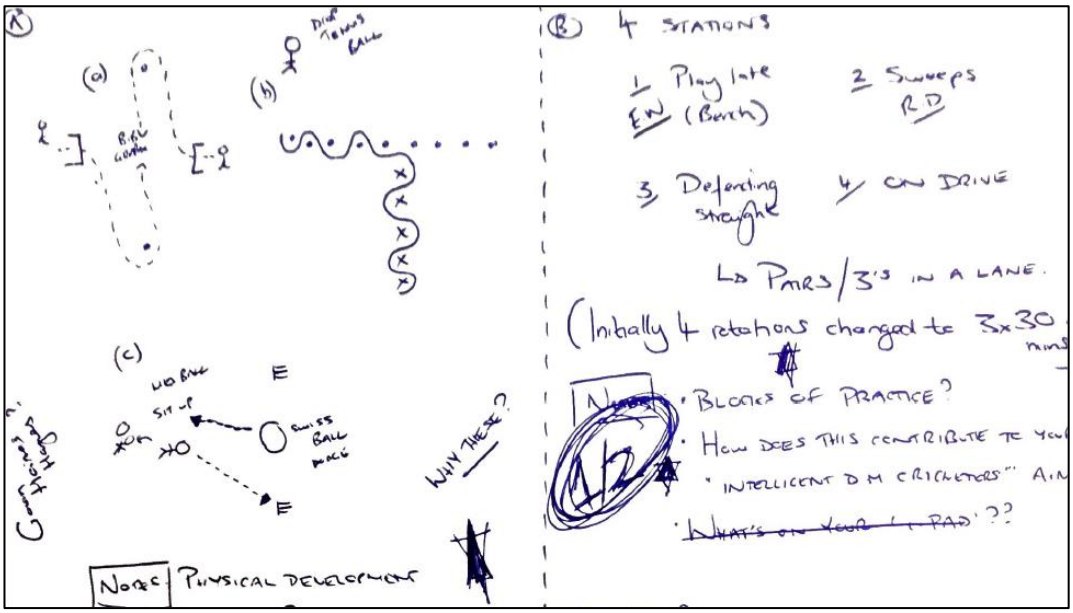


Figure 4.1 Example field notes when observing a session by Richard

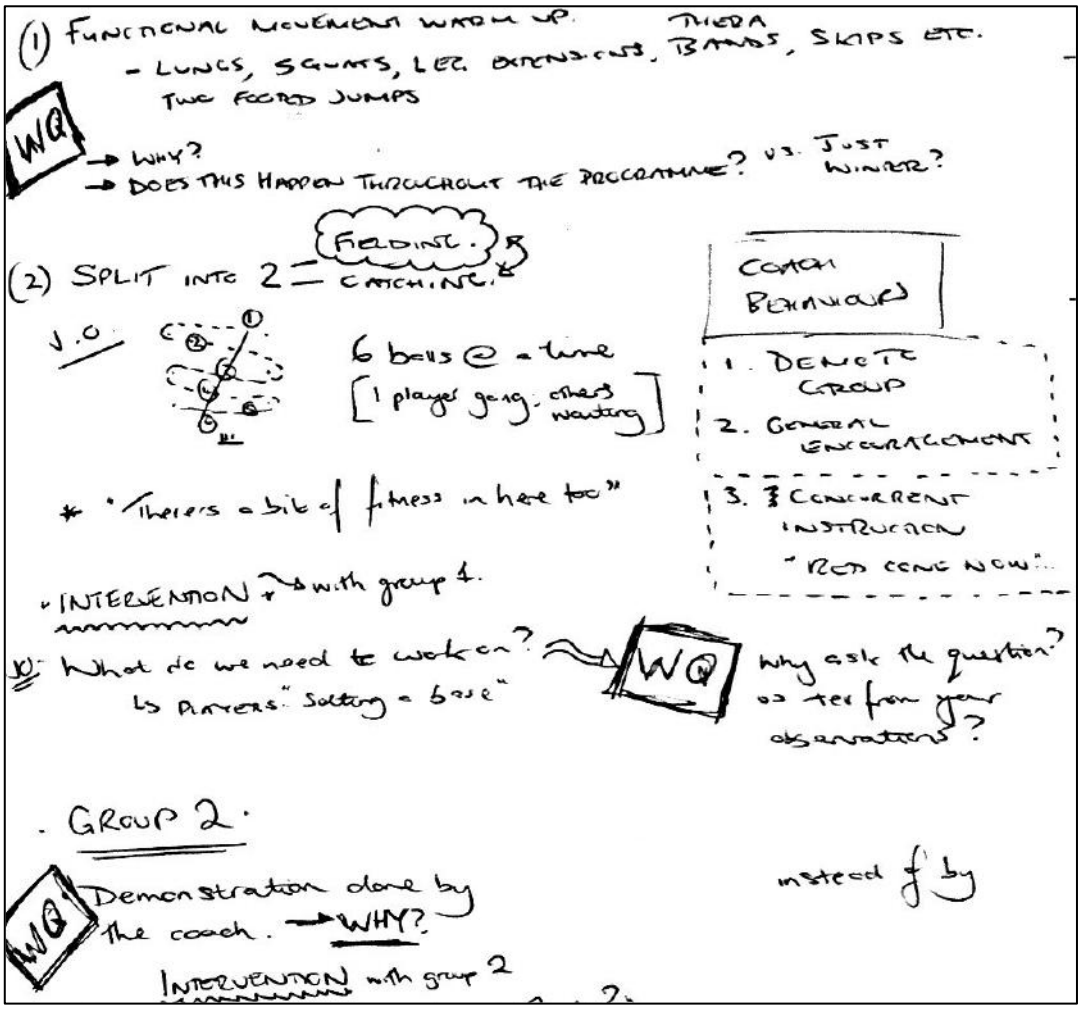


Figure 4.2 Example field notes when observing a session by James

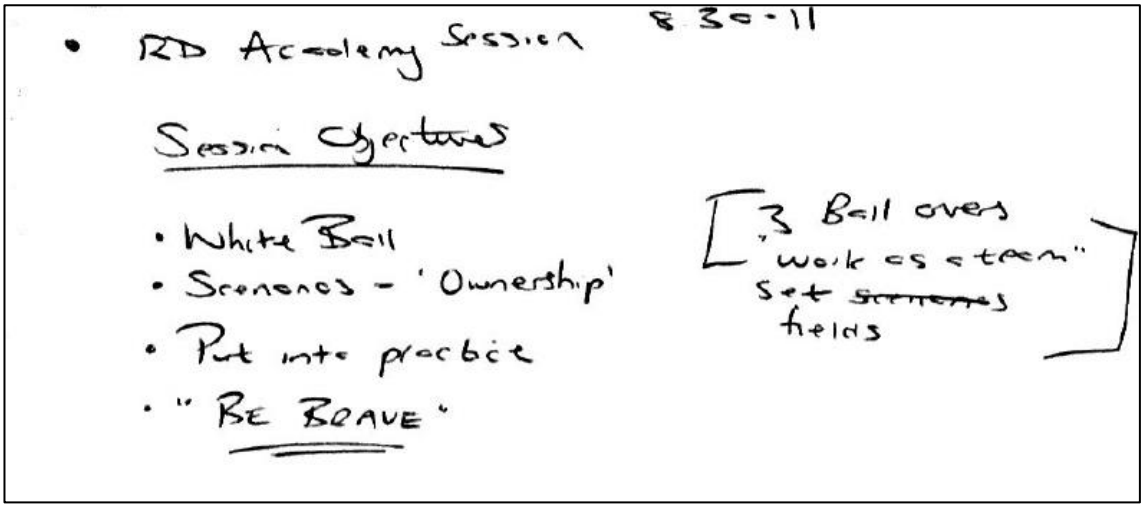


Figure 4.3 Example field notes when observing a session by Rob

coach having a 'quiet word' with a player whilst walking from the pitch to the lunch-room. Observations also provided researchers with a look at 'the whole picture', gave an insight into the relationships between groups and provided an increased level of contextual understanding (Mulhall, 2003; Sparkes & Smith, 2014).

Observations in this study were naturalistic (Mulhall, 2003). Whilst as previously identified, the researcher is not blank canvas due to the host of experiences and knowledge they bring to the process [see 3.3.2.1, chapter 3] there were no pre-determined behaviours that were under the spotlight (Anguera, 2003; Mulhall, 2003). Ultimately, observations were more inductive in nature. From a practical view, the starting point of the field notes above (i.e., Figures 4.1, 4.2 and 4.3) were blank sheets of paper.

As a final note, the observations took place within the coaches *usual* coaching context and as a result, the context of these observations were unique. The *uniqueness* extended to aspects such as geographical location, number of players in the session, duration of the session and objectives being delivered. Observations were undertaken as 'observer as participant' (Gold, 1958). I.e. there was minimal (no) involvement from the

researcher yet those in the environment made aware of the small connection behind the researchers' presence (e.g. "Matt is a cricket coach...").

In addressing the use of interviews, semi-structured interviews are a well-accepted qualitative approach when working with coaches. Given the particular knowledge and experience of the participants involved, it was hoped a semi-structured interview approach would allow participants to lead and pursue conversations around aspects they felt were most pertinent (Adams, 2015). It was also envisaged that this knowledge and experience would help to overcome interviewer bias.

Time was taken in the initial interview to explore, in detail the coaching context the participants were working in, including higher order organisational goals. Example questions in this phase included; *'What are the aims of xxxxx'*; *'What are the aims of your particular part of xxxxx* (the organisation)?' and *'What are the more specific aims associated with your current coaching role?'* Understanding the organisational goals and higher order socio-political pressures of the context allowed a further level of nuance in attempting to understand why coaches do what they do.

As the interview continued, there was an increased focus on the micro-level approaches used by the coach with questions being structured in such a way to elicit truly open-ended responses from the participants (Patton, 2002). Example questions here that addressed the objectives of the coaching episode, such as; '*What were you working on in todays session?'* with supporting prompts, e.g. '*How did you decide this?'* Finally, interviews continued and explicitly focused on why coaches did what they did. Example questions here included; *'I observed that you….why did you do that?'* with supporting prompts such as '*What were you trying to achieve with the player(s) when you did that?'* and *'What alternative strategies did you consider before you did that?'* For a full overview of the interview, refer to appendix 3.

Interviews took place at the same location as the observation, often in a quiet location (e.g. empty meeting room, vacant office etc.) which was pre-agreed between the researcher and participants (Tausch & Menold, 2016). Interviews took place face to face, within twenty-four hours of the observed coaching practice delivered by participants. On one occasion, a face to face interviews was not possible. As a result, the interview for this participant took place over the phone. Table 4.2 (below) details the type of activities which were observed, and the location of the interviews.

Table 4.2 *An overview of cricket activity observed and location of participant interviews*

Participant	**Type of activity observed prior to semi-structured interview**	**Semi-structured interview details**
Rob	Academy 'squad morning', outdoors, based at a local cricket ground. Cricket activity included player nets and coach-led fielding activity	In person; vacant bar area – no one else present
Evan	Academy squad (plus 2nd team senior players) pre-season day, outdoors at the recognised county 'out-ground'. Cricket activity included passages of open game play, 1:1 batting sessions in nets and coach-led fielding activity	In person; vacant bar area – no one else present
Richard	EPP training session, indoors based at the counties *usual* training facility (a local independent school sports centre). Cricket activity included batting 'drills', coach-led fielding and player net practices	In person; vacant (closed) café area within facility – no one else present
Steve	1:1 sessions with 2 EPP players, indoors, at the county cricket ground. Sessions were batting focused based on players' individual needs.	In person; In the empty training space post-session – no one else present.
James	EPP squad session, indoor session based at a modern high school sports hall. Cricket activity included coach-led fielding, 1:1 technical sessions with players (batting and bowling)	Via phone the following day (i.e. within 24 hours)

4.2.3.2 Phase 2: Re-visiting Participants

Data collection also consisted of follow up, 're-visit' interviews (*total n = 18)* across the five coaches. Follow up interviews lasted between 42 and 130 minutes *(mean duration = 75 minutes).* This re-visit approach is common within the wider sports coaching

research. Examples include the work of Sarkar and Hilton (2020) with swimming coaches, Leeder, Russell, and Beaumont (2019) with coach mentors and Downham and Cushion (2020) with coach developers. These follow up interviews took place across an extended period of twelve months. The benefits of this approach allowed the researcher to follow any developments (i.e. changes) of coaches approaches over time. This is a key rationale for any research that integrates a longitudinal aspect, given that a key construct of such work is often focused on how people change (Corden & Millar, 2007).

Given the repeated nature of the interviews across the study, it is important here to note how the interviews developed. As participants were re-visited, aspects of the initial interview, such as organisational goals were briefly reviewed (e.g. '*last time we spoke, you suggested that…to what extent has this changed?'*). After doing so, the interview continued to once again explore the observed coaching episode, and surrounding aspects in relation to the reasons why the coach did, what they did.

As a result of re-visiting participants and the ongoing rapport built between researcher and participant, observations of coaches in practice remained where possible (*n=13)*. This enabled the researcher to continue to develop an increased level of understanding of the contextual details of the individuals' cricket coaching contexts and the individual characteristics of the coaches (Holland, Thomson, & Henderson, 2006). This was also deemed beneficial (and somewhat of a perk!) given with the personal and professional aims of the thesis [see 3.2, chapter 3].

One drawback of this aspect was the interrupted nature (Caruana, Roman, Hernández-Sánchez, & Solli, 2015) of the follow up observations of certain individuals. This was often a result of the coaches' context, where job roles and responsibilities lead to participants being flexible at varying times of the cricket calendar to meet the demands of their employers. A common example of this was coaches being re-deployed to undertake stand-in roles with the FCC (i.e., professional) team. Importantly here too,

as a result of the seasonal nature of the sport, there were times where there was simply no cricket related activity happening. Table 4.3 (below) provides readers with an overview of the re-visit data collection points of the participants across the duration of the study.

Table 4.3 *Overviews of participant data collection points*

Coach: Rob	When	Data Collection Method
Data Point 2	July (in-season)	In person observation and immediate follow up interview
Data Point 3	August (in-season)	In person observation and immediate follow up interview
Data Point 4	January (off-season)	In person observation and immediate follow up interview
Data Point 5	February (off-season)	Reflective telephone interview
Coach: Evan	When	Data Collection Method
Data Point 2	July (in-season)	Interview followed by observation. Brief follow up telephone interview
Data Point 3	September (in-season)	In person observation and immediate follow up interview
Data Point 4	January (pre-season)	In person observation and immediate follow up interview
Data Point 5	March (pre-season)	In person observation and follow up telephone interview 24 hours after
Coach: Richard	When	Data Collection Method
Data Point 2	September (in-season)	In person reflective interview
Data Point 3	January (pre-season)	In person observation and immediate follow up interview
Data Point 4	March (pre-season)	In person observation and immediate follow up interview
Data Point 5	June (in-season)	In person observation and immediate follow up interview
Coach: Steve	When	Data Collection Method
Data Point 2	October (off-season)	Reflective telephone interview
Data Point 3	February (Pre-Season)	In person observation and telephone interview 24 hours after
Coach: James	When	Data Collection Method
Data Point 2	February (pre-season)	In-person observation and follow up telephone interview 24 hours after
Data Point 3	May (in-season)	Reflective telephone interview
Data Point 4	July (in-season)	Reflective telephone interview
Data Point 5	August (off-season)	In person observation and immediate follow up interview

4.2.4 Data Analysis

As identified earlier in the thesis [see 3.3.2, chapter 3], RTA was used throughout the analysis process. Inductive and deductive analysis took place and included aspects of both semantic and latent coding (Braun et al., 2017). As a final point here, RTA was chosen given its acceptance as modern day analysis method and increasing use in this form of qualitative, longitudinal sports coaching research (e.g., Sarkar & Hilton, 2020).

4.2.5 Addressing Trustworthiness

Earlier sections of the thesis have outlined the philosophical approach to the thesis and as a result, the implications for addressing trustworthiness [see 3.3.3, chapter 3]. The approach to addressing trustworthiness follows the relative philosophical positioning of the thesis. In doing so, it is important to acknowledge the 'letting go' position that was taken (Sparkes, 1998, 2002; Sparkes & Smith, 2014). Fundamentally, there is no one magical set of criteria that makes the research *good*.

In reviewing a 'starting point' set of criteria proposed by B. Smith and Caddick (2012) the socially constructed trustworthiness criteria identified in this chapter were; i) substantive contribution ii) worthy topic iii) rich rigor iv) sincerity v) credibility. These macro level criteria were operationalised in a number of ways. Examples of micro-level strategies used by the researcher were i) a reflexive diary ii) observations in the field iii) extensive and flexible interview schedules iv) follow up interviews.

4.3 RESULTS

In presenting the analysis and in respect of the significant amount of data generated across the study, raw data clusters (*n=47)* were developed. These raw data clusters encapsulated commonalities across the mass volume of codes assigned through the initial coding process. As a result, lower order themes *(n=12)* were created and developed into four higher order themes. These higher order themes were; i) *Culture of the programme ii) Players creating their own knowledge and learning in white ball*

cricket iii) Knowledge and learning being passed down to players in red ball cricket iv) *Knowledge and Learning co-created.* Organising concepts underpinning the reflexive thematic analysis (i.e., Braun et al., 2019) were; i) Macro level organisational alignment ii) Coaching practice and pedagogy iii) Power relationships in the coaching process. In aiding readers understanding of the analysis process and being *transparent* (i.e., B. Smith et al., 2014) the following sub-section presents readers with an audit trail of the analysis process.

4.3.1 Presenting an audit trail

As a result of my significant involvement and influence on the reflexive thematic analysis that has taken place, it seems appropriate to indicate to readers how the analysis happened. As a result, what follows are examples of a number of the stages of the analysis process identified in Chapter 3.3.2.2 (Braun & Clarke, 2013). Initially, Table 4.4. overviews the initial coding phases (i.e., step 2 of 6; Braun & Clarke, 2013). Example transcript passages are presented, along with the initial code assigned. Table 4.4 also showcases for readers examples of how the codes from participant transcripts were grouped into relevant raw data clusters. Secondly, Table 4.5 outlines the development of the raw data clusters into themes (i.e., steps 3 and 4 of 6; Braun & Clarke, 2013). Finally, Table 4.6 outlines the full reflexive thematic analysis.

Table 4.4 *Examples of transcript coding and generation of a raw data cluster*

Transcript Extract (inc. coach)	Code Assigned	Raw Data Cluster
Like if there's guys who are fielding who are not going about it in the right way, hands in their pockets and just a bit not really bought into this, actually you might not be bought into this but for 20 minutes when you're fielding, pretend that you are because actually it just sucks the energy out of people if you're sat there and that sort of dictates where we're trying to go because we believe that is a recipe for us to be successful and that's one of the reasons why…because actually there aren't too many dickheads around, there aren't too many ego's around this place and if they are then they get moved on pretty quickly because they suck the life out of the place and we can't afford to do it (Evan)	Getting rid of dickheads	Culture and Tradition
we've got to be prepared to experiment with things, be open minded and get stuff wrong, get stuff right because it's the feedback that you're giving yourself, every single ball, every time we do something, what is that feedback that we're giving ourselves? Who's judging you? We're all judging, we know that, we get that but we're trying to create a non-judgemental, judgemental environment (Rob)	The environment being 'non-judgemental' and supportive of learning as opposed to short term performance	
Because we want the players to feel comfortable in what they do and be confident rather than be, oh this is the way you should do it, it then gives the players ownership (James)	Wanting players to feel comfortable	
Yeah that links massively into that, I want them to be able to come up to me and ask questions and (player) I built up a relationship over the last year, year and a half…actually he will come to me and ask me a question…I think building up that rapport and that relationship with players is very very important to get them, not on-side as such but to get them to respect the words that are coming out of your mouth would be my point of view on that one (Richard)	The importance of the coach-athlete relationship	

Table 4.5 *Development of raw data clusters into lower order themes*

Example Codes from Interview Transcripts	Example Raw Data Cluster	Lower Order Theme
Comfortable environment allowing honest I.D. of weaknesses (Evan) Getting rid of 'dickheads' (Evan) High expectations of players by the organisation (Rob) The environment being 'non-judgemental' and supportive of learning as opposed to short term performance (Rob) Wanting players to feel comfortable (James) The importance of the coach-athlete relationship (Richard) Developing the player and the person (Richard) Be the best you can be (Steve)	Culture and Tradition	Values of the Programme
Dedicating time 'for learning' (Steve) Maintaining a balance of performance vs. long term development (Richard) Encouraging players to be comfortable with getting things wrong (Rob) Re-framing success as learning (Rob) Importance of taking the positives as players (people) remember the negative stuff anyway (James) Giving players experiences in lots of different situations (James) Creating 'intentional learning' with the support of a coach (Evan) 'Exploring' happens before learning (Evan)	A Learning Environment	

Table 4.6 *An overview of the full reflexive thematic analysis*

Examples of Raw Data Clusters	Lower Order Themes	Higher Order Themes
Culture and Tradition Creating Challenge Technical learning in the winter Helping players 'feel good' An individual approach Player enjoyment/fun Players as decision makers Developing 'the basics' Physical Development A Learning Environment	Values of the programme	Culture of the programme
Bespoke Programmes Individual Timescales Player Transition	An Individualised Approach	
Players taking the lead Player Responsibility	Player Responsibility	
Coaches letting players figure out scenarios for themselves Putting players in difficult situations to enable them to learn Players need to figure it out in competition so need to in training too The importance of players 'finding a way'	Players need to 'figure it out'	Players creating their own knowledge and learning in white ball cricket
Creating situations for players to make decisions about their own practice Individual players responsible for getting something out of it After exploring new shots, players are responsible for their continued progress Players to pick out key learning that works for them	Players have the responsibility	
Players learning through trial and error Coach letting players play Exposing players to new skills and letting them 'have a go'	Players learning by 'having a go'	
Learning coming from the players rather than the coach	Reducing coach input	

Asking questions might take a lot longer to help players learn but this is 'better' Trying to reduce coach input to encourage player learning		
Players needing/wanting coach input Players will come to coaches when they are struggling Players want more structure from the management Good players are the ones who listen	Players wanting/needing coaches	Knowledge and learning being passed down to players in red ball cricket
Times where coaches prescribe technique to players Use of sports science to identify the 'right way' Coach instructing based on the demands on the next phase of the pathway Giving players a base technique to develop into their own as they get older	Coach giving technical solutions	
Using experts (recently retired players) to deliver/explore skill sets Using professional players as a reference points Using the expert with real world experience to drive the 'model'	Using experts in the coaching process	
Framework given by the coach but player(s) to figure it out along the way Players leading on the assessment of coach-generated aims/targets Coaches and players engaging in reflective, two-way conversations after games Players encouraged to lead the conversations with coaches	Collaborative coach–player approach	Knowledge and Learning co-created
Sharing between expert and novice More experienced players are more likely/willing to challenge the views of an expert Nobody has all the answers – it's about willingness to ask for help	Expert–novice sharing	

The following sections offer a more detailed discussion of each of the higher order themes and in bringing the work to life, are supported by a range of key quotes from participants. Finally, the chapter concludes with an identification of the implications of the study and presents readers with an epistemological basis for red and white ball cricket for the first time in the thesis. Participants have been given pseudonyms to maintain anonymity.

4.3.2 Culture of the programme

This theme was made up of three lower order themes which were the result of fifteen raw data clusters. The contributing lower order themes were; i) values of the programme ii) an individualised approach iii) player responsibility. This section continues to explore these themes in more detail, with the support of relevant participant quotes.

Throughout the interview process, coaches discussed the *values of the programme* they were involved in. It has been suggested that performance development environments can be characterised by longer-term objectives, a stable player group and extensive intervention and interpersonal contact (Lyle & Cushion, 2016). As a result, it seems relevant and appropriate that coaches were attempting to address and create a longer-term vision and culture associated with their programmes. This higher order theme (i.e., culture of the programme) was constructed as a result of coaches outlining the more macro-level aims and outcomes associated with their roles. As a prime example, Evan and Rob referred to how they wanted to create a culture where it was acceptable to have weaknesses and get things wrong in order to give players the best chance of succeeding in the long run. In this instance Evan states:

> It's about creating that environment where that anxiety to start with around the fact that they blatantly…can't do something and it might be a very simple… to start with we'd try and remove all that anxiety and say right it isn't a problem we just need to spend some time doing it for you to get better at it.

Likewise, Rob referred to creating an environment where players are helped to show *what they can do* as opposed to being inhibited by the worry of getting things wrong.

> …it's about providing that opportunity to succeed isn't it, and providing that opportunity to sometimes fail…there will be enough opportunities so that they can express themselves and do the best that they can and we get a true reflection of them instead of a shadow of what they are capable of doing because they are inhibited. That's probably the big thing that we want to lose that inhibition or I'm scared to get this wrong.

The creation of this kind of culture, where players know it's ok not to have all the answers but are helped to find them, contributes significantly to how players view and ultimately attempt to overcome challenge. It has long been suggested that the manner in which players view and deal with challenge can both spur on or hinder the trajectory of their development pathway (Ollis, Macpherson, & Collins, 2006). In fact, the ways in which challenges are perceived and approached by athletes has been proposed as a discriminating factor between those who are the most successful in their sports, and their counterparts who *almost* made it (D. Collins, MacNamara, & McCarthy, 2016). That coaches are attempting to reduce players' anxiety around the challenges they are facing is viewed positively.

As a final thought on this matter, in the extract above, Rob refers to providing opportunities for players under his supervision to fail. Exposing players to this, pre-planned, (high-level of) challenge (referred to in the literature as *trauma*) has a number of associated benefits for developing players, not least that if players are able to generate methods to deal with an overcome small setbacks (e.g., developing determination and goal setting as a result of repeatedly failing to grasp a new skill), players may well become better equipped at dealing with more major setbacks (e.g. suffering injury and/or being de-selected and using determination and goal setting strategies to regain selection) (D. Collins & MacNamara, 2012).

A second lower order theme that was acknowledged was that, where possible, coaches were trying to create an *individualised approach* to programmes. This was often in relation to coaches working towards the macro goals associated with their roles, that of developing players ready to represent teams competing at a higher level. Evan discussed how the

academy programme is created as a result of the individual players selected on it, as opposed to it prescribed (or pre-set) programme that players attend.

> the programme can be quite flexible in terms of what it looks like and how we deliver it but it almost has to be, I almost have to tailor it and put guys into the programme around what they need so they get what they need rather than this is our programme where do you fit into that?

Taking this approach, where the emphasis is on the learner and the learning that is taking place as opposed to what the coach does and/or wants to do (Weimer, 2002), avoids a generic, one size fits all approach and increases the likelihood of-authentic and meaningful learning experiences for developing players (Kirk & MacPhail, 2002).

The final lower order theme that was developed was that ultimately coaches wanted to enable *player responsibility*. This theme was relevant on both a macro and micro level. When outlining who has responsibility within a coaching session to ensure that a player 'gets something out of it', James recognised the quality of the coach and the role of the inquisitive player:

> I think at times that depends on the quality of the coach…but I also think that if a player is a good player they have to want to get better, its them asking questions trying to better themselves, so it's not all the time just on the coach. I think at times it is the players themselves, who should be trying to help themselves to get better, not just be reliant on the coach to make them or help them get better.

Steve also agreed on this area, outlining:

> Well ultimately it's their game and the ownership is on them…it's their game, they must take responsibility for it because ultimately they're the ones out in the middle…hopefully (player) is going to go out and play and then come back to me and say, this has worked really really well, this has, this has but *(this hasn't)* and you can start to work on it from there.

This response reinforces the role of the player within the coaching process and the importance of the coach enabling this. This co-orientation (Jowett & Cockerill, 2003) (i.e., sharing of the coaching process) has been reported in previous research exploring Olympians views of the coach-athlete relationship. As one participant within the Jowett and Cockerill (2003) research outlines, "the positive points of our partnership were that we negotiated and

communicated effectively and in that way we set joint goals. We knew exactly what we wanted to achieve and what we needed to do in order to achieve these goals" (p.323). What is noticeable is consistent use of 'we' and the considered integration of both the coach and the athlete within the decision making/coaching process.

Rob also pointed out how this looks on a day-to-day basis at the micro level. He described a coaching session where players were pre-empted via a text message to take responsibility for their 1:1 training session(s) taking place that evening:

> So I sent a text out to the lads saying, bearing in mind the conversations that we've had in previous weeks, come with an idea of what you NEED, in capital letters to work on tonight, the RATIONALE in capital letters behind it and the METHOD in capital letters as to how you want to do that. So I wanted them to come with an idea of this is what I want to do and this is the reason why, this is how I think I want to start doing that.

This subsection has attempted to present what coaches are doing to construct the culture of their programmes. Clearly this is a worthy starting point prior to addressing how coaches are approaching the learning process. What is noticeable is that these three interlinked areas (reinforcing macro level values, an individual approach and developing player responsibility) appear to be focused on the psycho-social development of players. The data shows the coaches positive focus of developing these skills, such as self-regulation (i.e., planning how they want to improve; Glaser & Chi, 1988). This is interesting given that it differs to focusing on more traditional physical and anthropometric characteristics of performance which are still rife with performance development programmes (MacNamara & Collins, 2012). Ultimately, developing these skills will help players to maintain their involvement in the sport in the face of challenge and failures they are almost certain to face (Lohman, 1999). The next steps are to increase the focus on coaches' approaches 'on the floor', when working with their players in practice.

4.3.3 How is learning happening?

Having explored the overarching culture that coaches are trying to create as part of their programmes, this section explores more deeply the approaches that coaches are taking with their players in practice. Specifically, the following sub-sections increase the focus on the learning process alongside an explicit identification of the format of the game in question.

4.3.3.1 Players creating their own knowledge and learning in white ball cricket

This higher order theme included fourteen raw data clusters which were grouped into four lower order themes. These were; i) players need to 'figure it out' ii) players have the responsibility iii) players learning by 'having a go iv) reducing coach input.

As an almost exclusively white ball practice, coaches discussed how it was important that their players were at the forefront of the learning process. As an example of this self-directed approach, coaches outlined how in relation to tactical and technical learning, practices were set up whereby, *players needed to 'figure it out'.* For example, James outlined a training activity with specified contextual information relating to the state of a hypothetical game. The following quote represents a realistic but purposefully nonpressurised context where players were required, as a stepping-stone towards competition play, to independently complete a batting task.

> The [training] scenario that we did a couple of weeks ago…the team was seventy for two after twenty, twenty-five overs in a 40 over game and you're chasing 150, that's the target. There wasn't really anything else from us in terms of well you need to do this, you need to do that, it was right, there you go…that's your target, you've got to try and chase your target down.

James also referred to the cognitive demands associated with players figuring it out. In this instance when responding directly to a question in relation to how players learn new skills, he discusses a situation whereby players, using coaches as a support mechanism, were encouraged to spend time reflecting, both immediately and sometime after the event, on the skills that were being learnt.

> I suppose trying things and coaches suggesting different things. I suppose coaches spotting things that might work, or might work better and suggesting it, giving the player the opportunity to try it, to think about it, go away and have a think. . . that kind of thing.

Finally, Rob explained an initial approach when working with a player who was transitioning from academy to national age group level. As part of an informal assessment the coach was interested in this players ability to adapt their skills and knowledge to a new context, that of opening the batting in white ball cricket. To meet this purpose, Rob described a shared conversation with the player, prior to the activity, to understand the players intended approach:

> We talked about it because he'd played super 4's last summer, so over the winter, 'right it's going to be white ball, we need to go hard first 10 overs with the bat, what do *you* [added emphasis] think?' So our first session around that was I'm just going to feed it at 75mph, hit top of off, off you go and see how you get on.

Much has been made in the recent literature regarding the move towards increasingly dynamic and non-linear approaches to coaching. Examples from the literature include Game-Based Approaches (GBA; Kinnerk, Harvey, MacDonncha, & Lyons, 2018), Constraints-Based Approaches (CBA; Renshaw, Davids, Newcombe, & Roberts, 2019) and Non-Linear Pedagogy (NLP; Chow, Davids, Button, & Renshaw, 2016). The positives of these approaches, which are informed by increasingly constructivist approaches to learning are that they provide opportunities for players to consistently create solutions to the problems they face (Renshaw, Chow, Davids, & Hammond, 2010). To note, problems that are specifically designed by the coach! It is also suggested that these approaches encourage players to develop dynamic and flexible, as opposed to increasingly rigid technique (Chow et al., 2016).

The two examples above from James and Rob clearly outline coaches' use of a constructivist approach and more specifically the Zone of Proximal Development (ZPD; Vygotsky, 1978). The coaches use scaffolding here, i.e. creating a supportive structure

(including the support of the coach), which players are able to 'lean on' during the practice, in order to develop strategies to negotiate the challenge laid out for them (Vygotsky, 1978).

Another aspect of players creating their own knowledge and learning was the notion that *players have the responsibility* in the process. It is important to acknowledge the distinguishing factors of this aspect when compared with the earlier theme of '*developing player responsibility'*. The current theme is related to players having an increased level of autonomy over the specific cricket skills they wanted to incorporate and develop as part of their repertoire (i.e., micro level). The previous theme attempted to acknowledge that players bore some aspect of responsibility for the success or not, of their overall development (i.e., macro level).

As a practical example of *players have the responsibility* comes when Evan is discussing the delivery of a white ball coaching session based around different ways to score runs. The coach describes a session which included the explicit identification, by the coach, of a number of approaches and encouraging players to choose, on an individual basis, the batting skill version to practice that they (the player) thought was most beneficial to their performance. As Evan highlighted below:

> We went through 8 or 9 different options to the same delivery in white ball cricket against a left-arm spinner running the ball into the batter. So this is what you could do now, you've been exposed to it, seen it, if you take it on and maybe look at spending more time with each individual option that works for you.

Likewise but this time addressing variations in bowling skill, James articulates the necessity for players to take responsibility regarding the technical and tactical deployment of skills: "rather than say, this is a slower ball, you must be able to do this, this is when you're going to use it [we] let them learn and take ownership of that".

Other than the previously cognitive and social aspects of players creating learning, coaches emphasised the physical nature of this experience. Reflecting the notion of *players learning by 'having a go',* Rob explained an acceptance, and in fact desire, for errors to be

apparent within the development process. When discussing the approach taken to developing the skills of the next generation of white ball cricketers for their professional environment, Rob outlines: “I want you to be more skilful, I want you to try things, I want you to get stuff wrong, I want him to experiment otherwise where’s our next white ball cricketers coming from?” This idea was supported by Steve. Interestingly, in this instance, Steve further increased the focus on players failing as part of the learning process:

> they have to try it and they have to get it wrong now what situation that’s in varies…It depends on your player but you need to try it, you need to, there needs to be an element of failure there I think, you need to get it wrong

In linking to recent literature within skill acquisition, the role of ‘failure’ and getting things wrong is well documented. In fact, Lohse, Miller, Bacelar, and Krigolson (2019) suggest that errors should be maximised and more specifically but errors should not be too predictable. Put practically, players should not enter into a given activity knowing that they are repeatedly and unequivocally going to fail over and over again. For those wanting more detail on what the authors term *reward prediction*, readers are referred to Lohse et al. (2019).

Extending the premise of players *having a go,* James emphasised the importance of players not only having a go within coaching sessions but the value and significance of spending time practicing skills away from the session (i.e., an informal setting). The quote below refers to James outlining a practice schedule when developing bowling skill variation.

> In terms of slower balls, potentially suggesting two or three ways that you could potentially bowl a slower ball and then giving them, 10-15 minutes, 20 minutes in the actual session to practice a slower ball and which one may be more comfortable for them than the others and then tell them to go away and try to practice that [skill] as much as possible.

This learning *‘by having a go’* reflects previous research into the development of player expertise. It’s well known that those who reach expertise spend more time practicing than their non-expert peers (J. Baker, Côté, & Abernethy, 2003). More specifically, these expert

players spent more time practicing ‘alone’ (i.e., outside of the coaching session) than their non-expert peers (J. Baker et al., 2003).

Finally, the idea of *reducing coach input* emerged as a key construct in players creating their own knowledge and learning in white ball cricket. Building from the perceived strength of the coach-athlete relationship, coaches felt comfortable in taking a more hands-off approach to their involvement in player development at times. As an example, Richard explains an expressed understanding of expectations from players with regards to the general coaching approach within the academy: “I think it’s very much how I operate. (*At)* Academy level they understand the process, they understand me, they understand hang on a minute, I’m not going to give you the answers, you have to work”.

In a second supporting example, Evan outlines a micro-level coaching practice when working with a batter, that promoted an increased level of self-awareness. When working with their players around technical developments in batting, the coach attempted to switch the feedback mechanism from a ‘coach to player model’ towards a self-reflective model driven by the player. In order to do so, the coach creates a coaching practice based on the player self-assessing the outcomes of their performance:

> I use it a lot, so that actually does most of the coaching themselves so you’re learning a technical skill, some sort of scoring system like that around technical proficiency does most of the coaching for you so in terms of when we’re doing work with the lads working on the front foot, movements into the ball and so actually if you’re there and you get into the ball and you drive the ball and you’re there and you think actually I couldn’t have got any further forward it’s a 0 and then working that actually yeah I got stuck on the crease there, no feet whatsoever it’s a 3. 0, 1, 2, 3…I make myself redundant because they know what good feels like, they don’t need me to tell them that it feels good actually they’ve got that.

What has become clear as a result of this section is coaches attempts to use increasingly constructivist approaches to coaching in white ball cricket. In referring back to the final example above, the move towards a player-led, reflective model of feedback reinforces this concept.

Of note to readers should also be the clear level of alignment between coaches approaches in white ball cricket and the *culture of the programme* identified at the outset of the results section. Through their white ball coaching approaches coaches are aligning to the *values* of their programmes and creating *individual* space for players to be *responsible*. Having explored coaches approaches to learning in white ball cricket, the following section takes a turn and addresses coaches approaches to learning when coaching red ball cricket.

4.3.3.2 Knowledge and learning being passed down to players in red ball cricket

The idea that knowledge and learning was passed down to players in red ball cricket was constructed as a result of the creation of eleven raw data clusters, leading to three lower order themes. These were; i) players wanting/needing coaches ii) coach giving technical solutions iii) using experts in the coaching process. The work that follows explores these ideas in more detail.

In stark contrast to players creating their own knowledge and learning in white ball cricket, coaches identified a number of different aspects where players were the 'recipients' of learning and knowledge. In these instances, it was most common that coaches were discussing the coaching of red ball cricket. The first area outlined was that in fact, *players wanted and needed coaches* in order for this learning to take place. Rob uses the example of a skilled red ball batter to highlight how players will seek out coaches when they are struggling. He suggests, "I think they'll come to you because again going back to that example with (player), he's struggling against spin…I'm really struggling can you help me?".

In attempting to add more detail in this area, Evan appears to indicate that at times it can be those players who are less experienced (in this context) who will seek out coaches. Adding to the idea presented above that players require technical support from coaches, the extract below suggests players want and need psychological support from coaches to increase their confidence.

> I suppose his feel for batting is a lot less mature than his feel for bowling so he needs, he's looking for someone to give him some confidence, he just wants a bit of reinforcement, I mean [he's asking himself] 'I feel alright does it actually look alright?'

It is perhaps not surprising that players wanted (and perhaps expected) coaches to provide solutions. After all, in referring to the previously acknowledged definitions of sports coaching [see 1.1.2, chapter 1] these definitions include terms such as *guided improvemen*t, *led by the coach* (i.e., ECC, 2007) and *the consistent application of (knowledge)* (Côté & Gilbert, 2009). This terminology appears to implicitly place the coach at the forefront of the process, and hence someone who is involved in creating solutions.

There are also relevant links here to participants' previous experiences of coaching, most commonly in preceding coaching contexts such as PPW [see 1.1.3, chapter 1]. These previous experiences of coaches, who are often involved in positively reinforcing motivations to take part in sport such as improved perceptions of competence, fun and enjoyment and learning new skills (Bailey, Cope, & Pearce, 2013) may directly influence players perceptions of what their coaches in the developing athletes context, should do. Interestingly however, simply because players may desire these approaches from coaches, is not to say that this is the approach that coaches should take.

The *coach giving technical solutions* was also a theme in this section. When discussing the needs of a batter in red ball cricket to be able to play a short-pitched ball, Evan discussed how they went about 'equipping' the player with the requisite skills as a result of using a skill de-composition approach:

> he knows he needs to be able to play off the back foot against seam bowling because he's going to get bounced every time and he's learnt how to pull over the winter…we've just reverse chained that from right, tennis balls, end position, pull, pull, pull to bowling machine, know where it's going to be, start outside the line of the body because that's a bit more comfortable, pull, pull, pull then working on the line of the body because that's a little bit more uncomfortable because when he gets it in the ribs we don't like it to then flicking with an incredi-ball so it was a bit more variable but he could (have) confidence that actually if he got it wrong it was an incredi-ball not a cricket ball so those sorts of things so he's gone through a process of

> real breaking it down to start with to its simplest form…to just ramping that up over the period of a winter.

What is noticeable from Evan here is the certainty of knowledge that the player 'needs' in relation to red ball cricket. The technical solution (known as 'the pull shot') has clearly been identified as 'the right' solution, with coaching approaches used to explicitly allow the player to process the required knowledge in a step-by-step manner (i.e. reverse chaining).

Finally, it became apparent that in many aspects of red ball cricket, there was an accepted use of discipline specific 'experts' to work with players. This theme, *using experts in the coaching process* again positions the expert as the knowledge holder and the player as the more novice learner. Rob outlines the use of former international players as an example of this process, working with players who are developing their batting skills against spin bowling:

> we'd just try and expand and expand his boundaries a little bit and what he's capable of, then bring in some experts, so *(former international captain)*, we got him on board and (*former international player)* who both played spin really well…and they spent time and it's just a case of reinforcing that.

What has become apparent is coaches' use of increasingly dualistic and epistemologically naïve approaches to coaching within red ball cricket. What is of interest is that coaches perceive there to be an increased amount of 'correctness' or 'right ways' in which to approach skills required in red ball cricket. These views ultimately lead to increasingly behaviourist approaches where, 'if players see *this*, they should do '*that'* (i.e., Carlson & Buckist, 1997). The examples shared by the coaches above have a clear focus on the actions that players should perform, with a clear link to the epistemological dimensions concerned with the validity and source of knowledge (i.e., Omniscient Authority) and the certainty of knowledge.

Importantly, the premise here is not to suggest that coaches should not provide solutions for players, nor should they enlist the help of international players as role models.

What is fascinating and of note to readers is that these approaches seem to come to the fore when coaches have a red cricket ball in their hands!

Given the previous two sections have positioned coaches' approaches directly in relation to the format of the game being coached, the final section of results discusses examples of coaches' more 'generalised' approaches to coaching, irrespective of the format of the game.

4.3.3.3 Knowledge and learning co-created.

This theme had two underpinning lower order themes; i) collaborative coach-player approach ii) expert-novice sharing. These themes were developed as a result of seven raw data clusters.

Of interest is the extent to which this theme aligns to the area of players creating their own learning. The difference appears to be that there is a level of support offered for the player in generating and consolidating ideas: For example, in relation to a c*ollaborative coach-player approach,* James outlines a micro-example of his coaching process when working with a batter to explore a particular attacking shot:

> I wouldn't necessarily say this is the way to do it, to play it but having seen you play it maybe 2 or 3 different ways, I would ask you to play it maybe off the front foot, off the back foot, on the knee up swivel and I would probably, having looked at that I would then go you look more comfortable doing it this way, how does it feel to you as the player, trying to get some feedback from them.

This is then reinforced by Rob who attempts to summarise this process. The coach has made a number of in-performance observations and has information to give to the player. Ultimately however the decision regarding what to do with this information rests with the player:

> I've probably just got to mention something here but then when you do, you know you're going to be filling his head… all I've tried to do is raise his awareness (of) that, you tell me mate you're batting, you tell me.

It was also discussed how the programme structures opportunities for developing players to train and interact with the professional players and as a result, e*xpert-novice sharing* appears

to help support the development of the up and coming players. Evan outlines how this looks in his environment:

> Thursday nights you'll see the academy players training with the Pros so that sharing, academy players asking Pro's questions, sharing thoughts, advice and sharing their thoughts on what they see which is a wonderful thing for us to just sit back and let the coaching take place between the players so we just facilitate really.

What is apparent is coaches uses of increasingly social constructivist approaches in these instances. As the section heading suggests, the co-creation of learning was as a result of coaches placing an equal amount of importance on both the player and the coach (or in some instances, a senior player). This is a key aspect in the view that learning is multidirectional in nature (Lave & Wenger, 1991). Fundamentally, learners were an active and key part of the learning process (Newmann, 1994) with those supporting players genuinely interested in their input.

Having considered the data more fully, the following section identified the salient messages from the chapter and the repercussions of the findings in relation to future stages of the theses.

4.4 MAIN MESSAGES AND NEXT STEPS FOR THE THESIS

The aims of this chapter were to investigate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision in relation to red and white ball cricket (RO2). Secondly, to investigate the epistemological beliefs of coaches involved in coaching red and white ball cricket (RO3).

From the data analysis that has taken place, the higher order themes suggest the presence of significant differences in coaches approaches when working with their players in different formats of the game. Importantly, these findings are indicative of coaches holding different epistemological positions based on the format of the game being coached. In an attempt to offer a succinct overview, the results have been presented below in the form of an

adaptation of the epistemological framework offered by Grecic and Collins (2013) (as utilised in chapter 2) in an attempt to offer the practical applications of this chapter.

Table 4.7 *Epistemological positioning of coaching in red ball and white ball cricket*

Coaching in Red Ball cricket		**Coaching in White Ball cricket**
Increasingly naïve position on the spectrum	Epistemological positioning	Increasingly sophisticated position on the spectrum
Non-threatening and informal coach-led environment, clear rules/Key Performance Indicators (KPI) of how to 'play the game'	Environment	Supportive and informal collaborative environment – How do you play the game?
Mainly coach as lead	Relationship built	Majority player led
Goals based on what the format requires. Knowledge of what the format requires is identified by the coach and the macro-political structure	Goal setting	Goals based on real life situations players may face in games. Often negotiated and agreed by player and coach
Traditional closed practices, and relatively high volume of repetition in an attempt to create and repeat 'good technique' and competent players	Methods	Increasingly open and game related practices (**note:** not necessarily game based). Increasingly randomised practice with an emphasis on including player decision making within practice
Success based on technical development of players role specific skills	Judgements made	Success based on players increasing understanding of their role within the game and ability to interpret and apply individually appropriate solutions to the problems faced
Mostly identified by coach	Future direction	Developed collaboratively between coach and player

When coaching in red ball, multi-day formats, results firmly indicate that coaches engaged in more traditional, coach led practices. In relation to the epistemological dimension 'Omniscient Authority', coaches held an epistemological position held on the basis that learning and knowledge in this format was passed down from expert to novice (Schommer,

1994). That being, coaches viewed there to be one, unquestioned, black and white approach to coaching in red ball cricket (i.e., the epistemological dimension of 'certain knowledge'), compared to the approach identified resulting due to a critical weighing up of the options and a personally relevant solution being picked. Given the evidence presented, it strongly indicates that coaches are assuming there is one ideal form of technical execution that learners must strive to master when playing red ball cricket. This would once again reinforce the epistemological dimension of certain knowledge given there was a perceived 'right' and 'wrong' way. Interestingly however, these approaches have been challenged when applied directly to those involved in dynamic and interactive sports. The question then, is the appropriateness of focusing on players progression towards one, universal 'correct' technique, when players need to execute their skills in highly changeable contexts (Light, Harvey, & Mouchet, 2014). Finally, in relation to developing players' expertise, the positioning of coach as knowledgeable expert and player as novice appeared to develop 'competent' players (Epstein & Hundert, 2002). I.e., players who were capable of following instructions, as if putting together flat pack furniture, as opposed to players capable of creating solutions to performance problems.

In contrast, when coaching in white ball, single day formats, preliminary findings suggest coaches engaged in less traditional (i.e. less linear) coaching approaches, often driven and/or agreed by the player and the coach. In linking to the epistemological dimensions, coaches appeared to be operating at different ends of the spectrum in relation to 'Omniscient Authority' and the 'Certainty of Knowledge'. In often stark contrast, these approaches appeared to be aimed at developing player expertise (Epstein & Hundert, 2002). I.e., developing players capable of creating individualised solutions without a step-by-step guide on how to do so. Coaches were more regularly utilising both cognitive and social constructivist approaches in their coaching. From a cognitive constructivism perspective,

coaches were appreciating what their players 'brought to the table'. From a social constructivism perspective, coaches viewed learning as multidirectional, placed similar importance on the role of the coach and the player (Lave & Wenger, 1991) and made learners active in the process (Newmann, 1994).

As a result of such compelling findings, it is important to identify *what's next* for the thesis. Prior to doing so, the limitations of the current chapter, and how these were addressed, are presented below.

4.4.1 Limitations

As a final step of this chapter, this section acknowledges the key limitations of the research design. Two key limitations were identified. Firstly, the sample size consisting of five coaches. Secondly, the potential bias of the researcher.

In addressing the sample size of five coaches within the Chapter, the multiple data collection point strategy was developed as a means of maintaining the trustworthiness and rigor of the work, specifically substantive contribution, rich rigor and credibility (B. Smith et al., 2014). There are a number of recent studies in sports coaching that have also engaged in longitudinal processes, with small samples of coaches. Examples come from Watts and Cushion (2017) in their work with a sample of eight football coaches. Similarly, the work of Sarkar and Hilton (2020) in their study of resilience with a sample of five swimming coaches. There are also recent example of studies involving multiple data collection points (i.e., *re-visits*), including Taylor, Carson, and Collins (2018) work with talented twin athletes. Their work included six data collection points with a sample of four families, which ran across a twelve-month period. As a reminder for readers, the current chapter involved data collection points which included interviews (*n=23)* and observations *(n=18).*

It also pertinent here to address the underpinnings of why sample size can often be regarded as a limiting factor of the research process. It is often assumed that a large sample of

participants ensures that data reaches ‘saturation’. Saturation is the concept of the data set being exhausted and no new data ‘emerging’ (Braun et al., 2019). Whilst the concept of saturation is of relevance to those undertaking increasingly positivist research, saturation is not a concept associated with the philosophical underpinnings of a *Big Q* approach taken here (Braun et al., 2019; Kidder & Fine, 1987) [see 3.3.2.1, chapter 3] which culminated in the use of Reflexive Thematic Analysis (RTA). As Braun et al. (2019) suggest, saturation is a concepts better placed in line with alternative forms of Thematic Analysis (TA), such as coding-reliability (i.e., an approach with a *small q* underpinning).

Addressing a second limitation of potential researcher bias, Jorgensen (1989) suggests that “the researcher is an insider or an outsider to a greater of lesser degree” (p.55). I am placed as insider as a result of being a qualified cricket coach myself and having experienced working in similar environments to a number of the participants involved. There are a number of possible advantages of the researcher already being part of the group, sub-culture or wider profession. Examples include relatively easy access to the environment, groundwork for rapport and trust is already established and the research is relevant and useful to the researchers professional life (Sparkes & Smith, 2014). It should be noted that there are some potential downsides. One of the main concerns is that having previous experience within the same (or very similar) environments can lead to the researcher having pre-set expectations of what ‘should’ happen (Glesne, 1999), ultimately decreasing objectivity. As a deliberate strategy employed to avoid this, interviews began with the asking of a number of clarification questions. As previously identified, initial questions covered the coach’s organisation, specific role along with key aims and objectives of the role to avoid the researchers’ assumptions of what should be happening and better understand the pressures facing the coaches in *their* worlds.

4.4.2 Full steam ahead

The next steps for the thesis is to continue to increase the level of rich rigor, sincerity and credibility (B. Smith et al., 2014) associated with the current findings. In order to build upon the data captured in this chapter, continued engagement with appropriately qualified coaches working within the developing athlete context is recommended. Doing so would also continue to address the transparency of the research findings. Referring back to the pragmatic ambitions of the thesis [see 3.2, chapter 3], more comprehensively addressing the findings with a larger group of applied practitioners would be welcomed.

CHAPTER 5: WIDENING THE NET: A FOLLOW UP STUDY EXPLORING EPISTEMOLOGICAL POSITIONING IN A GROUP OF HIGH-LEVEL CRICKET COACHES

5.1 INTRODUCTION

The findings of the previous chapter strongly suggest that coaches hold different epistemological perspectives when coaching red and white ball cricket. More specifically, when coaching red ball cricket, coaches appear to hold increasingly naïve positions in relation to the validity and source of knowledge (i.e. Omniscient authority) and the certainty of knowledge. When coaching in white ball cricket however, coaches appear to hold increasingly sophisticated epistemological positions within the identified dimensions. These epistemological differences directly impact on coaches' micro-level practices with players as identified in Table 4.7 (Chapter 4). In order to more comprehensively explore the findings, the current study attempted to build on the significant findings of Chapter 4, namely that coaches appear to hold varying epistemological positions based on the format of the game and expand on this with a larger group of appropriately qualified coaches.

The opportunity was taken, linking with the pragmatic roots of the thesis [see 3.2, chapter 3] to deliver a coach education session to a group of high-level coaches. In doing so, the chapter continued to investigate and evaluate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision in relation to red and white ball cricket (RO2), whilst critically examining the epistemological beliefs of coaches involved in coaching red and white ball cricket (RO3).

5.2 METHOD

5.2.1 Research Design

In keeping with the interpretive approach of the thesis, a workshop approach was taken. In line with recommendations from Finch, Lewis, and Turley (2014), the workshop included a range of open discussions, specific tasks and plenaries. The workshop consisted of whole and

small group working and lasted for 75 minutes. In setting the scene for readers, the workshop approach was embedded within a 'course day' of the ECB Level 4 coaching qualification.

As an important point to note, the ECB Level 4 coaching qualification that coaches were enrolled on enabled coaches to choose one of two 'pathways'. This choice enables coaches to spend a small amount of allocated time across the two-and-a-half-year qualification, exploring contextual issues within their chosen area of specialism (i.e. each pathway spends time on relevant, specialist topics). Specifically, the two pathways are i) Leadership – aimed at those who aspire to not only coach but *lead* their organisations (e.g., directors of cricket) ii) Development – aimed at those who are specifically focused on working with players as they progress towards professional cricket (e.g., high performance coach). In being specific here, the workshop took place on the first day of the course for the coaches and as part of a 'core' session, for which both pathways attended. After some initial presentations from central ECB staff, the workshop ran from 11.30am – 12.45pm.

5.2.2 Participants

A criterion based, purposive sample of twelve male cricket coaches, aged 27 - 45 years old *(M_{age}* = 34 years, *SD* = 4.38) were recruited. Criteria for selection was (1) holding the NGB level 3 coaching qualification and working towards the level 4 qualification. This was identified as appropriate given the reflections on the qualifications and experiences of those participants in the previous chapter, (2) not having participated in the study in Chapter 4 (3) having a willingness to examine their own coaching practices with their peers.

5.2.3 Data Collection Procedure

The following section presents an overview of the approaches to data collection used. Figures are used throughout this section to enable readers to fully understand the methods employed.

5.2.3.1 The workshop structure

The workshop took place at a purpose-built conference centre. Throughout the workshop, the main conference room was used alongside an additional smaller break out room. Presented below is an overview of the structure of the workshop.

11.30am: Introduction of the session including sharing of aims and objectives and general direction of travel. Outline and organisation of the FG activity [Whole Group – Main Room]
11.40am: Focus Group Discussions [Main Room and Breakout Room]
12.20pm: Presentation of previous research findings (from Chapter 4) including informal discussion and capture of participants views [Main Room]
12.40pm: Conclusions and Thanks [Main Room]

Figure 5.1 An overview of the workshop approach to data collection

Below are resources from the workshop that I presented as the lead workshop facilitator.

Figure 5.2a An example introductory slide from the workshop

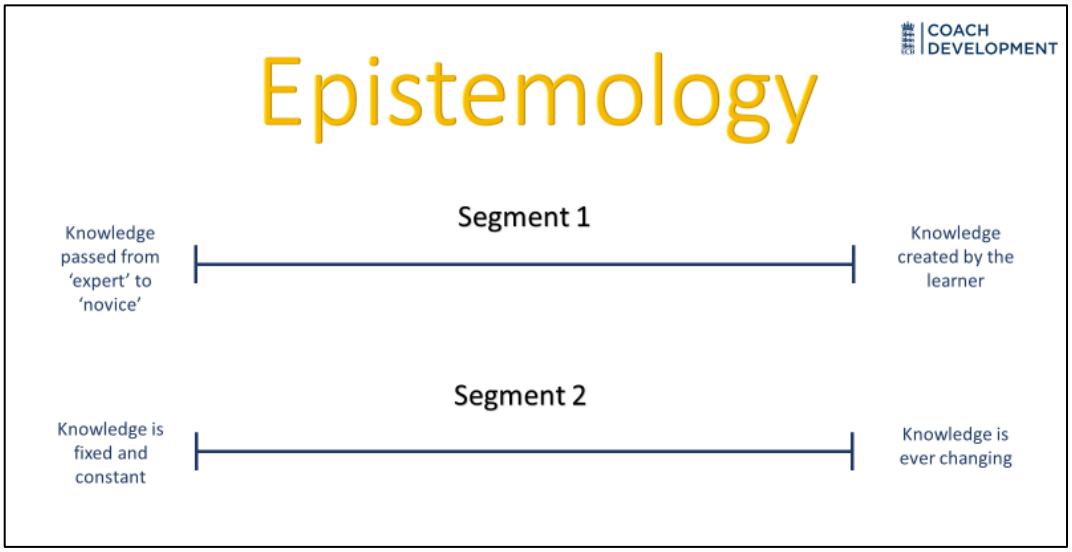


Figure 5.2b An example content slide from the workshop

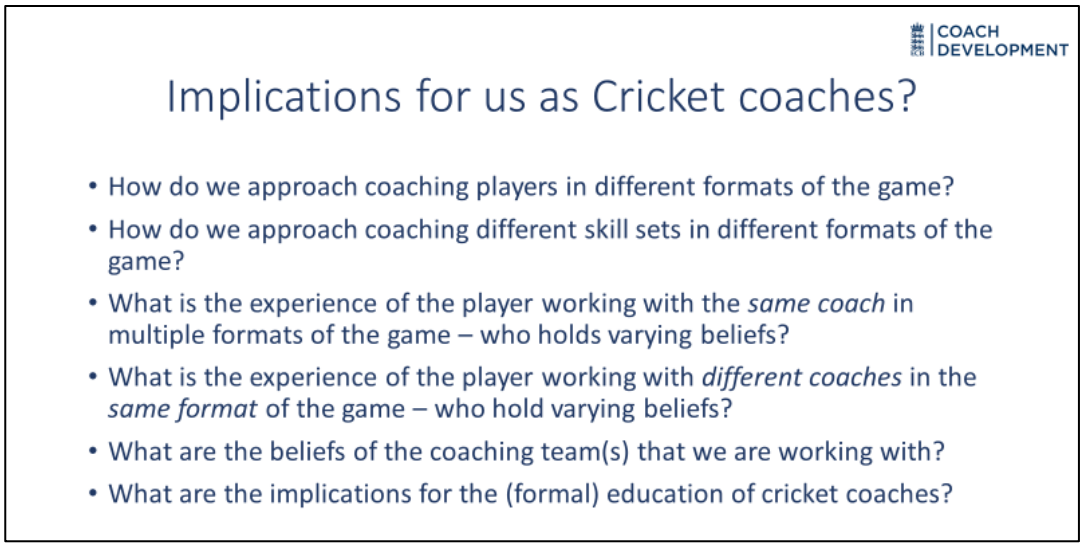


Figure 5.2c A reflective slide from the workshop

5.2.3.2 Focus Groups

Two semi-structured Focus Groups (FG) (Group 1 *n* = 8; Group 2, *n* = 4) took place after gaining informed consent (Appendix 4). FG were audio recorded and lasted 24 and 28 minutes respectively. Focus groups (FG) were utilised during the study given their alignment to the interpretive philosophy of the thesis. In more detail, the FG created a social environment in which to share ideas and form opinions (Breen, 2006). An additional rational for the use of FG was that they can often lead to participants discussing aspects of the topic which may not be captured in individual interviews (Purdy, 2014). This well reflects the

historical idea that subjective knowledge is formed as a result of the wide range of socio-cultural experiences of participants (Burrell & Morgan, 1979). Hence, FG acknowledge and actively cater for this important aspect.

In highlighting the different group sizes of the FG's, participants were initially grouped by the specific pathway of the coaching qualification in which they were enrolled i.e. ether Leadership or Development. This originally resulted in **four** FG consisting of **four** participants (i.e. *n=16)*

Unfortunately, two unplanned issues arouse. Firstly, one of the participants had been involved in chapter 4. As a result of not meeting the inclusion criteria this participant was removed from the data set. In clarifying for the reader, the participant **and the FG in which they were involved** was not included in the data set. As a result of the relative ontological positioning of the thesis and the view that all knowledge is subjective, it was felt the participant would undoubtedly influence the remaining members of the FG and hence impact the study and thesis' level of rigor, sincerity, credibility and transparency (B. Smith et al., 2014).

Secondly, due to unforeseen circumstances at the venue, two groups were placed together. Although FG were of differing sizes, group sizes remained in line with sizes used in previous studies within sports coaching research (e.g., Dohme, Rankin-Wright, & Lara-Bercial, 2019; Gould, Lauer, Rolo, Jannes, & Pennisi, 2008) and incorporated group sizes which were small enough to enable all participants to contribute, whilst being large enough for a variety of perspectives to emerge (Purdy, 2014).

A final influencing factor behind the choice of FG comes as a direct result of the chapters' focus. I.e. to follow up and more comprehensively explore the findings from Chapter 4. The choice has been influenced by the use of FG as an appropriate follow up method after individual interviews in recent interpretive research in sports coaching.

Examples here include the work of Leeder et al. (2019) with sports coaching mentors and the work of Gould, Lauer, Rolo, Jannes, and Pennisi (2006) who initially used surveys to collect data with tennis coaches prior to using FG in their later publication (i.e., Gould et al., 2008)

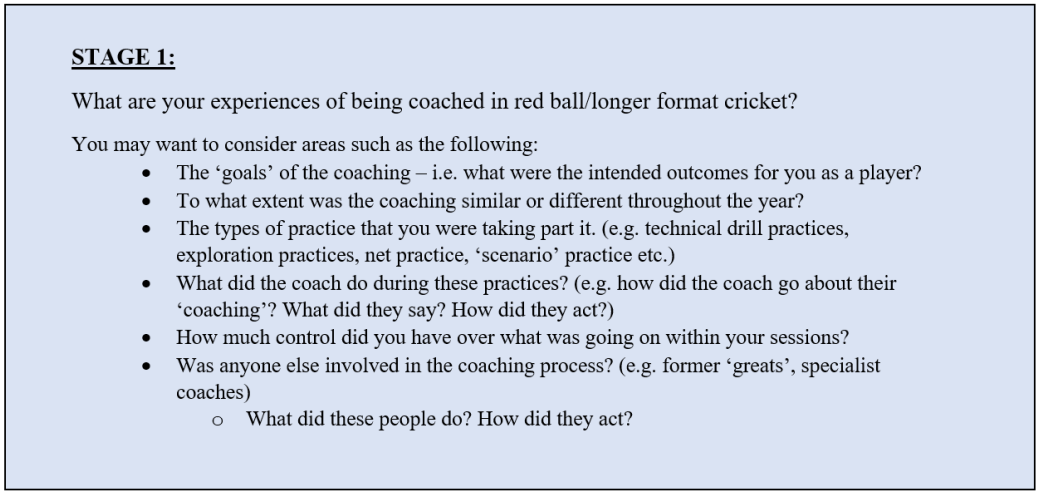
5.2.3.3 Using cue cards to prompt focus groups

The FG's were initially facilitated in a hands on approach by determining the range and scope of the process, setting the research platform and directing the focus (Nicholas et al., 2010). In order to avoid response bias (Heary & Hennessy, 2002), I used pre-prepared cue cards as a means of facilitating the focus group.

In offering detail here, there were five cue cards. Each card identified a 'stage' in the FG (i.e. stage 1, stage 2 etc.) At the beginning of the FG, participants were given the cue card labelled stage 1. As the FG continued, further cue cards were introduced to develop the conversation in line with the research objectives. The cue cards can be seen below (Figures 5.3a – 5.3e.). In helping readers understand 'how this looked', FG were running simultaneously in separate conference-style rooms next door to each other. In an ongoing attempt to steer conversations, I would move between rooms and interject with a cue card when appropriate. After delivering the cue card, I maintained a presence in order to address any questions before once again exiting. This cue card approach avoided participants looking for, and the facilitator giving approval (Kreuger, 1988). It allowed the FG to meet the aim of eliciting truly personal experiences of the participants (Powell, Single, & Lloyd, 1996) as opposed to perceived 'right answers'.

As a final step in outlining the process the FG's followed, initially participants were encouraged to consider their experiences of being coached in red ball cricket (e.g. "What are your experiences of being coached in red ball cricket?") followed by considering their own coaching approaches in red ball cricket (e.g. "What were the goals of your coaching with that player?"; "What did you do during the practices?") with supportive prompts (e.g. "What did

you say? How did you act? How did you go about intervening?") This process was repeated with a focus on participants considering white ball cricket. In order to counterbalance the two groups and avoid bias, the second FG were tasked with initially considering white ball cricket (their experiences followed by their coaching approaches) then followed by red ball cricket (experiences followed by their coaching approaches).



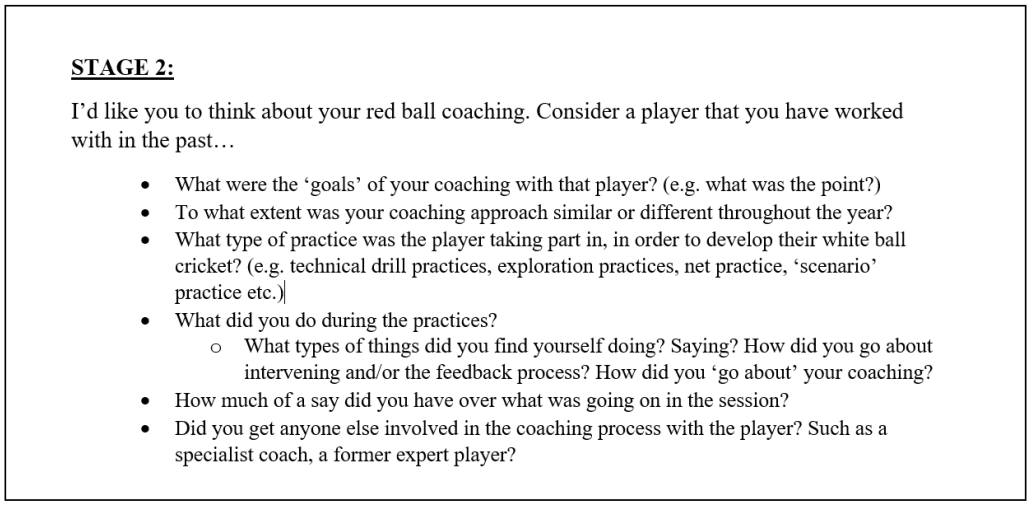
STAGE 1:

What are your experiences of being coached in red ball/longer format cricket?

You may want to consider areas such as the following:

- The 'goals' of the coaching – i.e. what were the intended outcomes for you as a player?
- To what extent was the coaching similar or different throughout the year?
- The types of practice that you were taking part it. (e.g. technical drill practices, exploration practices, net practice, 'scenario' practice etc.)
- What did the coach do during these practices? (e.g. how did the coach go about their 'coaching'? What did they say? How did they act?)
- How much control did you have over what was going on within your sessions?
- Was anyone else involved in the coaching process? (e.g. former 'greats', specialist coaches)
    - What did these people do? How did they act?

Figure 5.3a Cue Card 1 – *Experiences of red ball cricket*

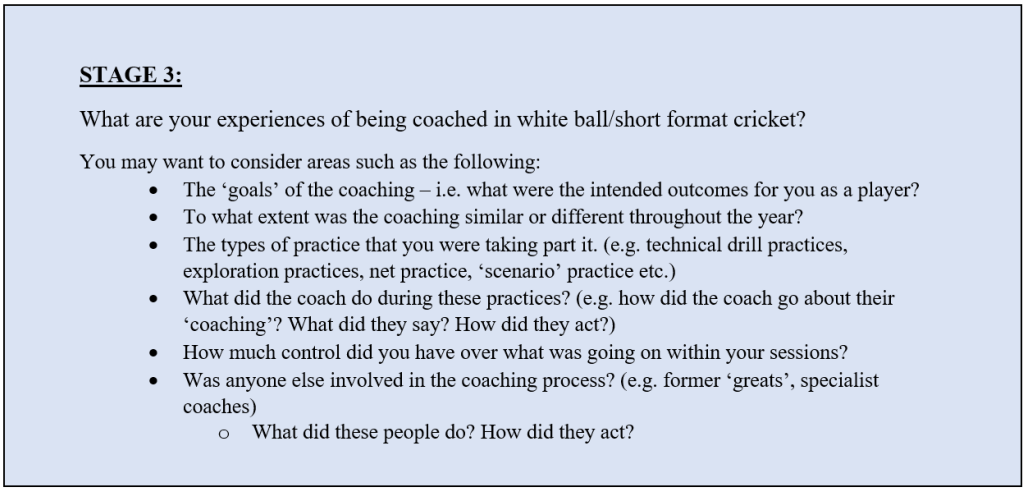


STAGE 2:

I'd like you to think about your red ball coaching. Consider a player that you have worked with in the past…

- What were the 'goals' of your coaching with that player? (e.g. what was the point?)
- To what extent was your coaching approach similar or different throughout the year?
- What type of practice was the player taking part in, in order to develop their white ball cricket? (e.g. technical drill practices, exploration practices, net practice, 'scenario' practice etc.)
- What did you do during the practices?
    - What types of things did you find yourself doing? Saying? How did you go about intervening and/or the feedback process? How did you 'go about' your coaching?
- How much of a say did you have over what was going on in the session?
- Did you get anyone else involved in the coaching process with the player? Such as a specialist coach, a former expert player?

Figure 5.3b Cue Card 2 – Coaching approaches in red ball cricket



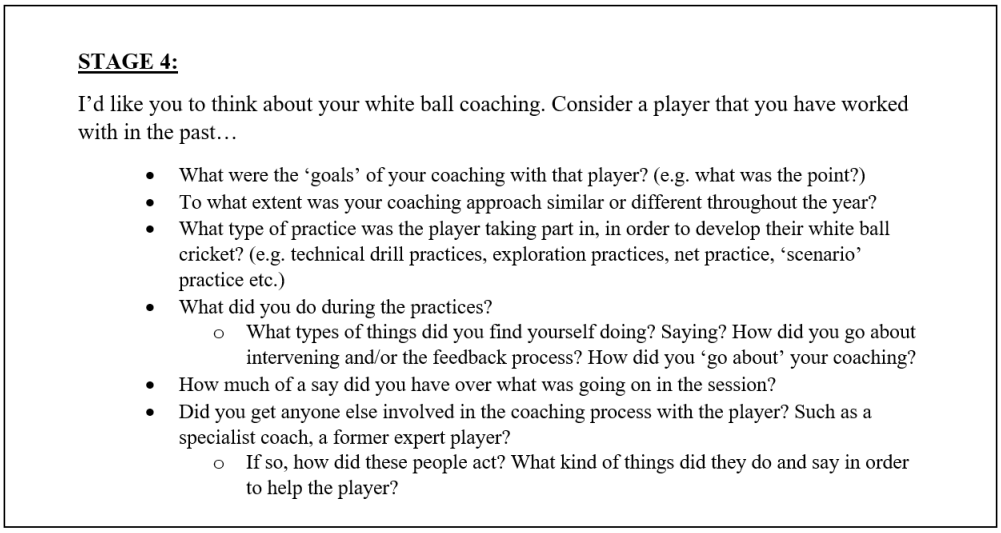
STAGE 3:

What are your experiences of being coached in white ball/short format cricket?

You may want to consider areas such as the following:

- The 'goals' of the coaching – i.e. what were the intended outcomes for you as a player?
- To what extent was the coaching similar or different throughout the year?
- The types of practice that you were taking part it. (e.g. technical drill practices, exploration practices, net practice, 'scenario' practice etc.)
- What did the coach do during these practices? (e.g. how did the coach go about their 'coaching'? What did they say? How did they act?)
- How much control did you have over what was going on within your sessions?
- Was anyone else involved in the coaching process? (e.g. former 'greats', specialist coaches)
    - What did these people do? How did they act?

Figure 5.3c Cue Card 3 – Experiences in white ball cricket

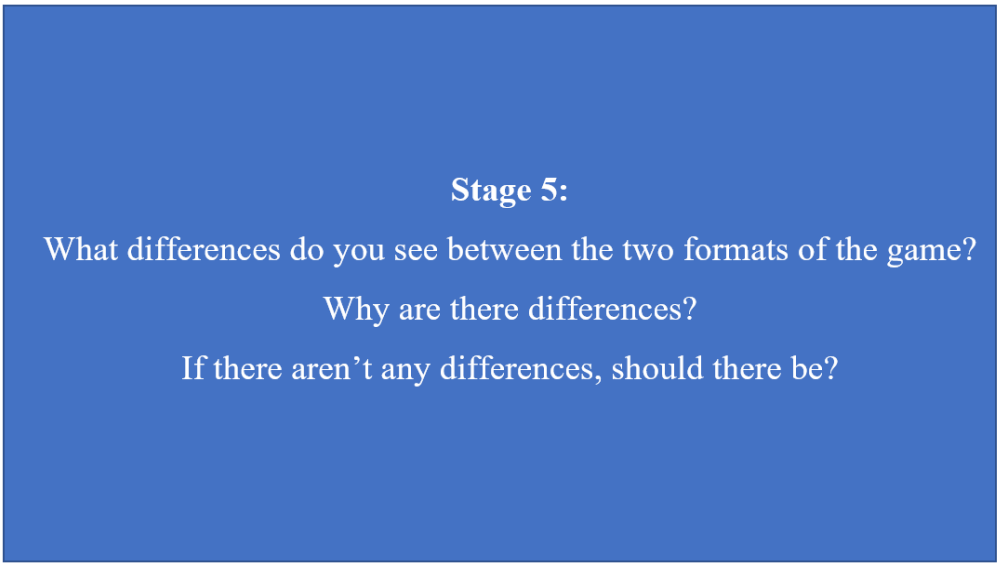


STAGE 4:

I'd like you to think about your white ball coaching. Consider a player that you have worked with in the past…

- What were the 'goals' of your coaching with that player? (e.g. what was the point?)
- To what extent was your coaching approach similar or different throughout the year?
- What type of practice was the player taking part in, in order to develop their white ball cricket? (e.g. technical drill practices, exploration practices, net practice, 'scenario' practice etc.)
- What did you do during the practices?
    - What types of things did you find yourself doing? Saying? How did you go about intervening and/or the feedback process? How did you 'go about' your coaching?
- How much of a say did you have over what was going on in the session?
- Did you get anyone else involved in the coaching process with the player? Such as a specialist coach, a former expert player?
    - If so, how did these people act? What kind of things did they do and say in order to help the player?

Figure 5.3d Cue Card 4 - Coaching approaches in white ball cricket



Stage 5:

What differences do you see between the two formats of the game?

Why are there differences?

If there aren't any differences, should there be?

Figure 5.3e Cue Card 5 – Evaluating red and white ball cricket

5.2.4 Data Analysis

Audio-recorded FG were transcribed verbatim to uncover aspects that may have been missed when moving between rooms. Post-transcription and as with previous chapters, RTA was used to analyse the data. There were a number of reasons for this. Given (R)TA's flexibility (Braun et al., 2019), it can be used for a range of data collection methods. Secondly, given the 'follow on' nature of the study, it also seemed appropriate that analysis continued in the same manner in which it was previously started. Again, from a theoretical perspective, the use of (R)TA is viewed positively in this regard given that it is a method that can be used across dataset analysis (Braun et al., 2019). Given this is the essence of the outcomes of this particular chapter, to further explore the findings from Chapter 4, the alignment here was apt.

Practically, the previously used approach to RTA was taken (Braun & Clarke, 2013) [see 3.3.2.2, chapter 3] with both inductive and deductive analysis methods used (via semantic and latent coding). As a result of a truly 'Big Q' approach [see 3.3.2.1, chapter 3], I have attempted to 'fully realise' themes. As a result and reflecting the idea that good themes are those that tell a coherent, insightful story about the data in relation to the research question (Braun et al., 2019) the final step in the analysis was the creation of 'storybook themes' (Clarke, 2017).

5.2.5 Addressing Trustworthiness

Chapter 4 previously presented study-specific, socially constructed criteria in order to understand trustworthiness and rigor (e.g., Burke, 2016; Gergen, 2014; Tobin & Begley, 2004). Given that the current chapter followed the same research objectives which were considered in Chapter 4, maintaining the same criteria (e.g. substantive contribution, worthy topic, rich rigor, sincerity and credibility) seemed appropriate.

In offering readers further detail, whilst the criteria remained consistent, there was a review of, and subsequent shift of focus towards specifically identified criteria. As a result, there was an increased focus on the level of rich rigor, sincerity and credibility as trustworthiness criteria.

Given the aim of the chapter was to explore findings more comprehensively from Chapter 4, one of the micro level strategies utilised within the workshop approach included the explicit presentation of the previous work and results. As a result, many of the characteristics of sincerity identified by B. Smith and Caddick (2012) (e.g. self-reflexivity, transparency of methods and challenges etc.) were addressed. In a similar vein a heightened level of credibility was achieved through said presentation of previous work and findings. This was a specific strategy, which took an interpretive perspective on 'member checking'. Readers are signposted to the credibility prompts identified by B. Smith et al. (2014, p. 196) [see Appendix 1] for a clear understanding of how this aspect was used.

5.3 RESULTS

In presenting the analysis, raw data codes (*n=103)* were created which lead to the identification of relevant lower order themes *(n=8).* Finally, three storybook themes were created (Table 5.1). These storybook themes were: *i) creating the right environment ii) getting stuck into white ball cricket iii) get your head down, listen to me and you'll be fine.* Organising concepts underpinning the reflexive thematic analysis (i.e., Braun et al., 2019) were once again; i) Macro level organisational alignment ii) Coaching practice and pedagogy iii) Power relationships in the coaching process.

The remainder of the results section is divided into key sections. What follows immediately, and as with the previous chapter [see 4.3.1, chapter 4], is an audit trail of the results. Following on, the storybook themes are presented and discussed in individual sections. Readers are also presented with white and red ball summary sections.

5.3.1 Presenting an audit trail

What follows below are two tables that demonstrate how the data has been analysed to build and construct the final storybook themes. Initially, Table 5.1 overviews the initial coding phases (i.e., step 2 of 6; Braun & Clarke, 2013). Example transcript passages are presented, along with the initial code assigned. The lower order theme is also presented to give readers some context. Secondly, Table 5.2 provides readers with the full reflexive thematic analysis

Table 5.1 *Examples of transcript coding and generation of a raw data codes*

Example Transcript Extract(s)	Code Assigned	Lower Order Theme
in terms of white ball cricket, it's changed completely, introducing strength programmes for more power which would never have happened 10, 15 years ago, athletes, everything is geared around how hard you can hit it, how far you can hit it and your attitude towards the game has totally changed as *(coach)* said, that very English mentality of being boring and let's just plod along until the last 3 or 4 overs and try and do something daft there has changed completely hasn't it (Adam)	Attitude to T20 has changed over the last 15-20 years	Change in attitudes and expectations – breaking with tradition
And you've got to stay ahead of the game. 15 years ago if someone said to, off-spinner is on, I want you to go to 6^{th} or 5^{th} leg stump, outside and open up that and it's a freebie if it's at you, if it's at the stumps it's through the off-side then I wouldn't do it but now that's common place because when we first started you'd have thought someone was bonkers for saying that (Jason)	Change in expectations of the players	
I feel like white ball you're ticking boxes and you practice and it's like, well that's my shot where as in red ball you get judged a bit more, there's more analysis after a game where as in white ball it's just like, well I didn't execute it right (Sam)	Change in repercussions for players getting out in white ball cricket	
Yeah, I agree with everything, I think it's changed completely, dynamically the games changed. Certainly I was *(coach)* you would have been as well – brought up on red ball cricket and then had to learn how to play white ball cricket whereas these days it's the other way around, so brought up on white ball cricket and learning red ball cricket (Adam)	In the past white ball cricket was 'an add on' - modern day players learn white ball first	

Table 5.2 *A full overview of the reflexive thematic analysis*

Example Raw Data Codes	Lower Order Themes	Storybook Themes
The performance impacts/importance of having 'the right' culture Trust in the coach-athlete relationship	Culture	Creating the right environment
Opportunities for players to do 'what they want to do' in some practice sessions Players allowed/encouraged to work/practice in the manner they like	Player freedom	
Attitude to T20 has changed over the last 15-20 years Change in expectations of the players Change in repercussions for players getting out in white ball cricket In the past white ball cricket was 'an add on', modern day players learn white ball first	Change in attitudes and expectations – breaking with tradition	Getting stuck into learning white ball Cricket
Freedom/no repercussion practice (Modern day) willingness to use white ball practice to try things 'Have a go' practice – Invent something White ball formats have allowed players to try things	Players learning by 'having a go'	
Game related practice - more outcome based Using scenarios in white ball cricket Practice with a game outcome (e.g. hit to the boundary) White ball practice with a game 'angle' on it Using scenarios – with field positions	Open/Game related white ball practice	
Specificity of (batting) practice – blocked practice Repetition of shots (in practice) to justify applying skill in a game Increase in specificity in recent history (e.g., ball striking)	Repetitive white ball Practice	
Consistency of skill (more) important in red ball cricket [Red ball game more technical that white ball] Red ball about longevity, patience and concentration Red ball cricket is about discipline	Mental requirements of red ball cricket	Get your head down, listen to me and you'll be fine

[Historical approach to batting] ‘bat time, bat all day’ Batters get judged more in red ball (no hiding place) More pressure in red ball cricket Importance of being mentally right		
Younger players ‘don’t know their game’ Working with the coach to drive practice Learning from (other) experts Coach giving the player technical change Coach leading the technical change (and then player buying in) Technical input decreases as you progress Young players who are able to drive their own practice are a rarity	Knowledge passed down from experts to novice in red ball cricket	

5.3.2 Storybook Theme 1: Creating the right environment

This storybook theme had two underpinning lower-order themes; *culture* and *player freedom*. Coaches acknowledged the role the wider environment had in the development of players across both formats of the game. What is noticeable is the continued acknowledgement of the wider (coaching) environment by coaches within this chapter alongside their counterparts in Chapter 4.

5.3.2.1 Culture

Jimmy discusses in relative detail how their organisation has attempted to address the off-field environment in order to positively impact results on the field:

> And I actually think as well that if you look around all the clubs at county level, a lot of clubs are going through that process of the environment. How that impacts what you're doing on the field. Can you encourage discipline off the field as well as on it? I think a lot of coaches have bought into that, the culture, the environment and it's sort of a buzz-word isn't it but I think it is very powerful but we've certainly gone through a process at (county) and we've seen a huge change in performance really just because it's becoming engrained…doing it day in day out (Jimmy)

What is offered here is an extension of the findings from the previous chapter. In this extract, the coach acknowledges the role of the macro level environment and culture of the organisation. Coaches previously appeared to focus on the meso and micro level environments they were creating as a direct link with their 'on the floor' coaching practice. This acknowledgement of the socially and culturally structured world (Cushion & Jones, 2014) is important for coaches. The interaction of these micro, meso and macro social and cultural influences lead to the formation of an often covert (and at times overt) setting of norms, expectations and values within the coaching environment (Cushion & Jones, 2014). As a direct impact, the overarching culture of the environment that coaches find themselves in can have a significant impact on the coach as they attempt to challenge and negotiate the social context (R. L. Jones & Wallace, 2005; R. L. Jones & Wallace, 2006). It is clear then

that coaches are considering the positive (performance and learning) outcomes of shaping and aligning the culture of the programme to operate both on and off the field.

This lower order theme has considered the macro-level environment that coaches and organisations create. As an important next step, the following lower order theme increases the focus of what this looks like from a day-to-day perspective.

5.3.2.2 Player freedom

Micro-level applications of this culture saw opportunities for players to have autonomy over some practice sessions. Players being able to control the focus of their practice was seen as an attempt to individualise the coaching process:

> It depends on the coach as well though doesn't it. Some of our sessions are, not like focused sessions but we'll have the odd time where you can do what you want to do, so it's for the benefit of the players and they can work how they want to. Someone like (player A) is different to (player B). (Player B) seems quite meticulous in what he wants to do...(player A) just backs his own ability to almost bat his way out of things whereas someone like (Player C), he won't leave the net session until he gets something exactly right (Sam)

There are direct links between this theme and the well-established theory of Self-Determination Theory (SDT; Deci & Ryan, 2000). Historically, the benefits of enabling autonomy (or freedom as it is positioned here) and encouraging (players') self-direction range from increasing learners' curiosity, to increasing learners' desire for challenge (Deci, Nezlek, & Sheinman, 1981). There has been much application of using autonomy within sports coaching within the existing literature, with a focus on exploring the connection between coach behaviours as a predictor of athlete motivation (e.g., Carroll & Allen, 2020; Conroy & Douglas Coatsworth, 2007). A review of autonomy supportive coaching approaches by Occhino, Mallett, Rynne, and Carlisle (2014) suggested four key benefits to this approach; i) increasingly satisfy psychological needs of players b) sustain intrinsic motivation of players iii) promote continued engagement in sport; and d) enhance athletic performance (e.g., more effort, will try harder for longer etc.) Clearly when reviewing the extract from

Sam (above), it is clear to see a number of these benefits in action for players A, B and C to whom the coach refers.

The theme *player freedom*, offers reinforcement to themes which were identified in Chapter 4, specifically *'player responsibility'* and '*an individualised approach'*. Opportunities are being created, albeit not all the time, for players to make decisions over their own practice, thus catering for the individual requirements of the players they are working with. As a final, supporting example of this theme in practice, Sean outlines the approach in their environment; "Well I would say in general…our practice is quite individual so, the responsibility is (on) yourself and you'll go into a net and you'll have what you want to work on". What appears consistent is the opportunities being created by coaches use of autonomy-supportive behaviours, for players, to take control of their own training.

5.3.3 Storybook Theme 2: Getting stuck into learning white ball cricket

This storybook theme was created as a result of four supporting lower order themes. These were; *i) change in attitudes and expectations – breaking with tradition ii) players learning by 'having a go' iii) open/game related white ball practice iv) repetitive white ball practice.* These lower order themes were developed specifically as a result of explicit discussion in relation to white ball cricket, are discussed below.

5.3.3.1 A change in attitudes and expectations – a breaking with tradition

Coaches identified how there had been a *change in attitudes and expectations –a breaking with tradition* in white ball cricket. As Jason outlined:

> And you've got to stay ahead of the game. 15 years ago if someone said to, off-spinner is on, I want you to go to 6th or 5th leg stump, outside and open up that and it's a freebie if it's at you, if it's at the stumps it's through the off-side then I wouldn't do it but now that's common place because when we first started you'd have thought someone was bonkers for saying that

Jimmy continues and considers a players' perspective on the implications of the changes of expectation(s) within white ball cricket and the implications this has on players potential career trajectories;

> The idea of the form of the game has probably changed for players as well hasn't it, so *(in the past)* it was all about the longer form and you've got to be successful in that to get anywhere in the game whereas that's changed hasn't it, the whole outlook of cricket has changed and I think that leads into every other facet doesn't it, whether it's practice or match play

The construction of this theme once again offers support to the initial findings in Chapter 4. Extending the idea of a supportive and informal collaborative environment where coaches and players work together to identify how the game is played. Coaches in this chapter acknowledged the changing macro-level socio-cultural-political landscape of white ball cricket and the impacts this has had on coaches and players. As Jason implies, ideas that would once be labelled as *bonkers* are now being actioned. Acknowledgement of the socio-cultural-political environment that coaches operate in has been made previously (i.e., Till et al., 2019) [see 2.1.2, chapter 2]. Interestingly in his extract above, Jimmy acknowledges the changing socio-cultural-political considerations for players and the potential impacts this could have on players career trajectories. As previously identified [see 1.2, chapter 1] historically red ball cricket has been perceived as 'the ultimate' and a gauge of a players' ability *to then* be able to attempt to play white ball cricket. This appears to suggest that those days are now in fact, history.

5.3.3.2 Players learning by having a go

This breaking with tradition also lent itself to being an approach that was supportive of *players learning by having a go*. Martin reflected on the development of specific bowling skills used in white ball cricket. Of interest, Martin appears to be considering both the physical requirements of *having a go*, alongside the cognitive demands previously associated with players *figuring it out* identified previously in Chapter 4 (Table 4.6); "I mean where

have these knuckle balls come from? It's all come from, right let's go in there and play with it. Invent something new. You're constantly on to players aren't you, go and find something new". Later in the discussion, Martin concludes;

> I would say that practice has evolved quite a lot in the past 8 years, 10 years because it's a lot free-er now than what it was because the game is moving forward and so people are much more open to expand their games and go, let's try this, let's try that

As highlighted previously, this extract succinctly outlines the contribution that the previous theme identified in this chapter (i.e., *a breaking with tradition)* has had on leading to a shift change in practice structure. In doing so, there has become an increased emphasis on practice that is exploratory in nature.

This shift in approach aligns with increased recognition in the skill acquisition literature of more modern and innovative approaches to helping players learn new skills. As has been identified previously in the thesis [see 4.3.2, chapter 4], approaches such as Games Based Approaches (GBA) and Non-Linear Pedagogy (NLP) have gained much recognition. These approaches, which are increasingly aligned with the constructivist approach to learning, where learning is active (Newmann, 1994) and the process shared (Roschelle et al., 2001) and is centred on players creating functional movement solutions (Chow et al., 2016) to the problems they encounter. In linking directly to Martin's remarks about players inventing *knuckle balls* (Nb. a solution, created by bowlers in an attempt to deceive batters and stop them scoring runs), a specific nod here is made to NLP. As a key principles, NLP promotes the idea that practices "must be designed in ways that allow athletes to exploit learning opportunities that promote innovative and adaptive performance behaviours" (Correia, Carvalho, Araújo, Pereira, & Davids, 2019, p. 117). Consciously or unconsciously, coaches are engaging in this type of practice design and encouraging practices which involve a consistent integration of players' cognitive processes (Davids, Araújo, Vilar, Renshaw, & Pinder, 2013).

In referring to the epistemological positioning of red and white ball cricket identified in the previous chapter (i.e., Table 4.7), links can be made to the 'goal setting' and 'judgements made' aspects of the EC. The quotes here from Martin (above) compliment the idea that goal setting is based on real life situations players may face in games (i.e., *"people are much more open to expand their games"*). As a result (i.e., *"let's try this, let's try that"*) it seems reasonable to suggest that judgements made regarding success are in relation to players having an increased understanding of their role within the game and create and apply (and have a go at!) individually appropriate solutions to the problem faced.

Whilst the current section has outlined coaches' overarching positions as to the *purpose* of practice for players, the following section increases the focus on how coaches went about enabling their players to *have a go*, specifically in their relation to practice structure.

5.3.3.3 Practice Types: Open/game related practice and repetitive practice

This sub-section combines two of the lower-order themes developed through the analysis; i) open/game related practice ii) repetitive practice. Given the intertwined nature of these lower order themes, it seemed sensible to present them together.

Coaches reflected on the types of coaching practice that were taking place on a micro level and suggested that more *open/game related practice* took place in white ball cricket however was supported by the need for *repetitive practice* for players to be able to execute their skills in gameplay.

Importantly for readers to note, the lower order theme *game related practice* is not 'games-based practice' (e.g., GBA; Teaching Games for Understanding (TGfU); Game sense etc.; Kinnerk et al., 2018). It is clear that a range of simple to complex considerations *of* the game were being made by coaches and players when practicing and that practice was

structured in many ways. The example below from Sean incorporates both of the lower order themes (i.e., open/game related practice *and* repetitive practice):

> So I reckon some of mine would be to do with specifically how I might approach the game so a contact drill so I'd often lose focus on contact and try and get balls in specific areas so…there's no fielders there and just think about…just trying to have good contact, strong contact and then take elements from there and right, now you've got those can you now be more specific in your practice in terms of where you're trying to get those, the gaps or areas you're trying to hit, whether it's fours or twos.

Another participant, Stuart supports the use of 'layering on' match outcomes (i.e. *game related practice*) when practicing in white ball cricket. The example shared is regarding the coach trying to help batters increase the quality of the contact they make when hitting the ball:

> we do that thing where you have to get it to the boundary, no fielders but you have to hit it so clean that the ball would go to the boundary, because that's an outcome isn't it, that's hitting it cleanly.

Similarly, coaches below discuss the need for repetitive practice which is positioned in line with the earlier identified theme of breaking with tradition:

> Sid: Coaching-wise, do you think it's shot specific practice now? Whole sessions on ramping it, reverse sweeping it.
> Jimmy: *(Yeah).* And that comes from that acceptance that they are options to be played, I think that probably wasn't the acceptance years ago. It was right, make sure you bat your 100 balls and you'll be 85 and now if you're batting that long you want to be 160 (runs) don't you.

This section builds on previous areas of the results, specifically the lower-order theme *players learn by having a go.* The current section, suggests that not only are modern and increasingly innovative approaches to skill acquisition being used by coaches (i.e. NLP) but there are times where the use of traditional approaches to skill acquisition remain, such as de-contextualised, blocked practice (Shea & Morgan, 1979). What is interesting is that aspects of game play are being considered within these practices. Whilst this does not lead to any significant change in practice structure, it is suggestive of a move towards increasingly 'match-fit' technique, i.e. technique that is adaptive to the challenges of the performance

environment (Chow et al., 2016) as opposed to increasingly fixed technique that is historically sought after. Again, in referring back to the initial findings of the previous chapter (i.e., Table 4.7) what once again becomes clear is the support offered in relation to coaches approaches to setting goals (i.e., 'goal setting') choosing methods (i.e., methods used) and making judgements (i.e., 'judgements made') in white ball cricket.

5.3.4 White Ball Summary

The findings of the current chapter offer support in relation to the epistemological positioning of white ball cricket that has been previously identified. What the results from this chapter have shown (Table 5.2) are an increased acknowledgement of wider context of white ball cricket (i.e., *a breaking with tradition)* and how this informs coaches' increasingly sophisticated views about how learning happens in this context. As an extension, coaches therefore more readily engage in increasingly constructivist approaches to practice with their players (i.e., *players learn by having a go* and *open/game related practise*).

In attempting to summarise, results of this chapter offered support for the increasingly sophisticated epistemological positioning of white ball cricket previously presented in this study (i.e., Table 4.7). A specific point of interest is the range of practice types used by coaches in order for players to more readily achieve the outcomes associated with the white ball game (i.e., both open/game related *and* repetitive practice. In line with the PJDM perspective, coaches are considering which type of practice is most suited (i.e., *the correctness*) at any given point in time (D. Collins & Collins, 2021). This selection of coaching approaches from a range of ideas enables coaches to maintain both a 'top-down' (i.e. constant application of long term planning) and 'bottom-up' (i.e. working in the moment) approach (e.g., Abraham & Collins, 2011b; Martindale & Collins, 2012). Importantly, this increasingly relativistic approach (i.e., Perry, 1970) to decision making is an

important aspect of white ball cricket coaching process and reflects an increasingly sophisticated stance (i.e., there is no one set way to develop white ball skills).

The current section has addressed more comprehensively, coaches approaches in white ball cricket as has explored the key storybook theme developed in relation to white ball cricket. As a result of having gained further clarity in relation to the epistemological positioning of coaches in white ball cricket, the chapter continues and turns its attention to coaches approaches in red ball cricket.

5.3.5 Storybook Theme 3: Get your head down, listen to me and you'll be fine

This storybook theme was underpinned by two supporting lower order themes; *i) mental requirements of red ball cricket ii) knowledge passed down from experts to novice in red ball cricket.* These themes are explored in more detail below.

5.3.5.1 Mental requirements of red ball cricket

In this instance, Jimmy clearly highlights the importance of players' psychological characteristics and more specifically, the discipline required by players in red ball cricket given the increased amount of time required and opportunities available to players in red ball cricket:

> The main difference between red and white ball is the buzz-word 'discipline'. That's always something we come back to, right we've got to hold our discipline or hold our length, whatever it may be. With the bat, bat time, discipline I think that's the big difference between the two forms of the game…the discipline of being able to hold your nerve, your skill for that longer period – that's the main message that most coaches try and get across.

A supporting example of the additional mental requirements of red ball cricket compared to white ball comes from Isaac, who discusses the importance of players dealing with pressure: "I think there's more pressure in red ball, there's no hiding place. If someone's bombing (*bouncing)* you, you can have a flap in white ball can't you and it doesn't matter" (Isaac)

This input from coaches adds clarity regarding the 'clear rules and KPI's' (see Table 4.7) associated with coaching in red ball cricket identified previously. Currently there is a

significant focus in sports coaching around the psychological characteristics that help to develop excellence (PCDE) (D. Collins et al., 2016; MacNamara, Button, & Collins, 2010a, 2010b) and the term 'discipline' used in the above example readily aligns with the term 'focus' proposed by Orlick and Partington (1998). Adding a cricket specific lens to their work, it would appear that cricket coaches support this as being an important characteristic which can be a differentiator between successful and unsuccessful players within red ball cricket. This use of 'discipline' by coaches would also be supported by more recent work within cricket by Gucciardi and Jones (2012). Although these authors focused specifically on mental toughness, 'attentional control' was identified as a key construct and has clear links with the idea of 'discipline' described by coaches in this chapter.

5.3.5.2 Knowledge passed down from experts to novice in red ball cricket.

Progressing from this theme and continuing to consider the extended findings, the idea that *knowledge is passed down from expert to novice in red ball cricket* was also evident. Whilst a number of coaches outlined how this looked in their practice, of real interest was where David discussed the potential differences in the source of knowledge between an international player and a developing player (i.e. the focus of this study);

> So the interesting thing is looking at the levels. So the level that (player) is at obviously with the experience that he's got and the age that he's at he's watching ideas and coming up with them himself because he knows his game, going to the coach and saying how can I change this? Whereas if I'm working with a 15-year-old that's not going to happen. So it's going to be the other way around.

Stuart offered support to the idea that knowledge, for younger, developing players, should be led by coaches;

> …but mostly I think they need direction so like you say an u14 – knowing what is required for red ball training…so I still believe you need to be led. Led towards what a batsman looks like because I think it will be too late for them. Because I think we need to accelerate their learning.

As a fascinating note to readers which helps to show to application of these beliefs in coaching practice, almost immediately following on from this contribution by Stuart regarding learning in red ball cricket, Sean asks: “so what drills do you do for red ball?”

This result points to coaches continued naïve epistemological beliefs in relation to coaching red ball cricket to *developing athletes*. Specifically in relation to the validity and source of knowledge (i.e., Omniscient Authority), results from this chapter support the initial findings in that coaches view themselves as having the knowledge, and action that knowledge in order to *lead* the coaching process.

This section also acts as an extension of the previous findings. Until now, the context which has been the focus of coaches differing epistemological beliefs has been the format of the game in question; red or white ball. It now appears that coaches may hold different epistemological beliefs based on the type of player they are working with. Whilst it is not within the scope of this chapter (or thesis) to address coaches’ beliefs when working with other types of players (i.e. players of different ages, varying standards etc.) what is apparent as a result of this chapter, is the worthiness of this as a continued area of research.

5.3.6 Red Ball Summary

The findings of the current chapter in relation to red ball cricket, once again position coaches’ approaches as increasingly naïve. The specific lower order themes presented (i.e., *mental requirements of red ball cricket* and *knowledge passed down from experts to novice in red ball cricket*) lead to conclusions that coaches hold increasingly black and white views about the requirements of red ball cricket. For example, discipline **is** required for red ball cricket. Implicitly then, those without it appear unlikely to be successful. This naïve epistemological positioning then filters into coaches’ approaches with their players and leads to a coach-athlete relationship which is based on an increasingly naïve set of beliefs which positions the coach as knowledge holder and the player as an empty vessel to fill with said knowledge.

In linking with the findings in Chapter 4, the above are positive examples of the 'methods' and 'relationship built' aspects of the epistemological chain of the coaches (Table 4.7) which clearly reflect an increasingly naïve positioning of coaches epistemological beliefs in relation to the dimension of 'Omniscient Authority' (Schommer, 1994). Put simply, coaches are attempting to develop a set of competencies in red ball cricketers (in this case batting) where there is an increasingly dualistic model for players to follow, of what batting should look like (Epstein & Hundert, 2002).

In moving the chapter towards a close, the sections that follow begin the draw the findings of the current chapter together in line with the research objectives and offer readers updated versions of the epistemological basis of red and white ball cricket.

5.4 DISCUSSION

The aims of this chapter were to more comprehensively investigate and evaluate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision in relation to red and white ball cricket (RO2). Also, to continue to critically examine the epistemological beliefs of coaches involved in coaching red and white ball cricket (RO3). In doing so, it was hoped any support gained and value added would add further use for those in 'hands on' roles within cricket coaching. As this chapter was targeted as a step to *more comprehensively* meet these objectives after the initial findings of Chapter 4, the following passages of work tie together the findings to date.

This chapter adds further reinforcement to the epistemological positioning of cricket coaches working with developing athletes in red and white ball cricket. These positions are increasingly naïve in red ball cricket, and increasingly sophisticated white ball cricket. What is becoming clear is the increasingly polar nature of coaching and coaches' approaches based on the format of the game. It is clear to see that there has been a level of consensus drawn from the data, alongside the addition of a number of valuable nuances when coaching in red

and white ball formats. In highlighting the complimentary nature of the current chapter in relation to the previous findings, Table 5.3 (below) clearly outlines the commonalities discovered and importantly the extensions offered as a result this study, against the findings of Chapter 4.

Table 5.3 *A comparison of aspects of the coaching process in red and white ball cricket gathered in chapter 4 and chapter 5*

Aspect of coaching process identified in Chapter 4	Red (R) or White (W) ball coaching process	**Comparable (and 'value added') aspect of coaching process identified in this chapter**
Clear set of KPI's/way to play the game	R	Mental requirements of red ball cricket
Knowledge passed down from expert to novice AND Coach led approaches	R	Knowledge passed down from expert to novice
Supportive and informal collaborative environment – How do you play the game?	W	Change in attitudes and expectations – breaking with tradition
Knowledge co-created by player and coach AND Players learn by having a go	W	Players learn by having a go
Increased opportunity for player-led approaches AND Mix of traditional and innovative approaches	W	Open/game related practices AND Repetitive white ball practice

As a result of more comprehensively reviewing RO2 and RO3 of the thesis, updated versions of the proposed epistemological positioning of coaches within red and white ball cricket are presented below in Figure 5.4 and Figure 5.5. As a reminder to readers, these figures have been created to offer a meaningful insight into what is happening 'on the floor', maintaining the practical and applied motivations of the thesis [see 3.2, chapter 3]. Given the advances in understanding the complexity and interwoven nature of these processes, the use of figures seemed more appropriate as opposed to the continued use of the table format (i.e. Table 4.7). Explicitly, it is hoped the representation in figure form dispels any misconceptions of

representing this process a simple, linear, step-by-step process and shows more easily the dynamic and interactive processes of epistemology and the EC.

From an epistemological perspective, the dimensions of the source of knowledge (i.e. Omniscient Authority) and the certainty of knowledge remain the key focus. What appears is that in relation to red ball cricket, there is a well-accepted 'roadmap' of how to play red ball cricket (Figure 5.4) which ultimately leads to coaches creating environments based on the transmission of this roadmap to players.

It is perhaps important to add here, given it has not been explicitly stated, that this is not necessarily transmitted from coach to player in a dictatorial manner, of which may be the assumption. Readers are reminded here of the first storybook theme created in this chapter that of '*creating the right environment'.* Nevertheless, coaches' approaches drive towards the development of competent players who are able to follow the aforementioned map.

In comparison and as a result of this chapter, the ways in which coaches operationalise their increasingly sophisticated beliefs in white ball cricket has become clearer (Figure 5.5). The additional findings that not only are players '*having a go'* from a physical perspective, but also a cognitive perspective is significant, and helps to understand the potential roles for more traditional (i.e. blocked, de-contextualised) practice alongside practice that is increasingly representative of the game, and scenario-style practice in coaching the white ball game. This use of the most relevant and appropriate *methods* is as a direct result of coaches increasingly sophisticated beliefs in this context (i.e., there is no, one way to practice). Given the identified culture shift in white ball cricket and the '*accepted breaking with traditions'*, the coaching possibilities in relation to the player-led, and co-creation of learning and knowledge appear endless.

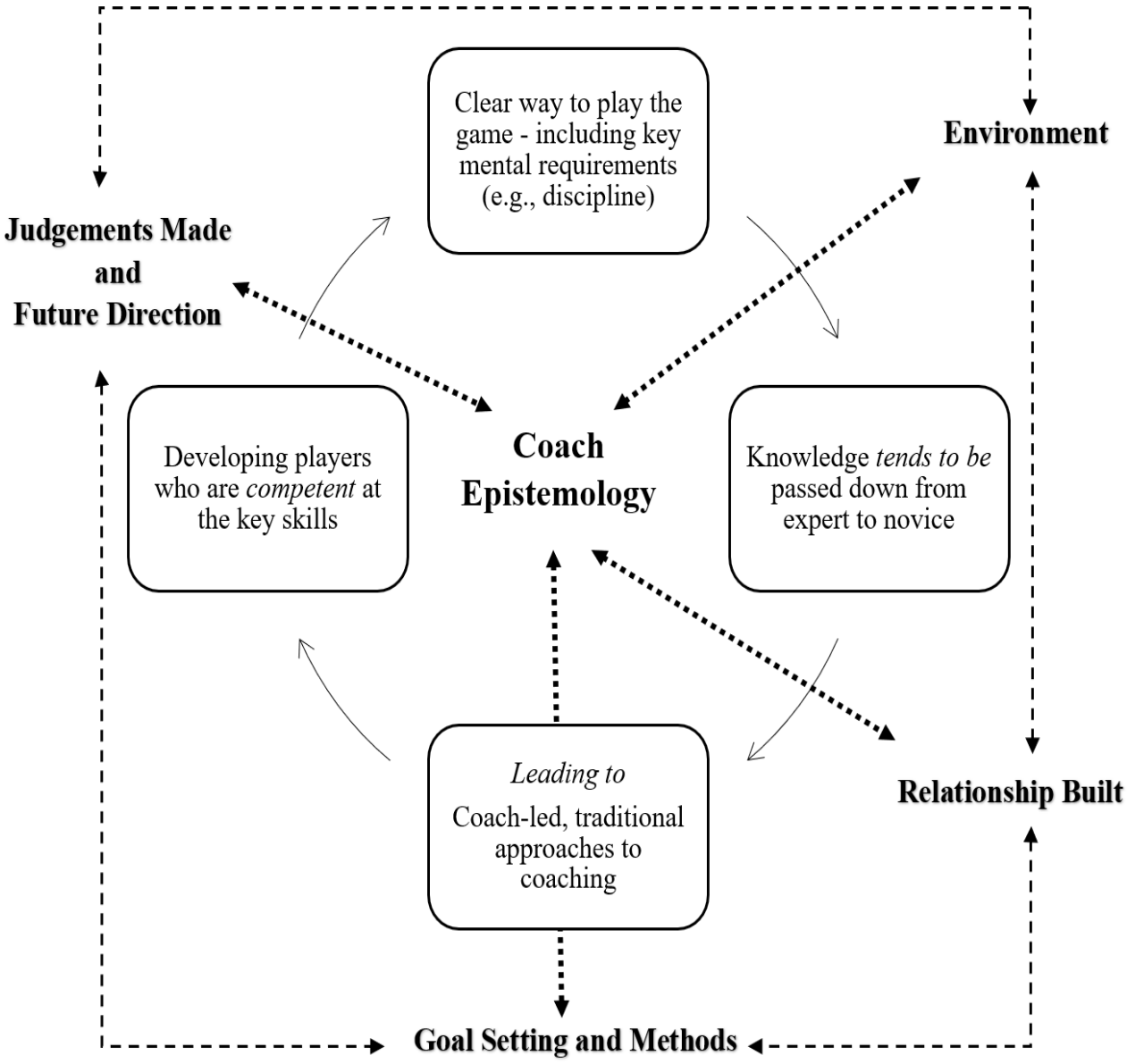


Figure 5.4 The epistemological chain and coaching process in red ball cricket

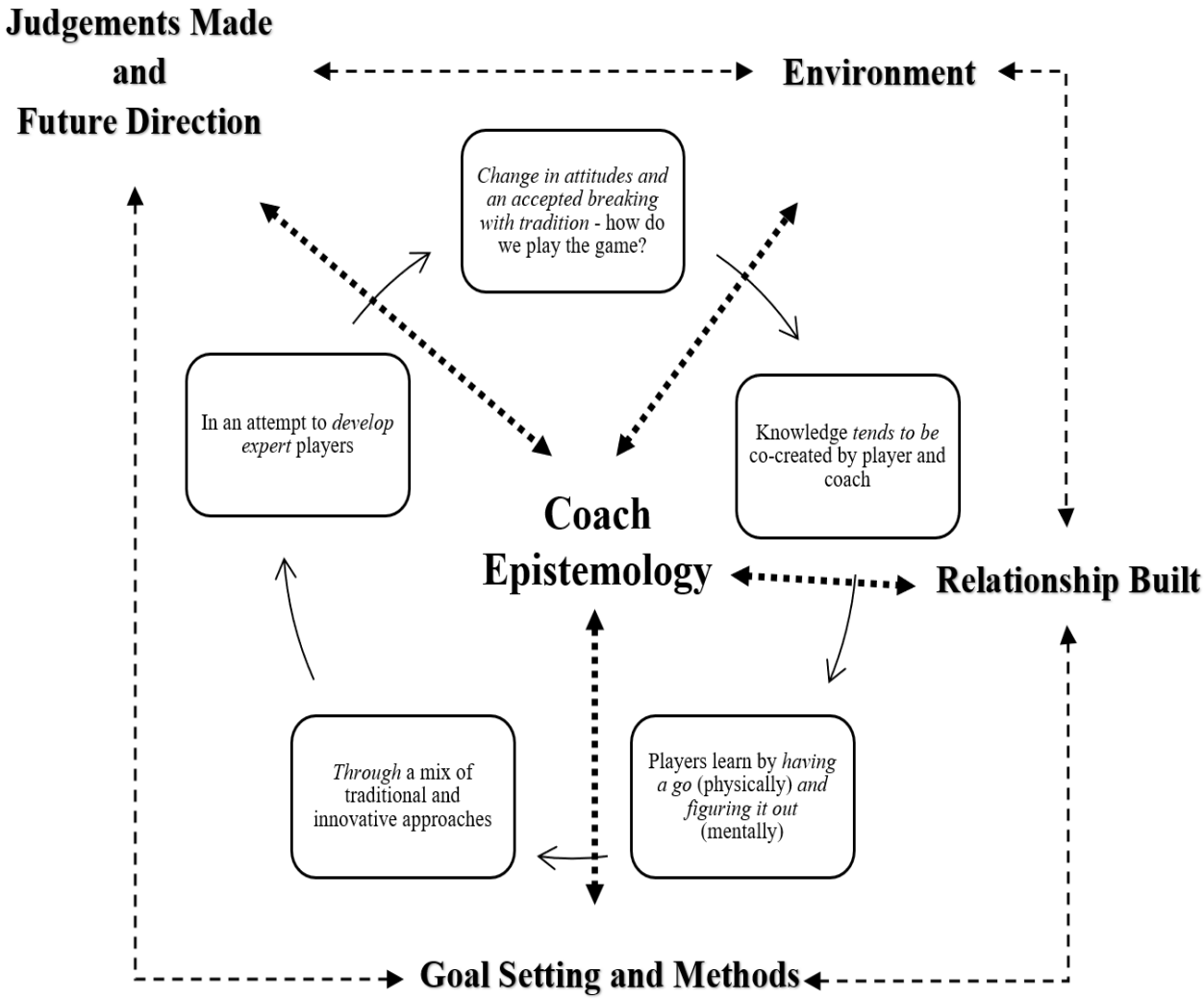


Figure 5.5 The epistemological chain and coaching process in white ball cricket

5.4.1 Limitations

Prior to concluding, it is important to identify the limitations of the chapter. These limitations are specifically in relation to the self-directed nature, use of cue cards to prompt, and size of Focus Groups (FG) used during data collection.

The planned self-directed nature of the FG was a step taken to avoid response bias (e.g., Heary & Hennessy, 2002). One of the possible outcomes of this (i.e., FG somewhat *running themselves*) may have been that some participants imposed pressure or relational challenges on the rest of the group (Kitzinger, 1995). This may have been especially true given the respected position of some of the group (e.g., former international players). However, many of the group already had existing positive relationships (i.e., through their cricket network) this approach offered significant benefits such as participants offering gratitude, affirmation, and reciprocal support (Gibbs, 1997).

In referring specifically to the heavily self-directed nature of the cue card approach, there was the possibility that participants would become disengaged. That being said, the research topic sits well within the participants 'domain' (i.e., is not a disconnected topic area they are being asked to comment on). It was hoped that this level of relatedness (Deci & Ryan, 2000) would ensure participant motivation and engagement in the task and lead to, as Breen (2006, p. 473) suggested, the FG being a "rewarding learning experience". As a final note on this matter, this was also the rationale for integrating the data collection within the participants ECB Level 4 course day. It was again expected that participants would be in the ideal 'head space' and 'mode' to engage in conversations and discussions on 'new' topic areas.

Finally, as identified, the variation in the sizes of the focus groups stemmed from participants' motivations for the course (i.e. 'leadership' or 'development') and a practical pitfall of the research process 'on the day'. The research strategy hoped to maximise the

smaller, sub-level communities of practice that coaches were already a part of. From a theoretical viewpoint, coaches were already taking part in situated social practices (Lave, 1991) and the research approach was simply an extension of this. The hope was that this would ultimately lead to more meaningful, open and honest conversations culminating in richer, thicker data (Schultze & Avital, 2011).

5.5 CONCLUSION AND NEXT STEPS

The current work has further developed the epistemological models of red and white ball cricket. The data generated in this chapter has continued to build on the findings of Chapter 4 and now offers clear evidence in respect to the two epistemological dimensions (i.e. Omniscient Authority and Certainty of Knowledge) that are key to coaches' approaches.

The thesis, until now, has focused its attention on the views of coaches, who are positioned to 'lead' the coaching process. As a result of unearthing such contrasting epistemological views, the next step is to explore the views held by those on the 'receiving end', and the extent to which these views are held by the type of developing athletes that these coaches are working with.

CHAPTER 6: EXPLORING PLAYERS VIEWS ON LEARNING

6.1 INTRODUCTION

Chapters 4 and 5 of the thesis investigated and critically evaluated the behaviours and practices of cricket coaches in red and white ball cricket (RO2) and critically examined coaches' beliefs across both formats (RO3). Within the thesis so far, a culmination of interviews (*n=24),* observations (*n=18)* and focus groups *(n=2)* with level 3 (*n=15)* and level 4 (*n=3)* qualified coaches has resulted in the identification of coaches having a unique coaching process when coaching in red ball cricket, and a unique coaching process when coaching in white ball cricket. These unique coaching processes reflected fundamentally different epistemological beliefs regarding how learning happens in red and white ball cricket. The work to date has resulted in the production of two distinct models of the coaching process within the different formats of the game [see Figures 5.4 and 5.5, chapter 5]. These models highlight significant differences in the types of environments and relationships created by coaches with their players, as well as significant differences between the methods used and judgements made by coaches when coaching in red and white ball cricket.

Whilst these findings have clear implications for coaches and their wider coaching teams, what has not been considered is the epistemological viewpoints of developing athletes. As identified in Chapter 2, there are positive implications in relation to the coach-athlete relationship if coaches were to spend time understanding their athletes' EC and hence their preferred methods of working and learning. These benefits include an increasingly effective and harmonious coach-athlete relationship with decreased levels of possible conflict. Consequently, the current chapter has turned its attention to working with players given the worthiness of the topic. More specifically, as a result of the previous findings, addressing

players' epistemological views is, timely, relevant and of significant interest (B. Smith et al., 2014).

Earlier work has suggested that the coach-athlete relationship is "at the heart of coaching" (Jowett, 2017, p. 155). In clarifying for readers, Jowett (2017) "4 C's" model identifies Closeness, Commitment, Complementarity and Co-orientation as factors that affect the coach-athlete relationship. A high-quality coach-athlete relationship can positively impact upon a range of aspects in the coaching process such as long term development (Jowett & Cockerill, 2003), athlete self-esteem (Lyle, 1999) and the athletes' perceptions of coaching (Becker, 2009). Importantly too, the coach-athlete relationship has also been identified as a source of stress and distraction for athletes (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999). In their work with Olympic athletes, Gould et al. (1999) found communication to be a key factor in leading to a negative coach-athlete relationship. Participants reported that communication problems lead to a number of issues such as a perceived lack of credibility of the coach and athletes feeling disconnected.

In returning to the work of Jowett (2017), the "4 C's" model addresses the *feelings, thoughts and behaviours* of the coach and athlete. However, there is a lack of research and acknowledgement regarding the impact of both the coach and athletes' philosophical alignment. Specifically, their epistemological beliefs and their connection to the coaching process requires further investigation. This becomes even more apparent in a sport which is played across multiple formats. Clearly, the nature of this relationship is critical to the success of any coaching process, let alone a coaching process involving three different games! Consequently, this chapter aims to critically evaluate the epistemological beliefs of players involved in red and white ball cricket (RO4). The chapter also continues the design and development of a framework that presents an epistemological basis of both red and white ball cricket (RO5).

6.2 METHOD

6.2.1 Research Design

In avoiding readers' eyes glazing over(!), the study continued its interpretive approach and attempted to integrate key learnings and successes from the approaches used in previous chapters. As a point to note, given that this chapter engaged a new group of participants, alternative methods were considered and will be outlined in the following sections.

6.2.2 Participants

Fourteen male cricket players aged 16-17 years old (M_{age} = 16 years, SD = 0.49) were recruited. Recruitment for the study was based on key criteria for inclusion (Patton, 2002). The inclusion criteria were developed as a result of the consideration of the 'developing athlete' context of the thesis [see 1.1.3, chapter 1] and focused on the type of 'programme' the participants were involved in. These criteria were; i) athletes were part of a recognised cricket performance programme for adolescents ii) this programme consisted of extensive intervention and interpersonal contact over a long period of time (i.e., 1-2 years) (Lyle & Cushion, 2016) iii) the programme consisted of playing competitive red and white ball cricket matches iv) the programme was increasingly holistic in nature (i.e. addresses more than simply the technical and tactical requirements of the players). Pseudonyms will be used when discussing participants throughout the remainder of this chapter.

6.2.3 Data Collection Procedure

6.2.3.1 Pilot Work

Pilot studies were conducted which included an exploration of various methods. Approaches piloted included; i) the use of a semi-structured interview prompted by a video ii) Focus Groups (FG) prompted by a video iii) Paired Interviews. The location and timing of researcher-participant interaction was also piloted alongside these practical methods. Example timings and locations piloted included; i) interviewing participants during a

matchday ii) interviewing participants post-training iii) interviewing participants outside of any cricket-related activity. Upon reflection, the methods piloted were deemed ineffective. Whilst it is not within the scope of the thesis to explore fully the step-by-step methodology of these approaches, reasons underpinning the relative lack of success of these methods included; i) inappropriate time and location to conduct high quality research ii) practical data collection methods distracting participants from the research objectives iii) a lack of conceptual clarity regarding the combination of paired interviews and FG within the same research design.

As a result of the pilot work, individual, semi-structured interviews were used. This continues the use of semi-structured within the thesis and is well accepted given it is a well-established practice in sports coaching when undertaking research with players (e.g., Francis & Jones, 2014; T. Webb, Dicks, Brown, & O'Gorman, 2020).

6.2.3.2 Interviews

Following informed consent (Appendix 5 and 6), semi-structured interviews (*n*=14) were utilised to collect a 'rich and thick' data set (Marx, 2012). Interviews, which were digitally recorded for later transcription, lasted between 29 minutes and 55 minutes (*mean duration = 40 minutes)*. Interviews took place across two locations, both of which were used as cricket training venues for the programme which the players were involved. This follows suggestions from Tausch and Menold (2016) regarding the convenience of the interview location.

The interview was divided into three key sections. Firstly, participants were asked about their own playing experiences. This was done as a means of *getting to know* the participants. Offering these relatively simple questions as a form of participants "settling in" (Frost et al., 2020, p. 254) is a well-accepted method of putting participants at ease in the early stages of an interview. This is done in the hope of producing richer and thicker interviews as a result (Bitten, 2006). The section continued and encouraged players to

identify their strengths and weaknesses, with players ultimately identifying key areas of *learning* they might address in future.

The second section explored more deeply players perceptions of how they suggested getting better at the learning areas they identified in section one. Example questions here included; *"You just told me that you needed to get better at/learn 'x' - talk to me about how you might go about that"* with associated prompts and probes such as; *"Why are you suggesting that particular way?"; "How does that actually help you to learn?"* and "*What would we literally see happening if we were 'walking the dog past'?"*

The final stage of the interview operated as an opportunity to check and challenge the players beliefs about learning and offered participants scenarios of increasingly everyday (as opposed to cricket specific) learning tasks. This allowed the researcher where appropriate to engage the participants in comparing and contrasting their views, as well as informally assessing the extent to which views were context specific. An example scenario that was commonly put to participants was; *"I've got amnesia and have forgotten how to paint. I need to paint the fence in the garden. How are you going to go about helping me to learn to paint the garden fence?"*. A full example interview guide can be found in appendix 7.

6.2.4 Data Analysis

RTA was used, as outlined in detail in Chapter 3, to analyse the data. During the analysis there was an increased amount of latent coding. This was as a result of the increased experience (of using the method) of the researcher and the continued immersion in the content of the thesis (Terry et al., 2017). The content of the interviews (i.e. using scenarios) also lead to the increased use of latent coding. As with Chapter 5, themes have been 'fully realised' in the form of 'Storybook Themes' (Clarke, 2017).

6.2.5 Addressing Trustworthiness

This chapter continues to draw upon the specific trustworthiness criteria identified at the outset of the thesis [see 3.3.3, chapter 3]. Once again, the focus of certain criteria has been heightened, whilst others softened. In particular, the criteria of worthy topic, sincerity, resonance and transparency took the lead within the current chapter.

One of the strategies that was particularly useful throughout this chapter was the use of a reflexive diary. The benefits of maintaining a reflexive diary ranged from exploring and refining the methodology, supplementing the content of the interview process and enabling me as the researcher to reflect on my experience(s) of the interview and analysis processes (Nadin & Cassell, 2006). Fundamentally, the outcome of keeping a diary was an increased level of self-awareness within the research process, as well as an identification of elements of the research process which required keeping and/or tweaking. From a trustworthiness perspective, the diary enabled increased levels of sincerity and transparency. As an example of these themes (and hence positive impact on the research process), see the following reflexive diary entry below as a result of an unexpected experience en-route to the interview venue;

> Date: May 2019
>
> Entry: What a ridiculous start to the day! Got caught up in some road rage getting down the single lane road to the club. In really good time to get there, get the room set up like last week and now I'm stuck behind this lorry and now someone else has blocked me in! Two drivers are F-ing and blinding at each other, and me!! – that's the last time I try and help! Really needed four interviews today but think the best thing to do is try for three and make sure that I give myself some time when I get there and don't rush straight in! I hate, being late, I told Dan I'd be there for 9, it makes me feel like I'm behind from the start!!

As an example of the reflexive diary enabling reflections on the interview process, and hence a continued drive towards transparency, a further diary entry below details a specific reflection relating to the nuances of the interview process with the teenage participants. This reflection was actioned and integrated into the interview process moving forward;

Date: May 2019

> The use of 'My Nan' as an example character in the conversation with players seems to be a really good way to unearth these guys views on non-experts in the coaching process. The 'Nan' part is so easy to connect with and keeps everything really relaxed. Some of the guys ask some really good questions back to see if she can help.

6.3 RESULTS

The approach used in this chapter follows that used in Chapter 4. In presenting the analysis and in respect of the significant amount of data generated across the study, raw data clusters (*n=20)* were developed. These raw data clusters encapsulated commonalities across the mass volume of codes assigned through the initial coding process. As a result, lower order themes *(n=6)* were created and developed into three storybook themes. These storybook themes were; i) *working out what's best in white ball cricket* ii) *learning your lines in red ball cricket* iii) *make learning easy.*

Organising concepts which influenced the analysis were similar to those identified in previous chapter (e.g. coaching practice and pedagogy and power relationships in the coaching process). Importantly however, *skill acquisition* and *the learning journe*y were additional organising concepts. As a consistent approach across the thesis, what follows immediately is an audit trail of the results. Following on, the storybook themes are presented and discussed in individual sections, using key quotes from participants.

6.3.1 Presenting an audit trail

What follows are examples of a number of the stages of the six step analysis process identified by Braun and Clarke (2013) [see 3.3.2.2, chapter 3]. Initially, Table 6.1 overviews the initial coding phase (i.e. step 2 of 6; Braun & Clarke, 2013). Example transcript passages are presented, along with the initial code assigned and an example of the development of a raw data cluster. Secondly, Table 6.2 presents an example of how lower order themes were created as a result of multiple raw data clusters (i.e. steps 3 and 4 of 6; Braun & Clarke,

2013). Finally, Table 6.3 provides readers with the full reflexive thematic analysis (i.e. step 6 of 6; Braun & Clarke, 2013).

Table 6.1 *Examples of transcript coding and generation of a raw data cluster*

Transcript Extract (inc. player)	**Code Assigned**	**Raw Data Cluster**
I wouldn't say to the coach to tell me straight away, I'd say to the coach to tell me a few things it could be so then if he works it out himself but them obviously if he keeps getting the answer wrong, tell him in the end. So, it could be back lift, just the way you're gripping your bat, but if he works it out himself then he knows why he's going wrong more than if a coach is telling him (Niall) Yeah as well oh yeah it's a bit of both because like if the player isn't sure or like maybe is not comfortable with a certain way then you can like say to the coach, I don't feel comfortable doing it this way maybe I should try a different way or whatever and then see what the coach says and they try to work it out between you, like which is the best way? (Ethan)	Collaboration 'from others' in the learning process	Collaboration in the learning process
Talking to players who play it regularly…or just a player who is better at that shot than you who you can learn off….you can just have a general chat…asking which way they prefer, which leg they prefer forward, how far across the leg goes on the crease, where you hit your hands from…asking a question makes you listen to the answer more carefully than when someone is just talking to you (Miles)	Learning through collaborating with a skilled player	

Yes, but that doesn't have to be with your Dad or family. Two or three mates could go down…You can ask for as many balls as you want from your Dad or a mate, but, with a coach sometimes, if you are not comfortable asking them or feel rude asking them… If it has not gone well and you can't ask for some more balls, you might feel a bit dejected (Caleb) I think that that can also be with anyone it doesn't have to be the coach…it's like good just to speak to another bowler about it and see how, what they think this stuff from a different point of view (Ethan)	Practice with peers	
It would probably be the same approach because they wouldn't like a coach saying "do it this way, do it this way" either, probably not going to be as open to learning it compared to "have a go when I chuck it with some tennis balls". Just try and hit it (Sam)	Creating an openness to learning	
Bowling I believe it's from both people because you're learning from the coach and then when you're bowling you're learning from having a go and how it feels (Otis)	Learning in bowling happens from the player and the coach	
I think the stuff you'd hear from a player-to-player would still be very similar because it's all parts of the skill that need to be practiced to be able to do the skill so I think it'd be similar stuff you'd hear but you could possibly hear how the player feeding plays the shot themselves, so seeking their perspective on how they'd do it (Rob)	If a peer was involved in the process, the player might ask for their perspective on how they play the shot	
Possibly yeah it'd be more, from the players perspective it'd be more what they think they're doing or what they think they've done right or wrong on certain shots so the coach might be asking them, how they think they've played that shot, whether they've hit it well or not or what they think they need to do to hit it well so that would be the player giving feedback to the coach (Rob)	Pro player leads the conversation; asks the coach questions about their performance	

Table 6.2 *Development of raw data clusters into lower order themes*

Example Codes from Interview Transcripts	Example Raw Data Cluster	Lower Order Theme
Collaboration 'from others' in the learning process Learning through collaborating with a skilled player Practice with peers Creating an openness to learning Learning in bowling happens from the player and the coach If a peer was involved in the process, the player might ask for their perspective on how they play the shot Pro player leads the conversation; asks the coach questions about their performance	Collaborative learning approaches with multiple stakeholders	Shared Responsibility in the white ball learning process
Players leading learning Shared player-coach responsibility in the learning process Player driving learning process through watching videos of experts Watching the video and 'breaking the skill down' (the player doing this – unprompted?) Players can try what they are told to(?) don't have to stick with it if it doesn't work for them Player knows more if they work it out for themselves compared to being told by the coach Approach to practice might depend on players confidence (lead by the player) Player learning by investigating/exploring [reverse sweep] YouTube videos	Player (learner) as key part of the learning process	
The coach asks questions to help the player learn Making players 'think about it' helps them to learn about/the skills During the demo, the player is tasked with watching specific areas and then feeding back (player led, 'by the coach') Use questions to learn complex skills (with parts) as then the learner understands the parts they need to get right and can ask themselves if they are doing it right when they practice The coach asking questions can help the player understand the process behind the outcome more	The use of questions to aid learning	

Table 6.3 *The full Reflexive Thematic Analysis*

Raw Data Clusters	**Lower Order Themes**	**Storybook Themes**
Collaborative learning approaches with multiple stakeholders	Shared Responsibility in the white ball learning process	Working out what's best in white ball cricket
Player (learner) as key part of the learning process		
The use of questions to aid learning		
Exploration as part of the learning process (White Ball)	Players should find their own method in white ball cricket	
Players finding *their* way		
Universal Coaching Approach	Coach leading the process	'Learning your lines' in red ball cricket
Coach in charge		
Demonstration as a method to aid learning		
Learning happens from other people, not yourself	Novice players as empty vessels to fill with knowledge	
Player as passive recipient of information		
Black and White solutions passed down from players to coaches	Knowledgeable technicians providing black and white solutions in red ball cricket	
Learning 'the right' technique		
Using professional players as technical models		
Any helper has to be a 'knowledgeable technician'		
Breaking skills down (skill de-composition)	A comfortable, linear learning process (to develop confidence)	Make learning easy
Practice structure to develop confidence		
Players being comfortable and confident when learning		
Starting with easy practices and gradually getting harder		
Supportive coach-athlete relationship		
Repetition to aid skill learning		

6.3.2 Storybook Theme 1: Working out what's best in white ball cricket

This storybook theme was created as a result of two supporting lower order themes. These were; i) *a shared responsibility in the white ball learning process* ii) *players should find their own method*.

The first theme, *a shared responsibility in the white ball learning process* encapsulated the increasingly constructivist approaches to coaching white ball cricket. When discussing how to learn skills in white ball cricket, what became apparent was that the responsibility for learning was shared. There were a number of stakeholders who were identified as being capable of involvement in the learning process (e.g. coaches, teammates, friends outside of the team and family members). When talking about who is responsible for driving the learning process, Ethan discussed; "both, as a player you have got to be willing to learn… I'd probably say the coach as well because they need to try and push you. I'd say it's a bit of both". When faced with a similar question, Niall also identified the shared responsibility in the process, if somewhat more directly than Ethan.

> I'll say a bit of both. I'd say as a coach obviously if you see something, you've got to point it out otherwise they're just going to keep repeating and repeating it. But if you're a player and something doesn't feel right then you've got to say something to the coach. It has got to work both ways. So, say if you're finding you're struggling…you've got to open your mouth and say to the coach "why am I doing this?".

There was an explicit acknowledgement of the role of more skilful or 'better' players within the shared learning approach. When referring to learning batting skills, Miles proposed working with "a player who is better at that shot than you, who you can learn off". On a similar note when discussing who was involved in learning practices for bowling, Ethan, who initially spent a lot of his early years in the sport playing with his grandad, outlined that it "can be with anyone, it doesn't have to be the coach" and went on to acknowledge that talking with someone who can offer you a shared, yet different perspective can be beneficial. He

outlined, "it's good to speak to another bowler about it and see how what they think (of) this stuff from a different point of view."

These views strongly reflect social constructivist beliefs about learning. They suggest that there is an equal importance placed on both the coach (and/or 'other' in the learning process) and the player (Lave & Wenger, 1991). The players here also acknowledged the involvement of people who have more experience and/or better skills than the person trying to learn the skill, as an important and beneficial aspect. Whilst the specific micro-level details of the role of '*the other'* in the learning process were not made explicit by the players, what is clear is the supporting role that is played. The thesis earlier referred to the work of Vygotsky (1978) [see 4.3.2.1, chapter 4] in relation to scaffolding being put in place to support players learning. What is clear from players' input is their positively held views of players being supported to achieve their goals and the advocation of having an active role in the learning process (Newmann, 1994).

As a noteworthy extension of this point, Josh identified nuances of this process based on the age and stage of the player who is doing the learning. Josh added detail and suggested that older, more experienced players would "drive the conversations" because "they are the one wanting to develop the skill" however "the coach would be more involved" when working with younger players given the lack of previous playing experience.

The second supporting lower-order theme, the idea that *players should find their own method* was underpinned by the idea of exploration. Exploration was the focus, as was the premise that players' ways should be *their own* (i.e. whilst there may be a technical model of the skill, players should seek to find *their* nuanced technical model to suit). Miles recalls how he went about learning the 'reverse sweep', a well-accepted batting shot in white ball cricket;

> How I learnt it was not sort of how a coach taught it (to) me…you figure it out the best for yourself. You can swap hands and legs…there are loads of different ways to play it…Finding your own way and the best way to play…Just mess around (with it) at first.

Miles later gave an insight into his view of where knowledge comes from; "(the coaches) need to sort of know how to play it, but I also need to work out myself how I am going to best play it."

Another player, Jack, also discussed exploring how to play a reverse sweep shot. Instead of a hands-on, practical exploration (i.e. physical), Jack discussed more of a cognitive exploration of the skill as a result of watching other players from across the world play the shot via online videos. In keeping with the theme, it is important to note the self-directed aspect of this idea;

> Watch videos on it…You can gauge like how to sort of do it really, where is the player sweeping it from or is premeditated completely? Have they consistently bowled that side?....(watch) different people all over the world. People in the sub-continent, Australia, the big one would be watching playing in England…they are understanding the shot.

Another participant, Caleb, clearly outlined the relatively significant amount of time that he had invested in informally analysing a new batting shot he was trying to learn. He did this by watching, pausing and re-watching video clips. Not only does this link with the cognitive aspect of finding a way (i.e., mulling over the videos) it also helps confirm the emphasis on the player within the learning process in white ball cricket (i.e. the *shared* nature as mentioned earlier in this section).

> I watched a lot of videos on YouTube, people like Joe. I watched Joe Root for the actual sweep, then I watched Usman Khawaja, for the reverse sweep as well. I didn't analyse it, but I watched all the sweep shots and then paused it to see where his hands and head are. [Caleb imitating how he would analyse the videos] "His foot isn't on the front", it is a short or big stride, whatever.

In discussing this lower-order theme, the views presented support the cognitive strand of constructivism. Players appear (perhaps implicitly) to acknowledge the role they have in bringing 'knowledge to the table' (Malone, 2003). As a result of investing time in watching video clips they are acknowledging that (some) learning happens as a result of learners building up their own knowledge (Sewell, 2002).

In summarising, Sam refers to both the physical and cognitive aspects of players finding a way when he suggested that coaches should "chuck them (players) a few tennis balls and let them find a way that is best to play it…Find the way that you feel would be easiest to play it and practice that". In working through Sam's thoughts, he continues to outline how this method is beneficial. In doing so, he links the previously identified theme of a *shared responsibility in the learning process* with the constructivist view that the coach will be available in a supportive capacity, through frequent interactions and feedback with the player (Roschelle et al., 2001).

> The player would feel more confident if they feel like they played it...If the coach was like do this, do this, they might feel like they have been forced into playing it that way. If they have found it on their own, they may feel a bit freer… If they do, they will have more fun playing the way they want and open to getting more off the coach and taking more in, compared to the coach telling them to only do it this way.

This section has presented players' views, specifically in relation to the learning process in white ball cricket. Players emphasised the benefits of increasingly constructivist approaches to learning when discussing white ball cricket. More specifically, players discussed the role of others to help the process, exploration as an important part of the process and the individualised nature of the solutions. As a result of this comprehensive review of the white ball learning process, the following section progresses to explore players' views on the learning process in red ball cricket.

6.3.3 Storybook Theme 2: Learning your lines in red ball cricket

This storybook theme, almost in direct contrast to storybook theme 1, was constructed as a result of coaches being at the forefront of the coaching process, with players in a secondary, passive role. There were three supporting lower-order themes. Firstly, *coaches are leading the process*. Secondly, *cricket 'technicians' are providing black and white solutions for players* which impacted on the final theme; *players are viewed as empty vessels to fill with*

knowledge. The remainder of this section addresses each of the lower-order themes in more detail.

It became evident that players believed that *coaches are leading the process* in red ball cricket. When discussing how to learn a traditional red ball batting shot, Otis discussed the role of the coach within the 1:1 style practice. When asked more specifically about how the practice would develop, Otis stated that; “maybe after 6 or 7 (balls), maybe a few overs, he’d (the coach) just come over and point out what I’m doing well and what I’m not.” When probed further about how the coach might intervene in this situation, Otis continued; “I’d probably expect them to tell me what’s wrong and then grab the cricket bat and then mirror it, what I’m doing, and then mirror the correct way”. Perhaps what is most interesting about this passage is the expectation of the somewhat unprompted intervention by the coach, seemingly at a time decided *by* the coach. This idea, regarding the role of the coach, was repeated by numerous players, including George; (the coach needs to) “Tell them what they can improve on and what they need to do" and Jack, who when questioned about who leads the use of video analysis within the coaching process (e.g., the drawing of lines on video clips) stated; “the coach…that is his trade”. The passages from players, reflect increasingly traditional approaches to learning which place the coach at the forefront of the process.

Linking and progressing this view, in relation to the second lower-order theme, players also believed that *cricket ‘technicians’ are providing black and white solutions for players.* In clarifying, this technician, although predominantly the coach, was also identified by players that it could be a number of other people (e.g. professional players, other team mates, others with cricketing knowledge). The influencing factor here was that these people had a level of technical, cricket (i.e. procedural) knowledge. As an example, during his interview, Owen was asked if ‘my nan’ (physically fully capable of taking part in cricket activity, but no cricketing knowledge!) would be able to help a player learn a batting shot.

Owen replied; “Not really, because she doesn’t really have a cricketing mind. She doesn’t know what the shot is, if they don’t know what the shot is then there is no point them trying to guide you through it”. When faced with the same question, George also shares a similar view regarding the requirement for any ‘helper’ to have knowledge of the game; “Probably not…because she doesn’t know the technical side of it. She doesn’t understand what he *(the player)* needs it for”.

As an extension of this theme, Caleb outlined the difficulty he had when working with a non-expert other. Often helped to practice and learn by his dad, Caleb outlined how he "can only use his words to an extent" because "he only played club cricket, after that, it might sound mean, but I can't listen to him."

The theme, *cricket ‘technicians’ are providing black and white solutions for players* contributes to a positioning of coach as expert, with players positioned as novices (e.g., Omniscient Authrity; Schommer, 1994). This significantly influenced the construction of the final lower-order theme, the idea that *players are viewed as empty vessels to fill with knowledge.* This final theme centred on the view that novice players are passive recipients of information. As with the previous example from Otis earlier in the chapter, Ethan spoke about where information (in this instance feedback) came from and how it was delivered within the coaching environment, describing;

> It's probably better if it was from a coach if you know what I mean, so they're giving you feedback…so they'll probably say 'get down with your head close to the ball and then your bat, keep in line, keep as still as you can'

This also seemed to be more apparent when participants were commenting on the coaching process with younger players. Miles clearly outlines how coaching, (or teaching as he describes it) is different for younger and older players, with junior players being given black and white solutions;

> For teaching, I think there is. The traditional way (to play the shot) is to sort of go back and across. For juniors, that is how it will be taught to them. When they start getting into senior teams and get out playing the shots, they will have a look at it and find their own way of playing it, their own technique

Finally, Caleb and George appeared to suggest that learning happens from someone else. When speaking about how the coach helps the learning process, Caleb reflected on his own experience; "Say if there were a couple of balls where my head wasn't quite over the ball, he (*the coach)* would say 'move your head', 'watch you head coming up', 'make sure your weight is going towards the ball.'" Perhaps more bluntly, George simply suggested; "You need to copy a shadower, you cannot learn from yourself."

What is striking is the significant difference between players' beliefs in relation to learning in red ball cricket. This storybook theme reflects increasingly traditional beliefs about the coaching process, which are underpinned by increasingly behaviourist and perhaps cognitivist beliefs. In referring to earlier work from the thesis [see 2.4, chapter 2], the themes presented here suggest that coaches operationalise the learning process through coaching behaviours such as instruction and demonstrations. Perhaps more fundamentally, learning is defined as a change in behaviour, directly as a result of a relationship between behaviour and consequences (Carlson & Buckist, 1997). Ultimately, learning in red ball cricket appears intertwined with the idea of players having more technical knowledge and becoming more technically proficient. This occurs as a result of the coach *giving* this to players. In regard to cognitivism, readers are referred to the earlier questions [see 2.4, chapter 2] regarding the ways in which coach behaviours are operationalised. Once again, it is the *attention* phase (Bandura, 1977) which is of relevance here. Fundamentally, coaches appear to be directing learners' attention to the required aspects. In summarising the links to the theories of learning, what appears is that learners are somewhat passive recipients 'of' learning (Harris, 2000).

At present, the results section has addressed players' beliefs about the learning process, specifically in relation to the different formats of the game (i.e., red and white ball cricket). What follows in the final sub-section is an exploration into players' views on how to operationalise (or put into action) the learning of these new skills.

6.3.4 Storybook Theme 3: Make learning easy

The key lower-order theme which led to the construction of this storybook theme was *a comfortable, linear learning process (to develop confidence).* What was clear was players' views that the learning process should be easy. Players often spoke about the need to start 'easy' and progress to more challenging learning practices, regardless of the format of the game in question. It also appeared that players held a belief that skills should be perfected in this early practice before moving on to more challenging practice types. George suggested that "players have to start off with the basics", whilst Caleb described an approach he had used in the past;

> I feel the way I went about it was the right way because it is going in stages. Starting on my knees, short underarm feeds…Going from one knee to the stance, then still overarm, overarm with different line, length, and sweeping everything. I would recommend that because I just feel it is slow and steady.

Rob shares this view and clearly outlines progressive practice that increases in difficulty as the performer gets better at the skill in question;

> I think it starts, ways to practice certain skills like that start off with more simple drills just to fine tune the skill so things like just underarm throw downs…then progressing into actually hitting cut shots off a moving ball, a ball that's bouncing off a wicket to…so when that's been done for a while you can progress to possibly using the bowling machine.

There was also a focus by players on the role of repetition within the learning process. Many of the players promoted the use of relatively blocked practice (e.g. Shea & Morgan, 1979) with a high number of repetitions. As Rob continues to outline;

> I personally think it would be a lot down to the repetition of doing something so the easiest way to fine tune or perfect a skill in cricket that's quite hard, a lot of it is down to repetition because the more you, constantly practice it, the more it almost becomes

> muscle memory so it becomes, you're used to doing it and you know what you're doing.

Miles also supports this "over-and-over again" practice. When outlining why this is beneficial for players, Miles suggested; "Sort of grooving it. Learning the technique. Grooving it, getting it right every time. Consistent." Finally, Caleb offered his thoughts on the benefits of such practice, suggesting "it develops good muscle memory, it also develops confidence." Whilst potentially a relatively traditional and somewhat assumed stance on methods of practice, Caleb continues to provide a rationale concerning the more extensive, psychological benefits of practising in this way. "The learning point from it is learning that you can do it, rather than thinking that you can't do it. You have to learn that you can do it, which gives you the confidence to do it again."

In drawing this section to a close, the evidence presented supports the notion that players promoted a linear and stage-like approach to the learning process. When linking these ideas to the skill acquisition research, there are a number of relevant questions. Previously, Williams and Hodges (2005) discussed the *myth* that "specific, blocked practice of a single skill is essential for skill learning" (p.641) and acknowledged the historical (e.g. Schmidt, 1975) evidence base regarding the positive role of variability in the development of motor programmes (i.e., that variability is in fact desirable). This concept has continued in the more recent literature (e.g., Chow et al., 2016) with researchers promoting the use of non-linear methods to promote players developing adaptable technical solutions. What appears then, is the belief of *automaticity* as being beneficial to learning, a belief seemingly held by players, is somewhat dated (e.g., Chow et al., 2016). That being said, it is established that reducing variability in the skill and practicing in isolated and de-contextualised methods does help players to increase their (short-term) *performance* of the skill (Schmidt, Lee, Winstein, Wulf & Zelaznik, 2018). In this instance players appear to be promoting methods do develop performance, as opposed to long-term learning.

Having presented the three storybook themes that were constructed through analysis, the chapter continues and discusses the implications of players' beliefs, specifically in relation the epistemological dimensions which have been the mainstay of the thesis.

6.4 DISCUSSION

When re-visiting the reflexive thematic analysis of the data (i.e., Table 6.3), what is clear is that there are a number of specific epistemological dimensions which become the focus. Firstly, the idea of the source of knowledge (i.e. where does knowledge come from?) is a major consideration within the chapter. This epistemological dimension is present within both storybook themes 1 and 2 (i.e., *working out what's best in white ball cricket* and *learning your lines in red ball cricket*).

In addressing the subsequent lower-order themes in relation to storybook theme 1 (i.e. *working out what's best in white ball cricket, shared responsibility in the white ball learning process* and *players should find their own method in white ball cricket)* there is an alignment to an increasingly sophisticated epistemological stance, in that the learner is involved in the creation of knowledge with the "guided" support of another, e.g. a coach (Grecic & Collins, 2013, p. 155). This positioning was often as a result of players perceiving that there were 'less rules' about how to play the relatively new form of white-ball cricket compared to the masses of perceived experts (*and as an interesting side note in itself, these experts being hugely successful players turned coaches*) within the red ball game. Exploring the current findings from a learning theory perspective, players were favouring more constructivist, social and active learning approaches (Lave & Wenger, 1991; Roschelle et al., 2001; Sewell, 2002) in an attempt to help players learn white ball skills.

On the other hand when considering storybook theme 2; *learning your lines in red ball cricket,* the lower-order themes of *coach leading the process, novice players as empty vessels to fill with knowledge* and *knowledgeable technicians providing black and white*

solutions in red ball cricket suggest an increasingly naïve epistemological view of where knowledge comes from. In these instances, technical information is *given* to players to utilise and at a micro-level. This often resulted in suggestions of coach driven, highly directive and prescriptive practices. This stance is certainly more aligned to a naïve epistemological stance, in that knowledge is passed *down* from expert to novice (Schommer, 1990). Continuing the contrast, it seems players are proposing more structured and increasingly passive approaches to learning (Harris, 2000) associated with behaviourist theories of learning in order to learn and develop skills required in red ball cricket.

In linking with the previous research in this area, this chapter offers support to previous work suggesting that participants have different beliefs within different contexts (e.g., Beers, 1988; Mori, 1999; Roth & Roychoudhury, 1994). In direct contrast, the findings here would question the findings of Schommer and Walker (1995) who suggested that the beliefs of students in education were similar across academic domains. In clarifying, the domain in question is Cricket, the beliefs held are different across said domain (i.e. the formats).

Moving on to discuss the final storybook theme, *make learning easy*, the epistemological dimension that is prevalent here is the certainty of knowledge (Schommer, 1994). The responses from players in this chapter infer an epistemological positioning whereby knowledge is viewed as certain (Schommer, 1994) (i.e., getting aspects of the skills *right).* Underpinning this, players positioned themselves using a dualistic perspective (Perry, 1970) in supporting the use of repetition as *the right way* in order to develop muscle memory. This aspect concerning the certainty of knowledge manifested itself through players outlining that the learning process should be linear, in order to ensure learners were both able to 'feel comfortable' on their learning journey, alongside ideas such as learners 'getting it right' before progressing onto the next, so-called phase of the learning process.

6.4.1 Considering the players perspective of the coaching process

What appears then is that players have varying beliefs. Beliefs about the source of knowledge are context-specific. Beliefs about the certainty of knowledge are more ‘generalised’. This finding is certainly worthy of further discussion and builds on previous epistemological research (Ruddick, 1996). While at face value, players may hold beliefs that acknowledge the 'shades of grey in the learning process by having a range of beliefs, i.e., there is no 'one approach', it may also be considered that the beliefs they do hold, are in fact, black and white. Players within the current study held beliefs that there are definite ways (i.e., black and white) in which learning should happen in both red-ball and white-ball cricket. At this stage, it is essential to consider the particular context in which this study took place.

Given that the participants within the study were ranged in ages between 16-18, it is worthwhile drawing upon previous work by Perry (1981) and Entwistle and Peterson (2004). Perry's work suggests that as students enter the world of higher education, they assume knowledge is pure and can be passed down (i.e. dualistic). As their educational life continues, their views change and development towards more relativistic views. The following participant quote aptly shows this;

> There was one thing I expected – I expected that when I got to Harvard … I came up here expecting Harvard would teach me one universal truth … took me quite a while to figure out … that if I was going for a universal truth or something to believe in, it had to come from within me
>
> (Perry, 1968, p. 38)

In an attempt to make connections between the findings of the current chapter and previous research, it would appear that players are currently viewing learning from a dualistic perspective, i.e., there is a right or wrong way. There are several possible factors which could be influencing this view. There is the possibility that players are reciting the views of their coaches within their cricket programme. If this is how the players are coached on a day to day

basis, it would not be surprising that they would relay these messages during the research process. Secondly, given the players are also students within education, the educational climate which they are placed in should also be considered.

In drawing the discussion towards a close and making connections between these two themes (i.e., 'Omniscient Authority' and 'Certainty of Knowledge'), I present readers with a *coaching process based on the players perspective* (i.e., Figure 6.1 and Figure 6.2) to show the similarities and unique characteristics between those presented in the previous chapter and the views of players in this chapter. Fundamentally, the current research appears to have unearthed some potentially interesting and useful insights for cricket coaches and players alike, concerning forming, maintaining and perhaps maximising the coach-athlete relationship when looking from an epistemological perspective.

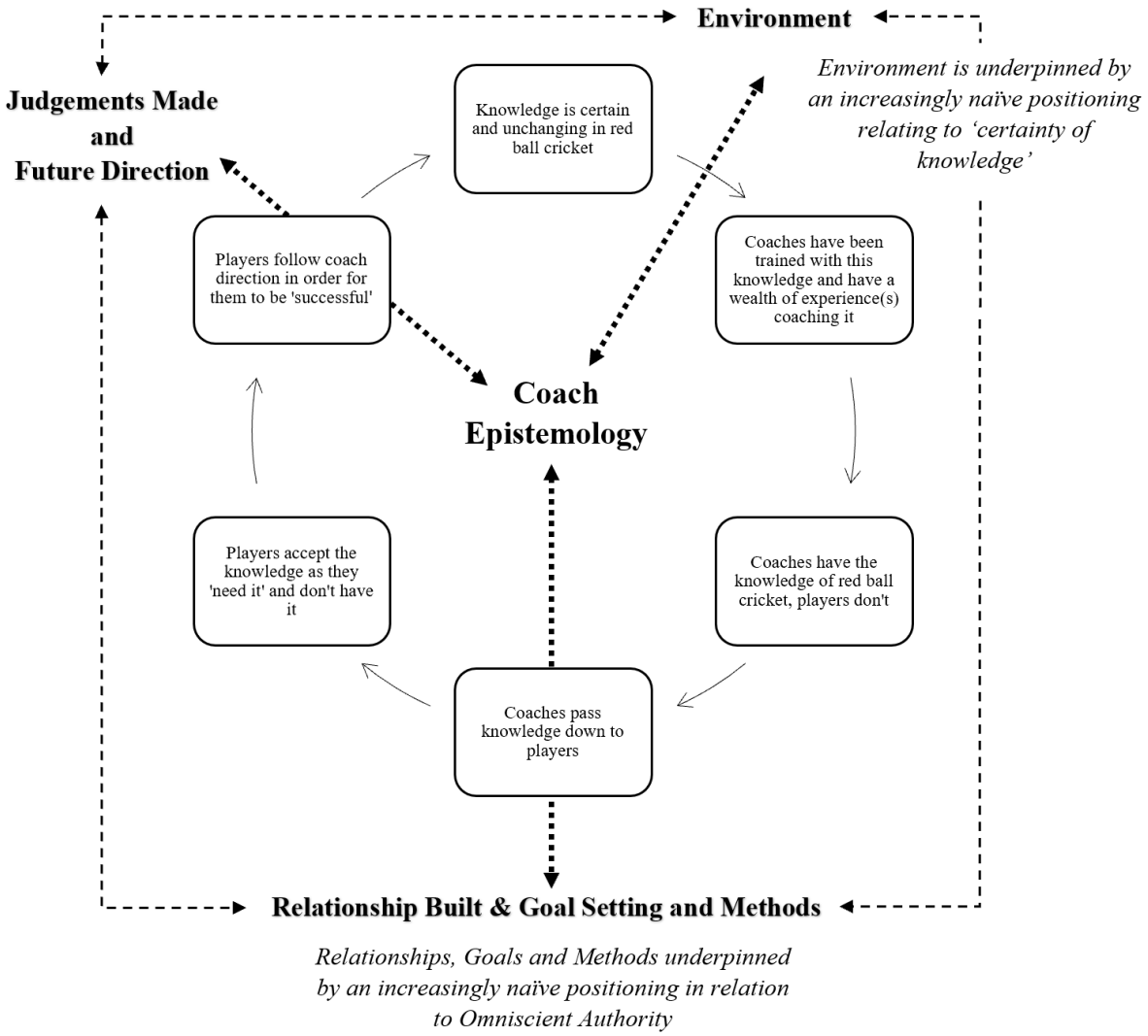


Figure 6.1 An overview of the connections between the source and certainty of knowledge in the red ball coaching process – a players' perspective.

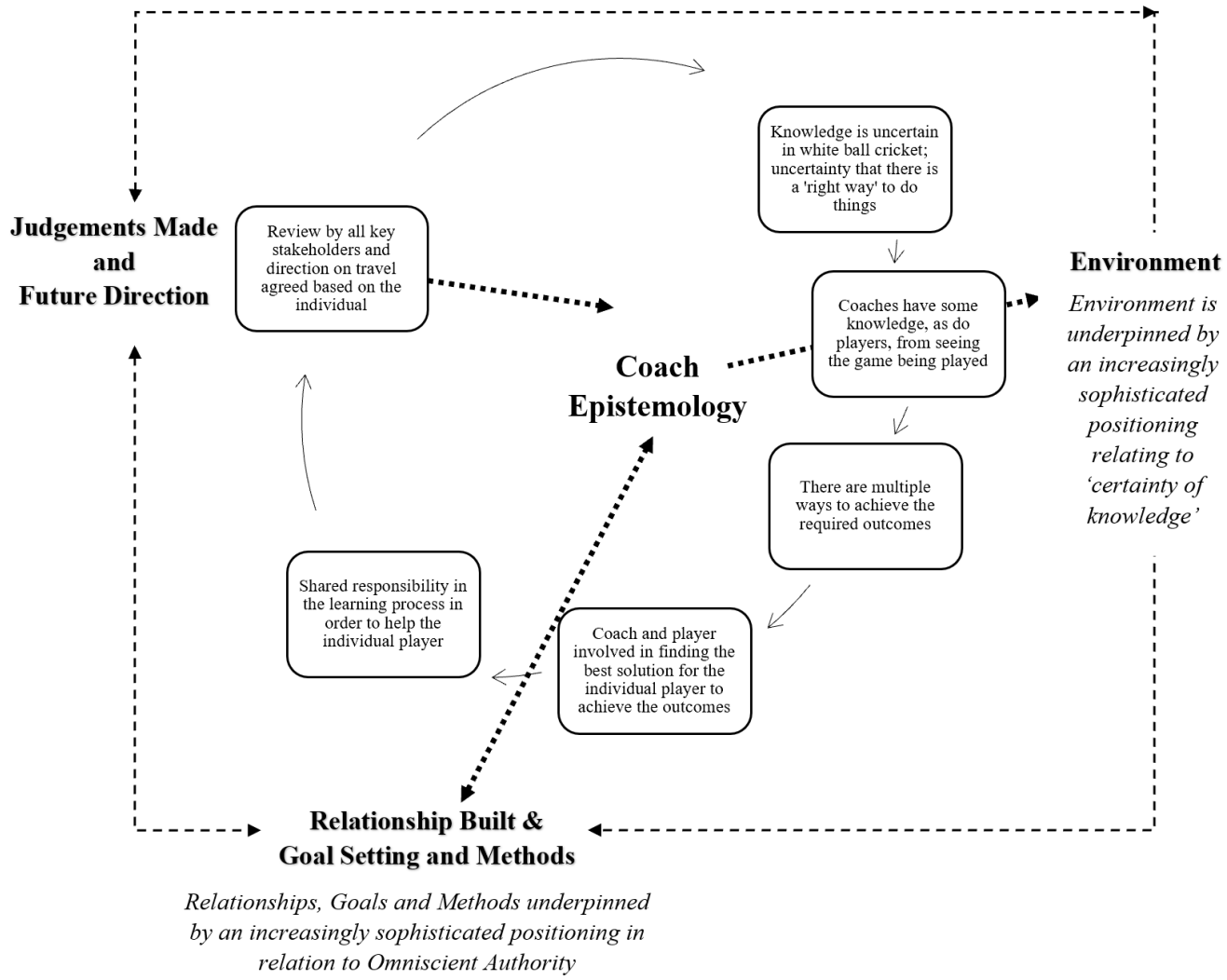


Figure 6.2 An overview of the connections between the source and certainty of knowledge in the white ball coaching process – a players' perspective

6.4.2 What does this mean for cricket coaches?

In an attempt to clearly outline the implications for cricket coaches, this final step of the chapter will succinctly highlight the potential harmony and conflicts between players and coaches' epistemological positions. Given the previous chapters of the thesis have focused on coaches' epistemology, it seems pertinent at this stage in proceedings, to address the positions of the two major stakeholders in the coaching process side by side. What is presented below (Table 6.4 and Table 6.5) are comparisons of players and coaches EC's when considering how learning happens in the red and white ball cricket. What follows are a number of brief 'nudges' to coaches, based on the overall progress of the thesis so far.

Table 6.4 *An overview of players vs. coaches EC in red ball cricket*

Players views on learning in Red Ball cricket (identified in chapter 6)	**Component of the EC**	**Coaches views on learning in Red Ball cricket** (identified in chapters 4 & 5)
Increasingly naïve position on the spectrum.	Epistemological positioning	Increasingly naïve position on the spectrum
Coach at the forefront as 'they have been trained with the knowledge'. Players listen to the coach as they have the knowledge players need in order to be successful	Environment and relationship built	Non-threatening and Informal coach-led environment, clear rules/KPI's of how to 'play the game', which in the main, is led by the coach
The goal is skill mastery	Goal setting	Goals based on what the format requires. Knowledge of what the format requires is identified by the coach and the macro-political structure
A focus on the technical. Players supported in developing 'the right' technique by stakeholders with sound procedural knowledge of the game. Approaches to learning are staged (i.e. linear) and move from easy – more challenging	Methods	Traditional closed practices, and relatively high volume of repetition in an attempt to create and repeat 'good technique' and competent players
Is technique getting better? Can players progress to a more challenging learning activity?	Judgements made	Success based on technical development of players role specific skills
Mostly identified by the coach – what is the next skill to be mastered?	Future direction	Mostly identified by coach

Table 6.5 *An overview of players vs. coaches EC in white ball cricket*

Players views on learning in White Ball cricket (identified in this chapter)	**Component of the EC**	**Coaches views on learning in White Ball cricket** (identified in chapters 3 + 4)
Increasingly sophisticated position on the spectrum however some naïve underpinnings	Epistemological Positioning	Increasingly sophisticated position on the spectrum
Shared responsibility between player and coach in an attempt to enable players to find their own method of how to play white ball skills	Environment and relationship built	Supportive, informal and collaborative environment where the coach creates opportunities for the player to take control. As a result, opportunities for players to make decisions
Goals created by player and coach	Goal setting	Goals based on real life situations players may face in games. Often negotiated and agreed by player and coach
Staged and linear methods used. Simple learning activities to start the process, progressing onto more challenging activites as the player shows (technical) progress	Methods	Increasingly open and game related practices (**note:** not necessarily game based). Increasingly randomised practice with an emphasis on including player decision making within practice
Success based on the development of (individualised) technique. Review incorporates a questioning approach from the coach to encourage player input	Judgements made	Success based on players increasing understanding of their role within the game and ability to interpret and apply individually appropriate solutions to the problems faced
Developed collaboratively between coach and player	Future direction	Developed collaboratively between coach and player

There are a number of relatively simple applications for coaches, which if applied might yield some significant benefits in the effectiveness of coaches' day to day work with players. Firstly, coaches are encouraged to open up conversations with their players about 'how learning happens'. Whilst it is not the intention to prescribe a method of doing this to coaches, opening up conversations and discussions with players around the learning process may allow both stakeholders to more fully understand the actions of the other in the learning process (e.g. the player may understand why at times the coach continually questions the player during the learning process and/or the coach may start to understand why the player is not forthcoming with solutions to their own problems). Inevitably, it may also bring closer to the surface any potential conflicts or mismatches in beliefs, which if addressed, should result in positive outcomes for working player-coach relationship.

Secondly, it is hoped that this presents another opportunity for coaches to interrogate their beliefs about learning across red and white ball formats of the game when working with players in this context. Finally, given it is commonplace for coaches to work in 'coaching teams' within this context, it is certainly a recommendation of this work that coaches examine their epistemological beliefs across such coaching teams in order to establish where both harmony and conflict occur.

The discussion has raised a number of important aspects in relation to the findings of the chapter. What follows however is an acknowledgement of a number of limitations of the current chapter and overview of strategies used to overcome them.

6.4.3 Limitations

There were a small number of practical limitations identified within the current chapter. The first of which centres around the pre-existing relationship, or lack thereof, between the participants and myself as the researcher.

As a result, the first stage of the interview was structured so that the participants were encouraged to talk about themselves (a topic which was assumed to be relatively straightforward). This 'setting in' aspect of the interview is well established (e.g., Frost et al., 2020; Warriner & Lavallee, 2008) in developing participant rapport. As a second means of building rapport, I undertook the semi-structured interview process due to the perceived credibility and hence buy-in that I would receive as a level 4 cricket coach (i.e. the interview was positioned as a *cricket chat, between cricket blokes).*

Herein lies a second limitation. Specifically, the possible power dynamic present within the interview. Power in an interview can be built and influenced by a range of factors (e.g. socio-economic status, gender, ethnicity etc.). The relevant factor here includes power built as a result of educational and/or professional background (Anyan, 2013). Put simply, as a highly qualified cricket coach, interviewing aspiring cricketers, participants may have felt that they had to tell me, what I wanted to hear! In avoiding intentionally creating this power over participants (and in explicit attempts to reduce it), I used strategies which included aspects of positive body language (e.g., shaking hands) and welcoming semantics (e.g. '*thanks for giving me some of your time'* and the use of the term *'mate'* as the interview developed). These strategies sought to put myself and the players on the same 'level'.

The final limiting factor was the single data collection point utilised in the chapter, potentially offering somewhat of a snapshot view. That being said single, semi-structured interviews are commonplace in the sports coaching literature, both historically (e.g., Becker, 2009) and more recently (e.g., Foulds, Hoffmann, Hinck, & Carson, 2019) and as a result, were deemed an appropriate methodological choice. Readers should also note the similar sample size between the current chapter (i.e. 14) and the published work identified above (i.e., 18 and 12 respectively).

6.5 CONCLUSION AND NEXT STEPS

The aim of this chapter was to critically evaluate the epistemological beliefs of players involved in red and white ball cricket (RO4), along with the ongoing development of a framework that presents an epistemological basis of both red and white ball cricket (RO5).

Findings of the chapter highlight two key epistemological dimensions which underpinned players beliefs about learning skills in red and white ball cricket, namely the source and validity of knowledge (i.e. Omniscient Authority) and 'The Certainty of Knowledge'. As a result of the findings, coaching process models in both red and white ball cricket have been created from a players' perspective (i.e. Figures 6.1 and 6.2). These models continue to integrate the work of Grecic & Collins (2013) as a framework to 'hang' the current findings on, highlighting the practical implications of these beliefs on the way in which players believe coaching practice 'should happen' (i.e. the EC).

Interestingly, these epistemological dimensions in question are the same epistemological dimensions that are influencing their coaching counterparts. More specifically, players held different beliefs about these epistemological dimensions based on the format of the game being discussed. This was also found in the previous chapters when working with coaches. Players held increasingly naïve epistemological views in relation to learning in red ball cricket. Specifically, that the coach is at the forefront of the process, and 'cricket knowledge' is passed down to them by knowledgeable others in the process. Players held increasingly sophisticated views in relation to learning in white ball cricket and acknowledged the shared nature of the learning relationship in this format, along with players needing to find their own, individual way in which to go about learning and executing skills.

As a result of these findings, an important next step is to *action* these findings with cricket coaches working with developing athletes. After significant investment across the thesis so far, it is now time for the thesis to apply these findings in the real-world. Directly

exposing and discussing cricket coaches' beliefs and the extent to which they influence their coaching approaches in red and white ball cricket would align to the pragmatic aims of the thesis [see 3.2, chapter 3].

One more general finding from the study, which appeared independent of the format of the game, was players' views that the learning process should be made easy. This relatively naïve position reflects the learning process as somewhat linear. Players promoted learning of a step-by-step nature, where progress was as a result of 'completing' the requirements of the initial, simple, learning activity. This finding will also be carried forward and embedded into the next chapter when explicitly unpacking coaches' beliefs about how to structure the learning process.

Having comprehensively addressed RO1 to RO5 within the thesis to date, the focus now turns to addressing the thesis' final aim and presenting and critically reviewing the framework(s) with cricket coaches working with developing athletes (RO6).

CHAPTER 7: THE FINAL COUNTDOWN! EXPLORING COACHES' EPISTEMOLOGY IN PRACTICE USING AN ACTION RESEARCH APPROACH

7.1 INTRODUCTION

In re-visiting the sports coaching literature [see 1.1.2, chapter 1], the past two decades have seen a significant shift in emphasis in relation to the sports coaching process. What once was viewed as a somewhat linear process has become well-established as multifaceted, within specifically identified contexts (Horton, 2014). A range of authors have published in this area, historically Saury and Durand (1998), R. L. Jones et al. (2016) and more recently Lyle (2020). A succinct overview of this complexity coaches are faced with comes from Nash (2014, p. 311), who writes:

> The coach has to become the orchestrator of the coaching process, the one who understands the athlete/s, the team, the support staff and the objectives of the coaching programme. This is a daunting and complex task and perhaps the more the coach understands the process and all the ramifications, the more overwhelming it becomes

Lyle and Cushion (2016) offer somewhat of a real-world view of the complexity of the coaching process in distinguishing between what they term the "planned and managed coaching process" (p.48) and the reality of actually implementing this process! As they identify, the social context, inter-personal dynamics, contested and multiple goals, identifying and delivering precise workloads, the difficulty in assessing progress and individual effort, attention and motivation, can all lead to coaching becoming a challenging, dynamic and difficult process to manage.

In eluding to work presented earlier in the thesis [see 1.1.2, chapter 1], Lyle and Cushion offer a blended appreciation of both the cognitive and social aspects of the sports coaching process. As a final ingredient in the sports coaching process mix, adding the acknowledgement of the socio-cultural-political challenges that coaches face (e.g., Till et al., 2019) presents a less than straightforward picture for those involved.

In turning the attention to the current work, the thesis, has perhaps only added further to the complexity of the coaching process for those coaches in cricket as a result of an in-depth exploration of epistemological beliefs and the EC across both red and white ball cricket. Nevertheless, exploration of the previously under investigated area of epistemology within cricket has been beneficial. In building on the current findings, the final act of the thesis was to provide insight for coaches into their applied practice, as a result of applying the thesis' findings. Once again, this final step of the thesis is an attempt to meet the pragmatic aspirations of the thesis [see 3.2, chapter 3]. Prior to outlining the structure of the chapter for readers, it is important to review the significant progress the thesis has made across the previous chapters.

When the thesis initially examined the literature in relation to epistemology and its application to cricket coaching in Chapter 2 (i.e., RO1), it became clear that the coherence of coaches' EC was of significant importance. More specifically, was the extent to which coaches' decision making was influenced by epistemology, ultimately resulting in increasingly behaviourist or constructivist approaches to coaching in red and white ball cricket in the form of an EC.

Chapter 4 and Chapter 5, which investigated and critically evaluated the behaviours and rationale of cricket coaches' practices and critically examined coaches' epistemological beliefs across formats, revealed significant differences in approaches to coaching across formats. Simply put, coaches viewed knowledge as increasingly certain in red ball cricket, with this knowledge being passed down to players by experts. In white ball cricket, coaches viewed knowledge as increasingly changeable and learning to be much more collaborative. A longitudinal approach (see chapter 4) was supported by working with a wider sample of participants (see chapter 5). As a result, these findings were more comprehensively

investigated, and ultimately supported and extended. Given such stark differences in coaches approaches, the thesis sought the views of players in Chapter 6.

Findings within this context revealed players tended to share coaches' distinct views across red and white ball cricket coaching. Namely, that players perceive knowledge to be delivered *to* them, *from* experts and/or knowledgeable others in red ball cricket. In white ball cricket however, players too viewed the learning process as increasingly collaborative.

In addressing the final stage of the thesis, the focus has turned to the utility of the work. As stated at the outset, one of the aims of the thesis was for it to inform professional practice. Specifically, for coaches, on the floor, when working with their players. In doing so, this chapter continues the design and development of a framework which presents the epistemological basis of both red and white ball cricket (RO5) which has been prevalent throughout the thesis. The chapter also addresses the final aim of the thesis, which is to present and critically review the framework(s) with cricket coaches working with developing athletes (RO6). In addressing the personal and professional ambitions of the thesis (see chapter 1.3) the current chapter uses a hands-on research approach, which ultimately engages full time coaches in reviewing and reflecting on *their* coaching practice, with *their* players.

7.1.1 Overview of the Chapter

The introduction section has set the scene for readers and identified the specific objectives that are the focus. Given the significance of this chapter as the culmination of the thesis' work, it is important to clearly lay out for readers what will follow.

Firstly, the method section introduces Action Research (AR) as a research design and considers in detail the relevance of the AR approach at the current stage of the research process. Like the chapters before it, the method section continues to provide the background to the approach, including a step-by-step process to the data collection procedure.

The results section is considered in two parts. Part 1 specifically targets the initial aim of the chapter (i.e., RO5) and a full overview of the Reflexive Thematic Analysis (RTA) of online interviews is presented. What follows, is a presentation and discussion of the key storybook themes developed alongside the evolution of the previously presented frameworks in relation to the epistemological basis of red and white ball cricket. Part two of the results, specifically targets the second aim of the chapter (i.e. RO6). This section integrates a key aspect of the AR process, the concept of *utility* (i.e., what are the uses of this work for the participants?) In doing so, a thematic map is presented along with the discussion of key themes to emerge in respect of RO6 (i.e., to present and critically review the framework(s) with cricket coaches working with developing athletes). The results section ends with a short section focused on *social validation,* a key tenant of AR.

The discussion section that follows includes individualised proposals of future AR cycles and I offer my own researcher reflections on the AR process. Finally, the chapter closes by offering readers conclusions of the key findings.

7.1.2 Researching in extraordinary times

It is important to signpost readers to recognise the unique circumstances in which this study took place and the impacts that this had on the overall planning, design and implementation of the study. In the latter stages of 2019, the outbreak of Coronavirus (Covid-19) took hold across the world, and severely impacted on daily life. In line with the developing government guidelines in the UK at the time, the study leant on its pragmatic roots. As a result, I adapted an approach which had intended to use observations of coaches in practice, along with a follow up face to face interview. A fit for purpose approach was created which maintained the ambitions of the thesis, whilst also catering for future research activity should governmental guidelines have changed.

Significantly, the study took place at a time when sport, from professional to amateur level had been postponed - as a result of government guidelines. As a result, first-hand observations of coaching practice were simply not possible. Clearly, one possibility was to delay the study until it was safe and possible to undertake observations of coaches in practice. However, with no clarity on when any return to sport would happen, and the submission date of the thesis eighteen months away, there were concerns regarding the impact of this delay on the quality of the study and ultimately the submission of the thesis.

Given the progress of the thesis to this point and results to date, there were some simple solutions identified which would a) maintain the integrity of the thesis and its practical ambitions b) ensure a continued use of an interpretive positioning to explore individuals beliefs c) continue to meet the stated aims of the thesis. Research tools have been selected which have enabled a relatively smooth continuation of the thesis and accommodated for the relatively unknown and somewhat unpredictable circumstances presented as a result of Covid-19. To summarise the above section, I would highlight the pragmatic decisions that I have had to make in response to the Covid-19 pandemic in order to ensure that the stated aims of this thesis can be achieved.

7.2 METHOD

7.2.1 Research Design

7.2.1.1 An Action Research approach

As a research paradigm, Action Research (AR) attempts to improve the social situation under investigation (L. Smith, 2010). As a second defining characteristic, AR is a deliberate and planned intent to intervene into current practice (McMahon, 1999). This second characteristic helps to identify AR as more than simply reflective practice. AR results in strategic action (McMahon, 1999) from the outset and whilst reflective practice might lead to change, this is not an explicit requirement. As McNiff (1988, p. 5) states, AR is "…being aware and critical

of that [practice] and using this self-critical awareness to be open to a process of change and improvement of practice". What is noticeable here is the appropriateness of AR as an approach in relation to the pragmatic philosophical orientations of the thesis [see 3.2, chapter 3].

Participants in the AR process should share a common goal. In this case, the improvement of cricket coaching practice in red and white ball cricket. It is accepted however that participants bring their unique views and dispositions to the work (Cohen, Manion, & Morrison, 2007). Given the interpretive underpinnings of the thesis as a whole, I as the researcher accept, and am comfortable with, the dispositions of participants. Ultimately this reflects the view that all knowledge is relative and subjective (Markula, Grant, & Denison, 2001). Continuing the focus on the participants, AR is participatory since those involved are integral members of the research, as opposed to passive outsiders. AR assumes that given their lives are affected by the problem under study, participants should be engaged in investigating it (Stringer, 2007). As a result, AR initiates change based on a (united) feeling and ambition to create a 'better human situation' (Friere, 1982). AR therefore becomes practical, reflective, and pragmatic as its focus is on solving problems it encounters along the way. It is this collaboration and the joint construction of knowledge to improve the current situation that distinguishes action research from other forms of research (Greenwood & Levin, 2007; McNiff & Whitehead, 2006).

Many models of AR have been proposed (for a full review see; Mertler, 2019) and whilst these authors use varying semantics to depict their AR processes, what is consistent is the cyclical nature of the AR process. More specifically, all share the premise that the research process *builds upon* the previous phase in order to gain a fuller understanding of the problem under investigation. As a relative 'newbie' to AR as a research approach, Riel's (2007) overview of the AR process appears clear and concise. That being said, it could be

interpreted that once a cycle is complete, the research simply moves on to a new, stand-alone cycle. It perhaps misplaces the integrated nature of the process. As a result, the chapter leans on the representation by Stringer (2007) of a "simple, yet powerful' (p.8) integrated AR framework (i.e., Figure 7.1) which emphasises quite clearly the cyclical nature of the AR process.

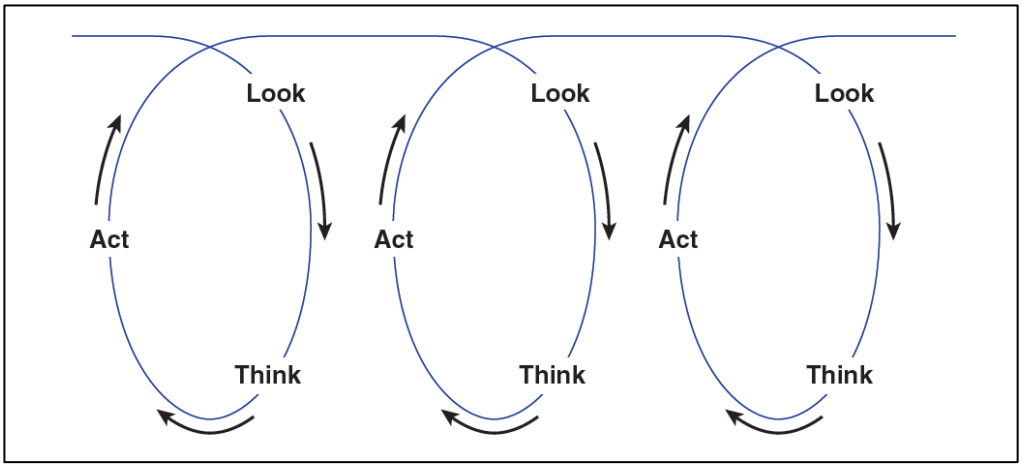


Figure 7.1 Stringers (2007) model of action research (p.9)

In drawing this overview to a close, it is important to recognise that AR is a paradigm of inquiry where the researcher's primary purpose is to improve the capacity and subsequent practices of the researcher rather than to produce theoretical knowledge (Elliott, 2004). That being said, the current chapter follows the work of Rossi and Tan (2012) and Thrower, Harwood, and Spray (2017) in taking a case study approach to action research. This is in contrast to a more 'pure form' of participatory action research (PAR) which can be found in the work of Cronin and Lowes (2016) within higher education and Chapron and Morgan (2020) in elite level rugby union. As a result of the case study nature of the AR approach, and that the 'case' in question was cricket *coaches*, the study attempted to integrate a number of characteristics identified by Abraham et al. (2010) in their work on best practice in *coach* development. Whilst some of this work by these authors made recommendations for coach development organisations as a whole, the current chapter has taken note of a number of

micro level aspects which should be considered for truly effective coach development. These aspects, which have been integrated into the current chapter, are;

1. Creating opportunities for coaches to work towards developing higher order skills and competences such as integrative planning, delivery and reflection processes, alongside developing mental models to drive naturalistic decision making.
2. Developing learning opportunities that are relevant to the motivational (i.e. self-determination), cognitive (i.e. required knowledge relevant to the role of the coach) and metacognitive (i.e. the development from dualism to relativism) needs and wants of the coach.
3. Incorporated elements of assessment *for* leaning as opposed to 'of' learning.

Having presented a detailed overview of AR and its relevance to the current chapter, it is important to consider supporting aspects of the AR process. The following section considers the role that I will play as the researcher in creating meaningful developments for cricket coaching practice in red and white ball cricket.

7.2.1.2 The role of the researcher in Action Research

Given that AR is collaborative in its attempt to improve the current situation for stakeholders (Greenwood & Levin, 2007), it is important to clearly position the role of the researcher. As a result of my own cricket coaching background (and qualification level), I was positioned as 'an insider' from the participants perspective, enabling the development of more meaningful relationships with participants as a result of an assumed level of mutual respect (Rossi & Tan, 2012). I was also however positioned as 'an outsider' given that there is little intimate knowledge of participants unique circumstances. This 'insider-outsider' positioning is common within action research (e.g., Rossi & Tan, 2012; Thrower et al., 2017) in an attempt ensure the AR process works collaboratively to define problems, generate relevant knowledge and interpret key learning (Greenwood & Levin, 2007). As a result, the role of the

researcher is to work ‘with’ the participants as opposed to ‘on’ the participants (Herr & Anderson, 2005) and as Rossi and Tan (2012) outlined (and I as the researcher appreciated!), the researcher is not positioned on a moral high ground, nor holier than thou!

7.2.2 Participants

Ten male participants aged 26-50 years old were recruited (M_{age} *= 38 years; SD = 6.44)* as a result of a network-led, purposive sampling approach. Criteria for inclusion in the study were: i) coaches held an ECB level 3 or ECB level 4 coaching qualification ii) coaches currently held a coaching role which incorporated working with ‘developing players’ [see 1.1.4, chapter 1] iii) the players whom they were coaching were actively taking part in training and/or competitive fixtures in red and white ball cricket (prior to the outbreak of Covid-19).

In relation to the network-led sampling approach, this approach is the practice of recruiting participants as a result of utilising the researchers own network, and is sometimes referred to as ‘snowball sampling’ (Whitehead & Whitehead, 2016). It is important to clarify the terminology used here. Participants who had already been recruited for the study were not approached in an attempt to see if they knew anyone who would be interested in the study, as is the practice in snowball sampling. I used a key contact in my network, who held a recognised position within the ECB, to recommend and promote the study to potential participants. Through working with the contact, purposive sampling took place. That was in an attempt to recruit participants with the relevant status and experience in order to generate information rich cases (Whitehead & Whitehead, 2016).

7.2.3 Data Collection Procedure

7.2.3.1 An Overview

Participants took part in a single semi-structured interview (*total n=10)* using the online platform Microsoft Teams. Interviews lasted between 66 minutes and 115 minutes (*Mean*

Duration = 93 minutes) and were video recorded via the built-in functions of the software for later transcription. Several pre-interview activities were designed to engage the participants as practitioners prior to the interview and formed an important part of the AR process. I.e., coaches developing their (planning) practices (McMahon, 1999). The pre-interview activities were also significantly utilised during the interview process. A full overview of stages of the data collection process are set out below, with accompanying rationales.

7.2.3.2 Preparatory work

Participants received an informative e-mail from the ECB contact regarding the study, with an invitation to take part. Prior to obtaining informed consent (Appendix 8), participants were invited to take part in a short, introductory online meeting with the researcher (via Microsoft Teams, Zoom and/or WhatsApp video). Meetings took place for all participants and ranged in duration from 20-45 minutes. A key rationale for these meetings was that they allowed participants to clarify any aspects of the proposed research process alongside the early stages of rapport development.

7.2.3.3 Stages 1a and 1b: Participants created and submitted two coaching session plans

Participants were asked to create two session plans, one which had objectives associated with red ball cricket (for examples, see Appendix 9 and 10), the other which had objectives associated with white ball cricket (for examples, see Appendix 11 and 12). In avoiding constraining this process, coaches were encouraged to plan according to the individual realities associated with the coaching roles and environments (e.g. session lengths, range of equipment, number of players, facilities available etc.) Session plans were also created as a result of coaches normal planning procedures (i.e. they were not given a 'template' to fill in). These steps were taken to ensure the AR process was relevant to the real-world environments and practices of the participants involved (Rossi & Tan, 2012).

To enable coaches to give a true and clearest picture of their current coaching approaches, participants were asked to avoid planning the sessions at the same time (i.e. in the same 'planning session'). After planning the sessions, coaches sent each coaching plan to the researcher via email. The time between receipts of session plan 'A' and session plan 'B' ranged from 9 days to 95 days *(average time = 22 days)*. This average included one outlier, whose time between submitting plan 'A' and plan 'B' was 95 days. As a note, the second longest time between receipt of plans was 26 days. On receiving the second session plan from participants, the researcher replied to the participant via e-mail and granted access to an online learning package.

7.2.3.4 Stage 2: Coaches engaged in an online learning package

Web-based (i.e. online) delivery is becoming increasingly common in an attempt to make connections between research and practice. A recent example from sports coaching comes in the form of Thrower, Harwood, and Spray (2019) and their work educating parents of mini-tennis players.

The online learning package consisted of Microsoft PowerPoint slide set, which was converted into video format (see Appendix 13). The resulting video was twenty-seven minutes in length and contained a mix of text information, images and voice-over style audio. This mix of content is in line with suggestions by Guo, Kim, and Rubin (2014) who recommended that various forms of media help to promote an engaging atmosphere for participants. The package had previously been piloted by the researcher, using critical friends *(n=2)*. As a result of this process, a number of changes were made in an attempt to ease the 'user-friendliness' of the package (e.g. formatting issues, changes to animated images, text size/colour etc.)

The design of the online learning package was heavily influenced by relevant evidence supporting the use of online learning platforms in education. Firstly, it is known that

online content delivery should be shorter than traditional face-to-face interaction (Ally, 2008). In the piloting of the package, feedback was that approximate completion time was 30-35 minutes, including some pausing of the video for review. This was viewed favourably in comparison to the 75-minute face-to-face workshop which was delivered in the previous stage of the thesis (i.e., Chapter 5). Secondly, the opportunity to repeat online programs and review content at one's own pace has been suggested as leading to enhanced learning outcomes (Duijn, Swanick, & Donald, 2014). As a result of the video format, participants were able to control (via pause, start, stop) the speed at which the video continued. Finally, it is well knowns that the appearance of online content can also influence the amount of interaction a participant has with the material (Gilson & Jung, 2014). As a result, the backgrounds of most slides (*n=26 of 51*), consisted of cricket-related images alongside a professionally constructed and consistent layout in an attempt to appeal to the participants. Of note, was the positive feedback on this from the piloting of the package with critical friends. Example images are presented to readers below.

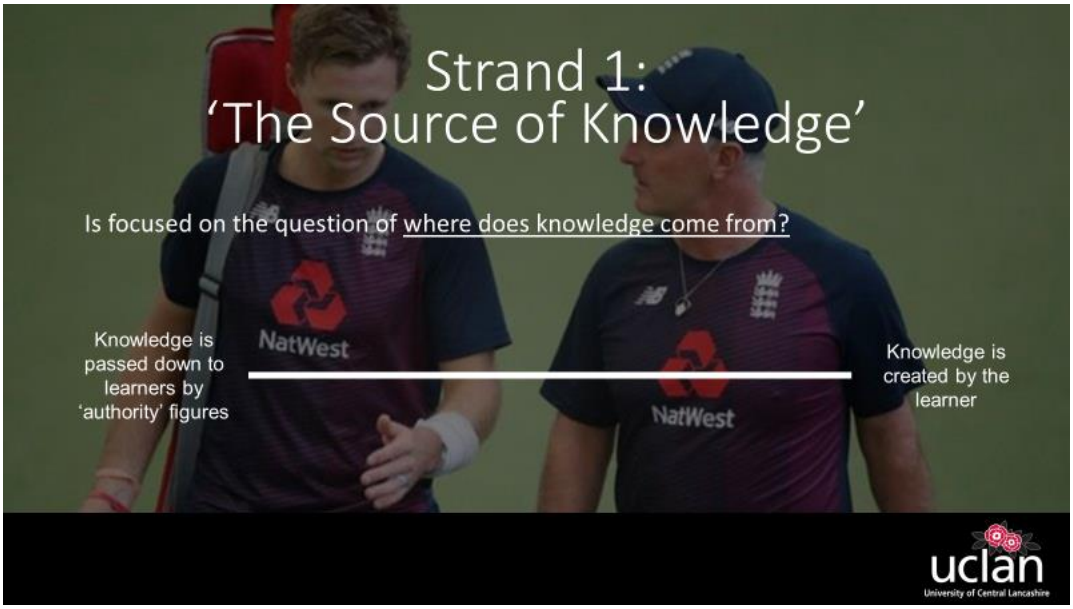


Figure 7.2a Example slide from the online learning package

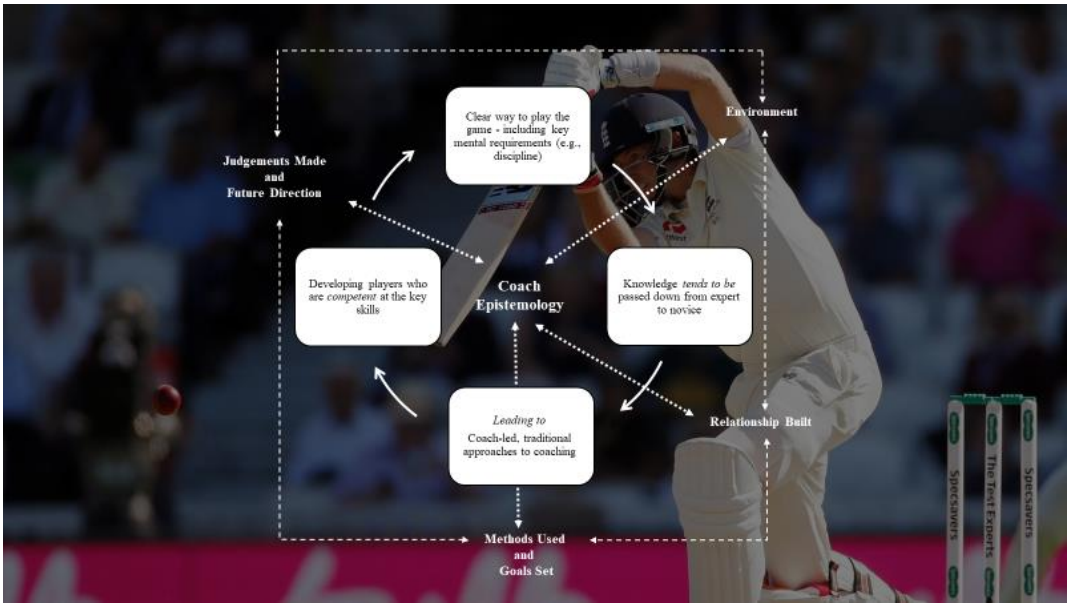


Figure 7.2b Example slide from the online learning package

7.2.3.5 Stage 3: Coaches reviewed their two session plans as a result of completing the web-based learning package

Previous research on the use of online learning proposes that those undertaking online learning, should be quickly presented with an applicable 'assessment' where there is an opportunity for self-reflection on the learning that has taken place (Moore & Kearsley, 2011). As a result, participants were tasked with a first attempt at creating connections between the coaching session plans submitted as part of stage 1 and the learning material presented in stage 2. Participants were required to annotate their previously submitted sessions with relevant aspects of the online learning package. In a similar vein to the approach to participants planning their sessions, participants were encouraged to do this in a manner of their choosing. Specifically, this activity continues the AR process and ensures, as Wadsworth (1998) suggested, that the emphasis is very much on 'the action'. Creating a standardised approach to this activity was deemed inappropriate, given that the thesis has previously identified the individual dispositions that participants bring to the research process (i.e., Cohen et al., 2007).

7.2.3.6 Stage 4: Online Coach interviews – A semi-structured interview using Microsoft Teams

Coaches took part in a single, online semi-structured interview. Semi-structured interviews were scheduled at a convenient time for participants (Tausch & Menold, 2016) and lasted between 66 minutes and 115 minutes (*Mean Duration = 93 minutes)*. Stages 2, 3 and 4 were completed within 14 days of coaches completing their second session plan (*Mean = 7 days)* as a form of consistency. That is, after submitting their second session plan, coaches completed 'the action' (e.g., Wadsworth, 1998) within a short and meaningful timeframe.

Semi-structured interviews are a well-established method within qualitative research, and it is no surprise that this method has been a key part of the data collection process throughout the thesis to date (e.g. chapters 4 and 6). Benefits of using interpretive methods such as semi-structured interviews have been stated previously [see 3.3.1, chapter 3]. In referring to the key underpinnings of the AR approach, the approach taken here reinforces the idea of working 'with' as opposed to 'on' the participants (Herr & Anderson, 2005).

The interview consisted of standardised questions that were explored in coaches personalised contexts. The interview guide consisted of three key sections. The first section of the interview was focused on the connections the participants made between the session plans they had designed and the content of the online learning package. An example question in this section included; *'what are the links you have made between the content of the video and your plans?'* A supporting probe included; *'…and what are your thoughts about that?'* As this first section of the interview developed, I offered coaches questions specifically in relation to their individual session plans. As an example, one coach identified they would split the player group into 4 groups, all undertaking different activities, with each group supported by a coach. One of my questions to this participant was; *'can you take me through the 4 groups and discuss the role of the coach within each activity?'*. The probe that followed was: *'how is that helping the player(s) to learn?'*

The second section explicitly explored participants' views on the coaching process figures, developed as part of this thesis (e.g., Figure 5.4 and Figure 5.5), which were presented in the online learning package. Example questions in this section included; *'which aspects of these do you think have 'stood out' for you in your coaching/planning?'* and *'to what extent are aspects missing from the figures?*'

The final section of the interview was specifically focused on the AR aspects of the process, namely the premise of how coaches will use and action the impacts of being a participant in the research process moving forwards. An example question included; *'how is this going to impact on your planning and practice moving forward?'* with supporting prompts and probes such as '*why is this?'* and *'how do you think you will operationalise that?* An example interview guide can be found in appendix 14.

As a final thought in this section, it is important to acknowledge the initial plan (and perhaps preference) to undertake face to face interviews. To illustrate my thoughts on my pragmatic choices in response to the Covid-19 pandemic, I refer to a participant response cited in the work of Lo Iacono, Symonds, and Brown (2016, p. 10) which reflects my position on the use of online interviews;

> I think a machine is never a person and a machine can never replace the personal. Because you are not getting my energy, you see, there are details you are not catching, impossible. We have a screen between us. So, I think in person is always better, but […] you wouldn't be able to interview me right now if it wasn't for Skype, right? So I think it's great! Why not?

7.2.3.7 Stage 5: Monitoring and evaluation via a social validation questionnaire

As part of the monitoring and evaluating the AR process (Evans, Fleming, & Hardy, 2000) coaches were invited to take part in a short, qualitative style questionnaire immediately following their semi-structured interview. The questionnaire (see Appendix 15) was created using the online platform, SurveyMonkey. It asked coaches to consider both the theoretical implications of their involvement (i.e., Wagstaff, Hanton, & Fletcher, 2013), alongside

practical reflections on the data collection procedure. In keeping with the philosophical position of the thesis, the aim here was to gather participants immediate thoughts and feelings, as opposed to objective facts. Participants were also asked if they would like any follow up engagement with the researcher and how that might best work for them in their context. Example questions here included; i*) What reflections would you have for other coaches invited to take part in this process? ii) As a result in taking part in this process, what will you start doing in your coaching/role? iii) What improvements would you recommend to this process? iv) Would you be interested in a follow up in 6-12 months time?*

7.2.4 Data Analysis

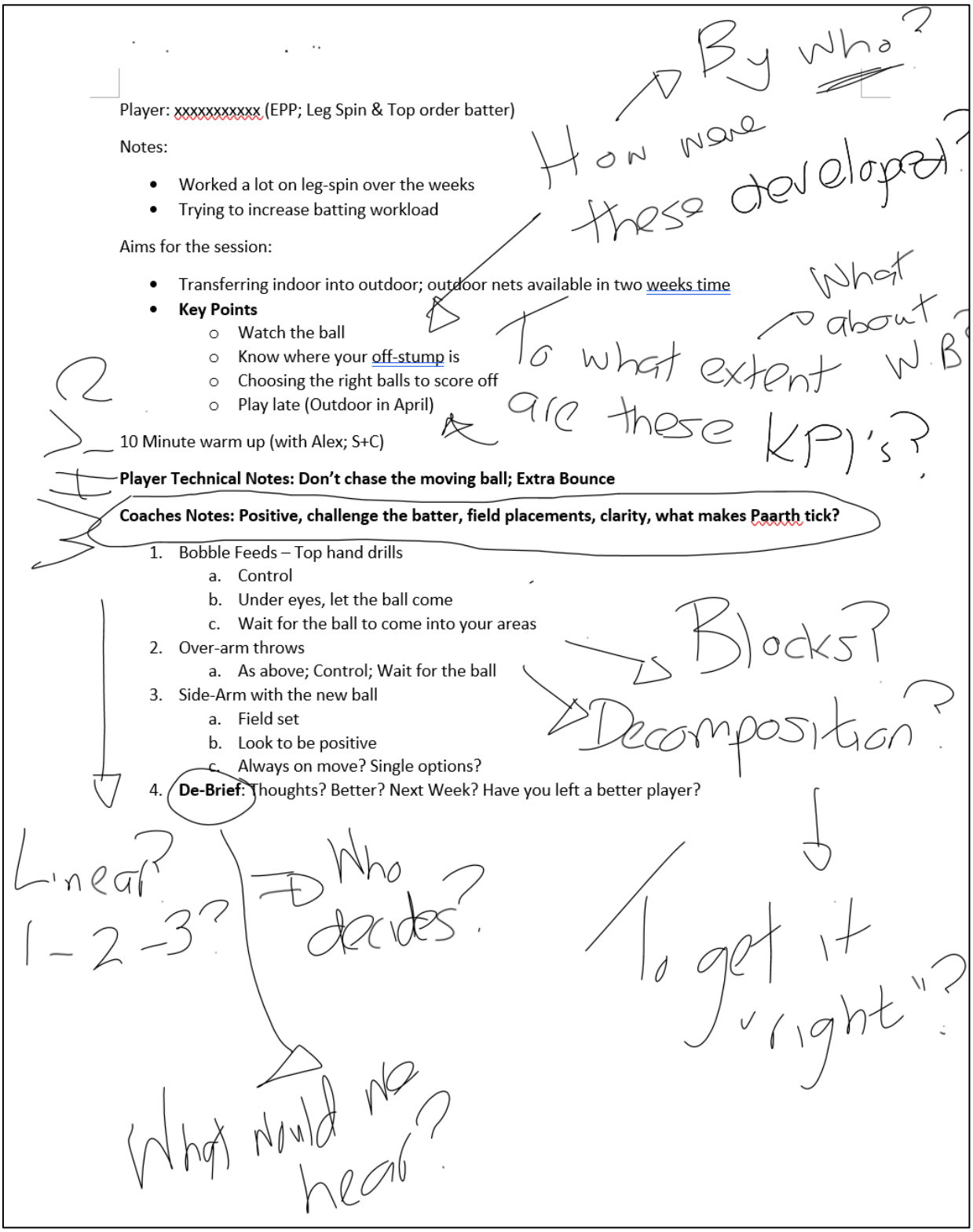
7.2.4.1 Data that formed the analysis

As a result of the multiple forms of data that was gathered as part of the data collection strategies, this section clearly outlines how three different types of data collected were used and analysed.

As a first form of data, participants' session plans were used to contextualise the interview process for each participant and gave an early indication as to coaches' approaches when working in both formats of the game. As the researcher, I *familiarised* (i.e., Braun & Clarke, 2013) myself with participant's plans (i.e. read and re-read them) and made initial notes in relation to areas for consideration in the interview. An example of this familiarisation process can be seen below in Figure 7.3 (on the following page).

The second and main form of data that was collected for analysis was data generated from the participant interviews. The third and final form of data was a result of the qualitative, social validation questionnaire that is an essential part of the AR process.

On reflection, there was also an opportunity to collect data regarding the time participants spent in engaging with the online learning package alongside the notes and annotations that participants themselves made on their session plans during *stage 3* of the



Player: xxxxxxxxxx (EPP; Leg Spin & Top order batter)

Notes:

- Worked a lot on leg-spin over the weeks
- Trying to increase batting workload

Aims for the session:

- Transferring indoor into outdoor; outdoor nets available in two weeks time
- **Key Points**
  - Watch the ball
  - Know where your off-stump is
  - Choosing the right balls to score off
  - Play late (Outdoor in April)

10 Minute warm up (with Alex; S+C)

Player Technical Notes: Don't chase the moving ball; Extra Bounce

Coaches Notes: Positive, challenge the batter, field placements, clarity, what makes Paarth tick?

1. Bobble Feeds – Top hand drills
   a. Control
   b. Under eyes, let the ball come
   c. Wait for the ball to come into your areas
2. Over-arm throws
   a. As above; Control; Wait for the ball
3. Side-Arm with the new ball
   a. Field set
   b. Look to be positive
   c. Always on move? Single options?
4. **De-Brief**: Thoughts? Better? Next Week? Have you left a better player?

Figure 7.3 An example of the familiarisation process with a session plan created by Jay

data collection procedure. That being said, a decision was made not to formalise the requirement for participants to annotate their sessions and further constrain the process. As a closing note on this point, what was pleasing was many participants' ability and willingness to verbally share the annotations they had made throughout the interview process, with some even stating they had '*made a few pages'* of notes, based on what they had seen.

7.2.4.2 Reflexive Thematic Analysis in the Action Research process

RTA was used for data analysis. As previously identified, there are a range of benefits to RTA, which are outlined in Chapter 3. It is however relevant here to make clear the links between the underpinning facets of AR and the tenants of RTA which are specific to this chapter. Firstly, it is accepted that in AR the researcher works 'with' the participants and that both parties bring their unique dispositions to the process (Cohen et al., 2007). These dispositions, are also widely accepted (and promoted) within the RTA literature, in that researchers bring a range of meaningful experiences and influences to the analysis process (e.g. through cultural memberships, social positionings, ideological commitments and scholarly knowledge; Braun et al., 2019). Secondly, given that AR is a paradigm of inquiry with a focus on practical implications as opposed to the development of theoretical knowledge (Elliott, 2004), it seems appropriate that RTA, as an analytic method, is not constrained by deeply rooted theoretical foundations (Braun et al., 2019). Finally, given that AR is cyclical in nature, it may be safe to assume that as the research unfolds, it will continue to evolve, increasing in quality in order to improve the current situation for stakeholders (Greenwood & Levin, 2007). This improvement as a result of the ongoing process is also a feature of RTA. As previously stated, it is well accepted that the use of RTA will get better as the researcher continues to use it (Terry et al., 2017). The RTA process used as outlined in Chapter 3.

As a final note and in referring to the aims of the chapter, readers may assume that only deductive analysis took place (as a result of the themes from the previous chapter being used as 'inputs'; Braun et al., 2019). In making it clear for readers, both inductive and deductive analysis took place in order to uncover new ideas presented within the data.

7.2.5 Addressing Trustworthiness

Trustworthiness criteria for the thesis have previously been identified in Chapter 3. Specifically, given the study was the final stage of primary data collection, there was an increased importance placed on the concept of resonance. Resonance was key in that the participants were taken through evocative representations of the coaching process, and identified transferable findings for their own coaching practice (e.g., B. Smith et al., 2014). As a result of study presenting participants with findings of the thesis to date, the chapter aimed for critical, open and honest discussions. Consequently, the spotlight was also increasingly shone on sincerity and credibility (B. Smith et al., 2014).

Specifically in relation to the AR nature of the research design, it has been noted previously the tensions that can occur, specifically in PAR as a result of the number and complexity of concurrently held roles associated with the research process, i.e. researcher, professional, student, colleague, mentor etc. (Phillips & Carr, 2009). The use of the case study approach to AR used here overcomes a number of these aspects and reduces the complexity that can become common in other forms of AR.

This section has comprehensively addressed the method utilised in the chapter and given a complete overview of the AR process. The following section presents readers with the chapters' findings as a result of the RTA process.

7.3 RESULTS

The results section has been separated into two sections. This separation is directly related to the two research objectives associated with the chapter. Part 1 of the results *continues the*

exploration of the design and development of frameworks which present the epistemological basis of both red and white ball cricket (i.e., RO5). The approach used here follows that used previously (e.g., Chapters 4 and 6).

In presenting the analysis (i.e. Table 7.3) and in respect of the significant amount of data generated across the study, raw data clusters (*n=25)* were developed. These raw data clusters encapsulated commonalities across the mass volume of codes assigned through the initial coding process. As a result, lower order themes *(n=8)* were created and developed into four storybook themes. These storybook themes were; i) *working together to find a way in white ball cricket* ii) *this is how we do it…in academy stage coaching* iii) *knowledgeable Coach + step-by-step drills = Red Ball Technician* iv) *we're all in this together.* Organising concepts which influenced the analysis remained constant to those used in previous chapter and included; i) coaching practice and pedagogy ii) power relationships in the coaching process iii) skill acquisition iv) the learning journey.

Part 1 of the results section presents an audit trail of the analysis process, the four storybook themes developed and updated versions of epistemological frameworks of red and white ball cricket.

Part 2 of the results presents *a critical review of the frameworks* and specifically explores the utility of the work for the coaches involved. A thematic map was created (Figure 7.6) which incorporated the two storybook themes constructed through the analysis. These were i) *developing epistemology through check and challenge* ii) *applications to the coaching population.* Part 2 of the results section concludes with a consideration of social validation, a key AR construct.

7.3.1 Part 1: Continuing to explore epistemological frameworks

As a consistent approach across the thesis, what follows immediately is an audit trail of the results. Following on, the storybook themes are presented and discussed in individual

sections, using key quotes from participants. This section of the results also presents readers with updated versions of the epistemological basis of red and white ball cricket.

7.3.1.l Presenting an audit trail

What follows are examples of a number of the six stage analysis process outlined by Braun and Clarke (2013). Initially, Table 7.1 overviews the initial coding phase (i.e. step 2 of 6). Example transcript passages are presented, along with the initial code assigned and an example of the development of a raw data cluster. Secondly, Table 7.2 presents an example of how lower order themes were created as a result of multiple raw data clusters (i.e. step 3 and 4 of 6). Finally, Table 7.3 provides readers with the full reflexive thematic analysis.

Table 7.1 *Examples of transcript coding and generation of a raw data cluster*

Example Transcript Extract	Example Raw Data Code	Raw Data Cluster
So if it's the case that he's learning a new shot…I remember doing a session with him a couple of years ago, it would just be literally me throwing under arms for the first 2 weeks so until he nails it basically we wouldn't move on to the last stage (Jay)	(Only) Progress with a technical drill once the player has gotten the current stage 'nailed'	Start the learning process with simple activities
Initially it was all about defence and not getting out because that's obviously the big difference on turning wicket's and then once we felt like they'd got their defence a little bit better than certainly we threw in some challenges about looking to score in difficult conditions (Damian)	Linear learning – start easy, build up to complex	
At phase one where you're learning the skill. Learn a skill in a block. It's a bit like a batter skill developing on a bowling machine. There is room for blocked practice on a bowling machine. When you're trying to acquire a new skill…Actually the best thing to do is get the bowling machine on, put it into the block-hole and get him to block practice the shot because you get continual feedback on repetition of how it's going. Same with bowling the googly actually. You get better feedback doing it continuously (Mo)	The first stage of (most) learning is blocked practice of the skill in its simplest form	
I think my take on it is that every skill is learnable therefore if you break it down, ultimately it's very simple. Simplified down, every skill is pretty simple to learn If you take it back to its raw elements (Pete)	Skills are simple if you break them down to their smallest parts	

Table 7.2 *Development of raw data clusters into lower order themes*

Examples of Raw Data Code	Raw Data Cluster	Lower Order Theme
Linear approach to practice [start at the simplest/least complex form and build up…]	Start the learning process with simple activities	A linear approach to learning a brand-new skill
Skills are simple if you break them down to their smallest parts		
Starting the learning process with skill decomposition (to build confidence?)		
The first stage of (most) learning is blocked (Blocked practice of the skill in it's simplest form)		
More variable practice once the players' "got it" (to include DM in the practice)		
Linear learning? – start easy, build up to complex? [*to develop some confidence]*		
Totally new, blank canvas skill = start with skill de-composition		
(only?) Progress with a technical drill once the player has gotten the current stage 'nailed'		
Breaking skills down enables increased 'feel' for the player	Using blocked practice enables players to 'get a feel' for the skills	
High speed, blocked practice = stored in the muscle memory		
Blocked practice enables players to 'get the feel' for the skill [wrong'un]		
Learning through the use of blocked practice 'to get the feel' of the skill		
Doing blocked practice enables you to get (internal?) 'feedback' on each repetition		
Using blocked practice to 'get a feel'		
To develop muscle memory, lots of repetitions needed in a very short space of time		

Table 7.3 *An overview of the full Reflexive Thematic Analysis*

Raw Data Clusters	Lower Order Themes	Storybook Themes
Experimenting, Exploring and Failing a focus in white ball cricket		Working together to find a way in **white ball** cricket
Collaboration in the **white ball** coaching process		
Match like features in **white ball** practice		
The academy prepares players for the next step	Developing self-sufficient players who can input on their own development	This is how we do it…in academy stage coaching
Developing responsible and self-sufficient players		
Micro-level player freedom within coach led macro level framework		
Player-Coach collaboration on player development plans (PDP)		
The speed of learning can vary	Learning takes time	
Players having a want and willingness to learn	Underpinning aspects of the learning environment	
Uber positive behaviours in the learning environment		
Knowledge passed down by coach as expert	Knowledge is passed from expert to novice	Knowledgeable Coach + step-by-step drills = Red Ball Technician
Basic Technical and psychological requirements needed in **Red Ball** cricket	Repetition to master the basic technical and psychological requirements of **red ball** cricket	
The need for technical ‘drilling’ in **Red Ball** cricket		
Start the learning process with simple activities	A linear approach to learning a brand new skill	
Using blocked practice enables players to ‘get a feel’ for the skills		
Keeping the individual in the process - one size does not fit all [Certainty of Knowledge]	Changeable knowledge for the individual player	
Knowledge is ever changing [Certainty of Knowledge]		
Batting knowledge is increasingly uncertain		
Player leading in collaborative learning		

Learning in **Red Ball** cricket by 'having a go' *with support* from the coach	Collaborative and Constructivist approaches to players learning new skills across formats	We're all in this together
Players failing as a key part of the process [Both Formats]		
Q+A approach when using video footage		
Questions to support player learning		
Using constraints to engage players tactically when learning technique		
Various measures of coaching 'success' (e.g. players cognitive effort, players views on success, player outcomes) identified collaboratively		

In the sections that follow, the storybook themes are addressed in further depth with the use participant quotes to support. It is important to highlight the structure here. Initially, storybook theme 1 (i.e., working together to find a way) explicitly addresses coaches approaches to learning in white ball cricket. Prior to turning the attention to red ball cricket, storybook theme 2 (i.e., this is how we do it…in academy stage cricket) considers a number of underpinning aspects of the developing athlete environment. The considerations are important and link to storybook theme 3 (i.e., knowledgeable Coach + step-by-step drills = Red Ball Technician). Finally, storybook theme 4 (i.e., we're all in this together) addresses a potential shift change in the existing polar and format specific epistemological positioning of coaches.

7.3.1.2 Storybook Theme 1: Working together to find a way

Earlier sections of the thesis have regularly outlined coaches' tendencies to be collaborative and constructivist in their approaches to white ball cricket (see Chapters 4 and 5). Once again, participants in this study supported this increasingly sophisticated view of coaching white ball cricket. The raw data clusters developed in relation to this theme were; i) *experimenting, exploring and failing a focus in white ball cricket* ii) *collaboration in the white ball coaching process* iii) *match like features in white ball practice.* The remainder of this section discusses these concepts in more detail.

The idea of *experimenting, exploring and failing as focus in white ball cricket* is a long-standing aspect of the thesis [see Table 4.7, chapter 4] which was once again a focus for many of the coaches. Damian explores this as the rationale behind the overarching approach to practice structure in their white ball coaching session;

> So particularly with white ball it was an opportunity in each net for players to create a safe to fail environment where they are free to explore and almost find their own ways to succeed…so it's giving them the freedom to go out there and develop their skills without me as a coach telling them what they can and can't do.

This view was reinforced by another coach in the study. When attempting to summarise their approach to coaching white ball cricket, Jay identified;

> I'm certainly one that gives more freedom in white ball cricket, I allow the players to sort of experiment more… in white ball cricket I'd say you've got to try it, you've just got to try it you never know.

Collaboration in the white ball coaching process was also an area of importance. As in previous chapters, coaches placed an emphasis on working *with* the players in white ball cricket. This ultimately sees coaches supporting players as they experiment, explore and fail during the learning of white ball cricket skills.

When discussing his approach when working with academy level batsmen to develop their skills against spin bowling, Gareth explains how the he interacts with the player(s) using questions in order to stimulate players initial approaches to the learning activity;

> so we usually set up for leg spin or left arm spin…and we would just have a chat about well what are your options here? We're looking to score a one, so what are your options to score a one? We're going to be a bit more aggressive, so where are you going to look to score your boundaries? What would that look like? What would I see?

To draw on a parallel example from a coach working with a bowler, Pete discusses their collaborative approach to reviewing/debriefing a white ball session. What is noticeable is the involvement of the player in the micro level, session review, alongside the space for the player to collaborate and input on the overarching macro level approach to coaching.

> normally we've got the video footage in front of us and I'll sit down and ask him what his thoughts are, how was your rhythm? How do you think it went? Were we hitting the pace that you wanted to hit? Were you hitting your pace with the slower balls and variations? Do you think what you're doing here is improving you? Do you think what you're doing here will help you get into the first team squad? And we'll have a fairly honest chat, and if any of those are no then we'll review it…discuss it with him and try to implement it.

Finally, the idea that white ball coaching is increasingly embedded within practices with more *match like features* than red ball coaching was raised. In offering clarity for the

readers, that is not necessarily coaching approaches that ‘use games’ [see 5.3.2.3, Chapter 5] but a consistent approach to ‘considering the game’ when practicing white ball skills. Craig offers a clear example of how the white ball approach culminates in an increased amount of match like features;

> I think with the white ball session what I was trying to do was get them to explore options that may be available to them, but to get them to understand, in the head to head, in the bat vs ball combat what it actually means to the game and the field in the situation. In terms of right, I'm going to do that, but this is when I'm going to do it, you know? So if I've got fielders there I'm going to go there or there, and how to sort of do that, but also from a bowlers point of view, you know if I'm going to go for example, wide yorker as my option. What do I? Where is that going to go if the ball is hit and what do I have to do to sort of respond to that? So it was about exploring the skill I guess but it was getting them to equate it to game situation

In summarising, the three underpinning aspects within this storybook theme, namely *experimenting, exploring and failing, collaboration in the white ball coaching process* and *match like features* all significantly contribute to a constructivist approach to coaching. These aspects attempt to position the individual being at the heart of their own learning, interpreting and constructing their own understanding by drawing upon and sharing experiences (Davis, Sumara, & Luce-Kapler, 2000). Importantly, these aspects reflect that coaches are increasingly open to a range of player interpretations as opposed to solutions that are created (and imposed) by the coach (Light & Wallian, 2008). In an explicit nod to the *match like features* aspect of this theme, coaches are attempting to acknowledge the chaotic nature of ‘real’ sporting environments (Chambers, 2011) whilst dealing with the problematic backdrop of practicing an outdoor, summer sport, indoors in the winter months.

From an epistemological perspective, what has continued to become clear across the thesis is the shared epistemological positioning of coaches working with developing athletes, to coach white ball cricket from an increasingly sophisticated position. Specifically, in relation to the two dimensions, i) The source of knowledge (i.e., Omniscient Authority) and ii) the ‘Certainty’ of knowledge (Schommer, 1994).

Referring to the figure below, previously presented to readers in Chapter 4.2, the current chapter consolidates key aspects of the white ball coaching process, namely i) relationship built ii) goal setting and methods iii) judgements made and future direction. In keeping with the thesis' approach to date, readers are presented with a 'final' figure (below), representing the epistemological basis of white ball cricket (Figure 7.4).

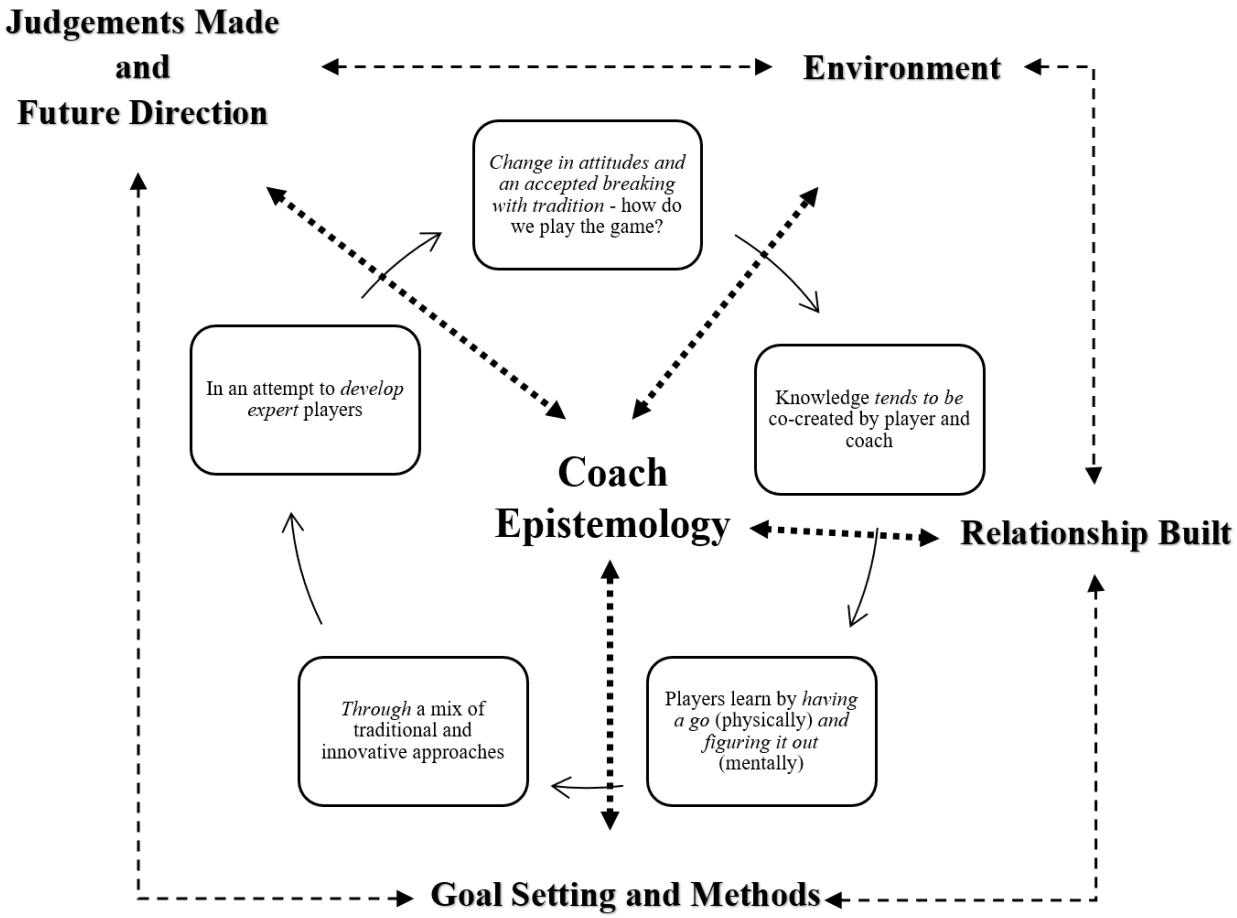


Figure 7.4 The epistemological basis of coaching in white ball cricket

Simply put, coaches viewed knowledge as being co-created. Given the individual nature of this knowledge, and the resulting individual approaches being encouraged by coaches in white ball cricket, it can be positioned that coaches are working from a model where there are multiple solutions to 'the problem'. This (committed) relativist approach (Perry, 1968) reflects a position held where knowledge is dynamic and ever changing.

In further clarifying the support for the epistemological basis of white ball cricket, when presented with Figure 7.4 and asked to explicitly weigh up the extent to which it represented their coaching approach in white ball cricket, Jay responded;

> (laughs) That looks pretty accurate because we discussed didn't we, that knowledge tends to be co-created, so driven by the player and players learn by having a go first, we've mentioned that. I think that's it's about right to be fair

In attempting to conclude this section and the exploration of coaches approaches to coaching white ball cricket, there was a clear and consistent message that the EC represented above (i.e., Figure 7.4) was akin to the coaching processes that were commonplace in coaching practice. What started to become less clear, was the extent to which coaches approaches to red and white ball cricket remained as distinct as previously identified. The following sections address the chapters findings, specifically in relation to coaches working with their developing players in red ball cricket.

7.3.1.3 Storybook Theme 2: This is how we do it…in academy stage coaching

Through the analysis process, it became clear that there were a number of underpinning characteristics associated with approaching the learning process in with academy stage players. The current storybook theme, was underpinned by three lower-order themes. These were; i) d*eveloping self-sufficient players who can input on their own development* ii) *learning takes time* iii) *Underpinning aspects of the learning environment.*

It is worthwhile here highlighting that coaches' considerations of their wider coaching context has been a consistent feature of the thesis, for example *culture of the programme* [see Table 4.6, chapter 4] and *creating the right environment* [see Table 5.2, chapter 5]. Whilst similarities are present in that coaches recognise the macro-level environment, this chapter offers an extension in the way of an acknowledgement of the micro-level, learning focused environment related to '*this is how we do it'*.

In outlining the first lower order theme, there was a clear want by coaches to develop *self-sufficient players who can input on their own development.* This appeared to be an underpinning and perhaps defining characteristic of an effective player (or learner!) within academy stage cricket. When discussing factors which underpin successful learning, Simon outlined the role of independence and a want to explore as key facets;

> I believe as a cricketer and as a sportsman who is going to be successful you must be that self-starter and independent. And curiosity is the engine of success isn't it and I believe that if you're not curious as a cricketer then you've had it. So creating an Academy environment where they are waiting on every word you're saying, is, I think you've probably got the wrong player and you've got the wrong environment. So for me the most important thing is creating a curious, self-starting player

When conversations turned specifically to considering the development of cricketers on a day to day basis, Mo talked about both the positives of players who could, and negatives of players who couldn't create their own solutions.

> there are a number of guys who are 2nd, 3rd, 4th year second team pros if you like, that are trying to break into the first team, but they were very much coach lead, I found they couldn't actually solve problems out in the middle. They needed me to almost steer them, which is OK, but ultimately at an earlier stage, the quicker you can become a problem solver in the middle, the greater chance you've got

As a final thought on this section, Damian outlined how he attempts to include players as key stakeholders in the design of their personal development plans. In doing so, he continually reinforces the idea of independent players taking control of their own development;

> my big thing here about my coaching philosophy is all about, particularly at this age group, players starting to really take responsibility for their own game so it's about empowering players to take control of their own careers that they are working towards, so the old way of sort of spoon feeding players and telling them what to do for me that lives a very short life span because once they get out there in the middle there's no coach to tell him what to do and if we're not creating thinking cricketer's then they are on a hiding to nothing

From an epistemological perspective, coaches in the above examples champion aspects of player behaviour which reflect independence, problem solving and taking

responsibility. Encouraging players to behave in this manner promotes an increasingly sophisticated approach to the coach-athlete learning relationship. Coaches are encouraging, if not wanting, players to be involved in the creation of knowledge. This is something that has been a long-standing aspect of coaches approaches when working with players in *white ball cricket* however results in this section would indicate that coaches are promoting this approach across their environments as a whole (i.e. any and/or all of the coaching that takes place is positioned in this manner, regardless of format).

The second lower-order theme developed in relation to learning in academy stage cricket was the idea that *learning takes time.* This theme explicitly relates to the epistemological dimension of speed of learning (Schommer, 1994). Interestingly, the coaches below all showed a nuance in their approaches to speed of learning and used different examples and scenarios to showcase their beliefs. Ultimately however, coaches showed a sophisticated appreciation of this dimension, suggesting that learning can happen, regardless of how long it takes.

> This is again on the right for me learning can still happen regardless of how long it takes so regardless of the you can't teach old dogs new tricks so I'm still learning and I'm learning everyday as to how to become a better coach (Jay)

> If you learn faster than somebody else. You'll progress quicker than somebody else... Now, I'm not saying learning can't still happen, and I'm not saying it's not regardless of how long it takes, but the guys that win and the guys that progress, learn faster… So I think quick learning is for the very best and you've got to allow that speed of learning to take place and create environments where you can, but then also it's OK if it takes a little bit longer (Simon)

> Well let's figure out what your line and length is for your stock ball and can we just go cross seam and look to do a wobble seam and start with the basics of just looking to run that ball into middle and leg…and build up like that. However long it takes him to pick up the skill so it could be an hour it could be six weeks and you just work it through with him (Pete)

> I don't think there's a set pace, it's player driven in terms of where you see them in terms of their capacity to learn, their ability to learn and also how do they learn? Are they feel people, or are they process driven people and therefore if something you're teaching is quite technical, that can be a slower process (Mo)

The final lower-order theme in this section was *underpinning aspects of the learning environment.* In adding detail here in relation to what these underpinning aspects were, two raw data clusters were constructed; i) *player willingness and positivity in the learning process* ii) *Uber positive behaviours in the learning environment.*

If learning was going to happen, firstly it was important that players wanted and/or appreciated the need to engage in learning. Secondly, that players were willing to invest the time required to learn. When discussing their work with a player, Gareth outlined an example where a player acknowledged their own lack of success which ultimately led to a want and willingness to learn;

> …he had less success that then made him go well maybe I do need to do something about this and we had that conversation…because effectively if they don't want to change it you're not going to change it. You're not going to put the time and effort into making those changes

Mo continues this idea of players willingness to 'put the time in' referring to the importance of the players' work ethic. When citing examples of world leading cricketers, he referred to this concept as a defining characteristic; "it's not only their ability to keep developing and learning, it's their ability to put the time and the work and they're absolute workaholics to it".

Having identified that *players* need to have a willingness, coaches appeared to suggest that what *they* added to the process was a sense of (exaggerated) positivity (through *uber positive behaviours)* in an attempt to support the process. Often this positivity was linked to the idea of players' willingness, but specifically encouraging players to continue to be willing to engage in what is often a difficult, and failure-littered process of learning;

> Everything will be absolutely positive, it would be like 'shot boy' kind of thing. I'm usually quite energetic in that sense in that if somebody is trying something new, the more positivity we can give it I think they will be encouraged to try it again and again (Jay)

> We like to have a pretty positive environment and that can be down to failing spectacularly but doing it in a positive manner…if we look to create that kind of environment where failure is, almost seen as a positive because you can get most of your learning from failure (Pete)

Coaches once again suggest that both coach and player have a key role to play within the process. The role of the coaches in this instance is adopting specific behaviours to positively influence the learning process with players. In relation to the use of *uber positive behaviours*, it is worth re-introducing the work of Jowett (2017) around the coach athlete relationship.

What can be seen here is coaches uses of strategies to maintain and develop both commitment, (e.g., to keep going at learning a particular skill which may be difficult) and complementarity (e.g., the extent to which the inter-personal behaviours of the coach aligned to the players current circumstances), of which are key pillars of a successful coach-athlete relationship (Jowett, 2017). Whilst this is a not a new concept in the research (e.g., Felton & Jowett, 2013; Jowett & Chaundy, 2004; Vella, Oades, & Crowe, 2013) it adds an extension to the findings of the current thesis. Insights have been offered in relation to *the style* of coaches' approaches and how coaches view their additional responsibilities that surround and contribute to the learning process.

This section has presented coaches overarching views when coaching in the academy context and working with developing athletes. What is noticeable is the close alignment that aspects of this section has to coaches' approaches when working in white ball cricket. That being, coaches' approaches are increasingly sophisticated.

Until now, the thesis has presented a significantly different approach being used by coaches when coaching in red ball cricket (i.e., increasingly naïve epistemological beliefs based on certain knowledge being passed down to novices by experts). In order to continue to build on the findings of the thesis to date, the next section reviews coaches' approaches in red ball cricket, as a result of the reflexive thematic analysis that has taken place in this chapter.

7.3.1.4 Storybook Theme 3: Knowledgeable Coach + step-by-step drills = Red Ball Technician

Three lower-order themes were created in support of this section. Once again, it appeared the drive for coaches working with their players in red ball cricket was the development of key competencies, which if successfully mastered would see them develop appropriate technique perceived as being required in red ball cricket. Firstly, the continued idea that *knowledge is passed from expert to novice* in red ball cricket was also supported by the idea of *repetition to master the basic technical and psychological requirements of red ball cricket.* Finally, coaches outlined *a linear approach to learning a brand-new skill* when working with their players on the development of red ball skills.

When discussing the source of knowledge (Schommer, 1994) in red ball cricket, it was clear that coaches tended to believe that *knowledge is passed from expert to novice in red ball cricket*. In developing this further, coaches acknowledged that this was from both a macro, and a micro level. A fascinating example of this comes from Mo who, when presented with a continuum in relation to the source of knowledge, explicitly outlined his varying positioning the continuum, based on the format of the game in question;

> So uhm, knowledge is passed down to learners by authority, yes, sort of a lean towards that more for red ball than created by the learner because generally the coach will have a knowledge of what's required at that next level that the player doesn't quite know. So the knowledge part of it, yes, I do think that it's generally passed down by the coach because they've probably been through those experiences, they've probably understood the level of knowledge that's required in terms of thinking, in terms of skill sets. I'll drift a little bit further to the right-hand side of that for white ball cricket, because actually, uhm, the kids are more innovative than the coaches have (*been*), probably ever were in their day because they've grown up in that environment where they probably play a lot more of that innovative stuff, out of the box thinking with shots, reverse scoops and dilscoops, etc. So yeah, on (*that strand)* I think the left side, definitely for the red ball because the kids generally don't know what the level they're trying to play at. They do about their own peer group and u18's and Academy stuff, but when you've got Academy players that the next phase is to go and potentially play against Lancashire second team and have four or five Lancashire first teamers in that environment. They don't know the requirements and so there is an element of passing down knowledge for that.

There was significant support for this idea from other coaches. The idea of the role of experience in order to position the coach as 'knowledgeable' once again came through in the following passages from Pete and Damian;

> I think because the game has been fine-tuned over many many years my belief is the knowledge that has been passed down has been fine tuned to a level where better cricket is an coaches then may are telling me that it works this way so who am I to pull against it? So I might challenge it but ultimately I'm going to fall in favour and trust what's happened over generations and generations and generations so for me that's where I fall on it on the red ball side of it (Pete)

> I think as a very new coach and somebody who's played for 18 years, I've tried to think about how I kind of learned myself and what worked best for me and I think if you are learning from authority figures, people who you look up to, senior players that kind of thing it always seemed to sit more with me...I think information and knowledge goes in a lot more when it's from a peer, sort of a player but has been there done that got the t-shirt and had that experience of being really successful at it (Damian)

When applying this to coaching practice, Craig discusses the approach to coaching during what his organisation refers to as 'skill sets'. Here, he links the idea of the source of knowledge with the epistemological dimension of the certainty of knowledge.

> So, in the skill set phase…sessions would be more, the knowledge is passed down to learners by authority figures because there are some, I guess there are some non-negotiables that we want our players to be able to master around basics

Whilst it is perhaps more than apparent that coaches held increasingly naïve epistemological views about the source of knowledge in red ball cricket, what has become more obvious is coaches' beliefs about the certainty of knowledge within the format. Referring to the above participant quotes, the idea of *'knowing what's required at the next level'* (Mo) and the passing down *'over generations and generations'* (Pete) would seem to consolidate the premise of knowledge as certain, and indeed the existence of KPI's within red ball cricket that have been identified in previous phases of the thesis (e.g., Figure 5.4).

The lower-order theme in relation to the role of *repetition to master the basic technical and psychological requirements of red ball cricket* was also a key area of

discussion. As key aspects of this theme, coaches often cited the requirement for increased volume in the learning process to progress with technical proficiency. As an additional consideration within this theme, coaches also acknowledged the need for practice that incorporated a number of the psychological characteristics (i.e. KPI's) required by players in red ball cricket.

When discussing his coaching practice and the role of repetition in technical development, Jay described his approach, identifying; "it was more about the grooving of the shots in red ball cricket so it was more technical based". In summarising his approach to helping players to learn new skills in red ball cricket, he added; "in Red Ball cricket I like to groove it first and make sure it's right". Continuing with the premise of repetition in the learning process, Mo even appeared to acknowledge the potential tedious nature of this approach to practice, seemingly looking to create solutions to the problems this type of practice can create, as opposed to considering alternative coaching approaches within the context;

> …*(to get)* to the Red Ball and some technical work around spin bowling, OK let's *(get)* away from batting because that is fun because you're hitting balls. Actually, the hardest part is getting the bowlers to just do the monotonous and repetitive nature of some red ball technical improvement, actually, how engaged can I keep a kid that I've asked a bowl to a cone for 40 minutes?

In increasing the focus on the integration of the psychological requirements of red ball cricket into coaches' approaches, Craig outlines how the setup of a red ball cricket practice was explicitly aimed at developing 'discipline' as opposed to necessarily players technical competencies. (As a pause for thought, readers are reminded that in contrast, coaches' approaches in the white ball format of the game are based heavily on players *'experimenting'* and *'exploring'* their skills);

> We've got boys and girls with ability, but sometimes the situational awareness and being able to adapt and actually say right, stop. This is the, this is what's in front of me. I need to do this, is lacking sometimes really and I think with the red ball session, the red ball session was designed to make them do stuff that perhaps they're not used to, or wouldn't like doing… Sometimes you're not

> always going to be able to do what you like doing and sometimes you have to be a little bit disciplined

As a final lower-order theme, coaches often cited their use of *a linear approach to learning a brand new skill* when working with their players in red ball cricket. Within this aspect, there appeared to be a focus on players doing things 'right' before moving on to the next phase of the activity. As an example, and bringing to life his earlier input, Jay highlights his use of skill decomposition within the learning process and the simplicity of the early stages of practice;

> if *(player)* is working on a new shot then I'd say right we're going to break that down, stage one, stage two, stage three… So if it's the case that he's learning a new shot or whatever…it would just be literally me throwing under arms for the first 2 weeks until he nails it.

This linear approach (i.e. beginning with a simple version of the skill and progressively moving to a more complex one over time) is fully supported by another coach, Mo. Perhaps most interestingly, when describing his approach below to helping a player learn a new skill, Mo is discussing the same technical skill as Jay (above);

> you would probably start with some basic bobble feed tennis ball stuff early part and just build confidence around sweeping and you build confidence around a paddle sweep again, probably in blocks. Where actually, let's work on paddle sweep because that's the one that requires least hand motion. Can we can we glide the ball down or are you trying to get the ball down and you work on that then you go to the hard sweep and then the slog sweep…You might introduce the reverse if the learning is quick, you go to reverse and then you go to variable practice so away from that block practice in the early stuff would be block practice then you'll go to variable practice where actually. Can you now, Access the right sweep shot. Depending on the pace and the line of the ball?

As a slight variation on a linear approach, Simon outlined his own personal method to helping players learn new skills. He clearly outlines a three-stage approach to the learning process, of which the final phases see's players attempt to execute skills under increasing amounts of pressure. The similarity remains however in that Simon appears to be proposing a model where the players should 'complete' one phase before moving on to the next.

> So using my learning loop, we explored it, he got it wrong a few times…He then went to practice with purpose, so he then, executed it a lot more, did it lot more with a certain process. Got the trust in the belief in the confidence from it and then moved into the more sort of pressurized train to play environment…If he hadn't have explored it first, and he hadn't simplified it and got practice with purpose, it would never have held up under pressure

In providing a simple, micro level example of this staged approach, he continues to outline; "so for example I wouldn't have progressed onto a reverse swinging ball if he wasn't already nailing the skill".

What is interesting is the alignment of coaches and players [see Tables 6.4 and 6.5, chapter 6] in a shared belief regarding both the role of repetition and the linearity of the learning process when learning a new skill. As was briefly discussed, often the premise underlying these approaches was that increased performance and/or mastery would be developed as a result of reduced variability (Schmidt et al., 2018). As is well known from the literature, there are short term performance advantages in practicing in this 'blocked' manner however it is well established in the research that increasingly varied and randomised practice is favourable in order for long term skill retention (Hall, Domingues, & Cavazos, 1994; Shea & Morgan, 1979).

Much has been made throughout the thesis of recent attention paid to more modern approaches to skill acquisition, such as the use of Non-Linear Pedagogy (NLP) and constraints-based coaching (CBA). These approaches move away from the behaviourist roots of repetition-based practice and focus on learners creating solutions to the problems they face in the performance environment (Renshaw et al., 2010). What remains fascinating is the tendency for coaches to engage in this style of practice in white ball cricket coaching, with a preference for more traditional, isolated and decontextualized practice (Moy, Renshaw, & Davids, 2015) in red ball cricket coaching.

In drawing comparisons between this storybook theme (i.e., *knowledgeable Coach + step-by-step drills = red ball technician*) and storybook theme 2 (i.e., *this is how we do it…in academy level coaching*) there are some interesting questions raised.

It is important to note is the ongoing discord and misalignment of coaches' views and the coaching action that takes place 'on the floor' when coaching red ball cricket. Whilst it is clear that coaches are keen to develop self-sufficient players (*i.e. this is how we do it…in academy level coaching*), at times the decisions and approaches that coaches take when coaching red ball cricket directly contradict this want. Fundamentally, questions are raised as to whether coaches are 'putting their money where their mouth is' when coaching red ball cricket.

What follows in the section below is the presentation of the final storybook theme. As with previous chapters, the final theme presented offers readers an insight into a number of more generalised features of coaches' approaches when working with players, somewhat irrespective of the format of the game in question.

7.3.1.5 Storybook Theme 4: We're all in this together

This theme was constructed in an attempt to reflect a 'softening' of such alternate approaches to coaching red and white ball cricket. This storybook theme consisted of two lower-order themes. These were; i) *changeable knowledge for the individual player* ii) *collaborative and constructivist approaches to players learning new skills across formats.* The ideas presented below are aimed at showcasing to the reader how a number of the coaches are attempting to take increasingly sophisticated approaches to working with their players at the outset. What should be made clear is that the examples that follow are a reflection of coaches discussing their day to day approaches to coaching, as opposed to coaching a specific format of the game.

Firstly, coaches championed the idea of *changeable knowledge for the individual player*. In (implicitly) discussing the certainty of knowledge (Schommer, 1994) coaches acknowledged the importance of developing technique that was individual to the player. When sharing an interaction that Brian had with another coach around technical development in batting, he passionately describes his feelings;

> And I immediately in my head was just like, woah, because what you do by doing that, by going MCC handbook, by going that you have to be technically proficient or 'do it in a way I see fit', I think for a lot of guys you actually nullify what makes them special. So the honest answer is, and my challenge to him afterwards was "so when Ricky Ponting was pulling off length, you would of turned round and said no?". Because if people go around things in certain different ways, providing that they know where their skill set is, what they do well and what they don't do well, is you nullify the brilliance.

In a similar fashion, when referring to working with a player to hone their batting skills, Lucas outlined the focus on outcome and how this can lead to the ongoing development of an individualised process; "if you're getting it *(the ball)* there in a style you're comfortable with and is minimal risk of getting you out, realistically if that works for you and its consistent, then we can keep helping you improve on that"

The second key idea that was developed was a *collaborative and constructivist approach to players learning new skills across formats.* Until now, this theme has been increasingly confined to coaches approaches when working with players in white ball cricket however what became clear was that this approach was starting to become increasingly utilised across coaching practice. A clear example of this comes from Gareth who outlines his contexts approach to working batters when developing their skills against a short-pitched ball from a bowler.

> So what we're doing, so the drill itself is trying to get a safe way to challenge players to work off the backfoot and that is just around well some people might be good at hooking, some people might just want to get underneath it, some people if it's wider of them might want to get it over point, some people might want to get it in front or over mid-wicket, and that's just like well…we don't tell them what they should be doing, it's like well do what you feel what suits you?

Another coach, Craig, also refers to an example when working with developing batters within their context. In the following example, the increasingly constructivist approach used by Craig becomes apparent. Here he outlines his preference for creating challenging environments (i.e. scaffolding) and encouraging the players to create solutions when developing their skills against a spinning delivery;

> a lot of them haven't done *(it before)* and it was really interesting. So my conscious thought there was to let them have a go, perhaps get a couple on the

> bottom hand or perhaps get a couple that rag past the outside edge or whatever, and not input too much straight away… I'd rather that happen to be honest, so it's all very well me saying before they go in, "get closer to it or get further away from it" but it doesn't make the blindest bit of difference…because I think they have to find a way themselves. They have to actually do it themselves, so they actually have to experience what it feels like to be uncomfortable and to not do something very well for a switch to come on

A final example of this theme comes from Mo when working with a bowler to develop a variation delivery. What is clear, is the collaborative aspect, with the emphasis on a shared approach to the process. Whilst initially it is the coach driving the process through questions, the process is shared as the players feedback drives the future direction of the coaching session;

> So I would say to him, what's the ideal position you want to see for the wrong-un? And where do we want to see the seam traveling? OK bang, let's watch this video *(of the player),* slow-mo, zoom into the ball and how does that look compared to what you just told me in terms of the seam position? If you were to walk past with your dog, you'll probably find me asking a lot of questions. How did that feel? How does it feel if you try and get the back of your hand more towards extra cover? Are we getting more wrist flick out of it? Ultimately, certainly with bowling…I need their feedback on their feel. How does it feel? No, it doesn't feel good when… you know you're relying on them to tell you about the feel.

As a result of this section once again presenting data that presents coaches engaging in increasingly sophisticated approaches to learning, irrespective of the format, it is important to offer readers an updated version of the epistemological basis of red ball cricket.

7.3.1.6 Updating the epistemological basis of red ball cricket

The previous chapters of this thesis have presented figures in relation to the epistemological positioning of red ball cricket by coaches (e.g., Figure 5.4) and players (e.g., Figure 6.1) as increasingly naïve. The epistemological dimensions that have been the focus have been *the certainty of knowledge* and *the source of knowledge.* Simply put, previous findings of the thesis have positioned coaches and players' beliefs across these two domains as increasingly naïve in relation to red ball cricket. Knowledge is

certain and unchanging. As a result, certain knowledge is handed down from experts, to novice players.

The findings of the current chapter offer a changing position. Coaches, at times, are engaging in increasingly sophisticated (or certainly approaches with decreasing levels of naivety!) in their coaching approaches with players. Whilst this is not happening universally, it is important to reflect this in the form of an updated version of the epistemological basis of red ball cricket, which can be found below (e.g. Figure 7.5).

What is of increasing relevance here is the consideration of the distribution of epistemological beliefs. The evidence from this chapter in the form of the four storybook themes (i.e., *working together to find a way in white ball cricket; this is how we do it…in academy stage coaching; knowledgeable Coach + step-by-step drills = Red Ball Technician; we're all in this together*) presents a less distinct, less polar presentation of coaches' epistemological beliefs. There are clearly times when coaches engage in increasingly naïve approaches to learning, specifically within red ball cricket. There are however also times where coaches engage in increasingly sophisticated approaches to learning in red ball cricket.

Whilst it is not within the scope of this thesis to continue to explore the defining characteristics which inform how coaches operationalise their beliefs, further research in this area would be worthwhile. In concluding part 1 of the results section, readers have been presented with the thesis' final versions of frameworks in relation to the epistemological basis or red and white ball cricket. The work that follows in part 2 of the results section, explores the impact that the wider AR process utilised in this study, had on those involved.

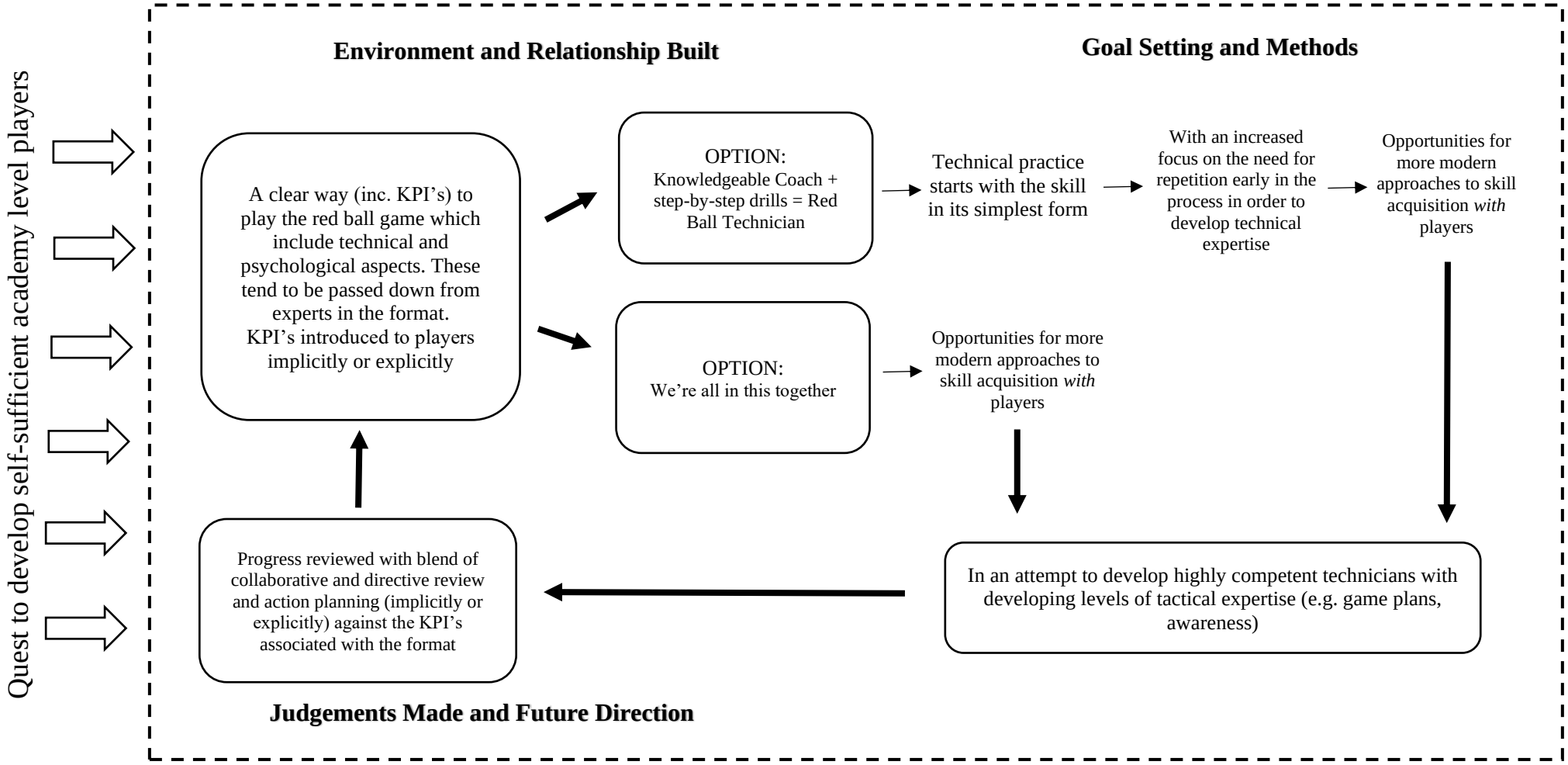


Figure 7.5 The epistemological basis of coaching in red ball cricket

7.3.2 Part 2: A critical review of the frameworks – understanding the utility

In addressing the second objective of the chapter, this section critically reviews the frameworks with cricket coaches working with developing athletes (RO6). In linking back to the approach used in the chapter, given that AR is a deliberate and planned intent to intervene into current practice (McMahon, 1999) opportunities were created for coaches to work towards developing higher order skills and competencies such as integrative planning, delivery and reflection processes as a result of a relevant and personally motivating learning opportunity (Abraham et al., 2010). In critically reviewing the work with coaches, the utility of the process would come to the fore. In presenting the results linked to this section, a thematic map has been created (Figure 7.6) in order to offer readers an overview of the interconnected areas of development and progress raised by the participants. Two storybook themes were developed. These themes '*Developing epistemology through check and challenge*' and '*Applications to the coaching population*' can be considered as 'macro-level' recommendations by coaches in relation to the utility of the work. This part of the results section considers the two themes are in more detail, with supporting participant quotes. Part 2 of the results section concludes by presenting a short section in relation to the social validation of the chapter.

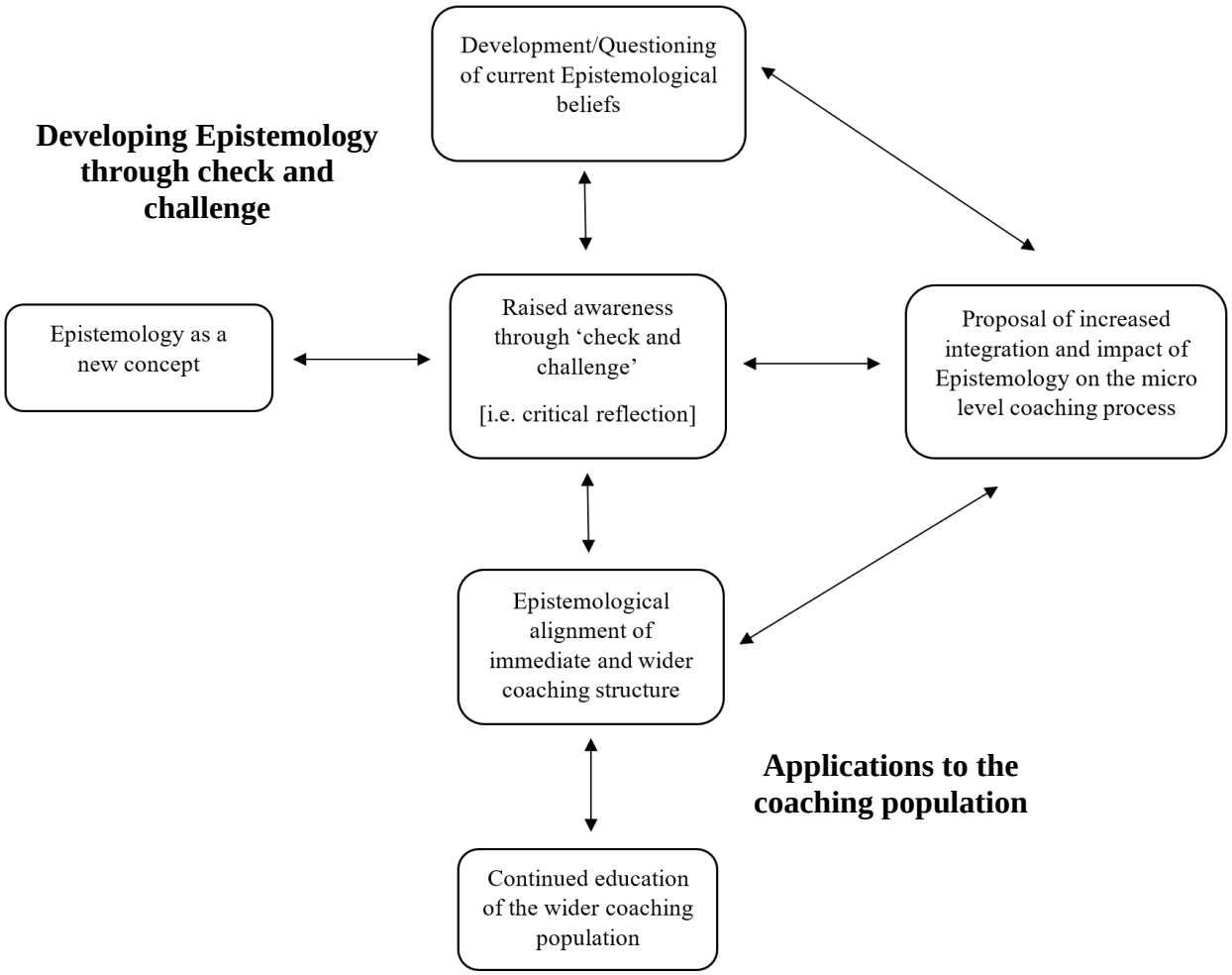


Figure 7.6 A Thematic Map outlining participants' development

7.3.2.1 Storybook Theme 1: Developing epistemology through check and challenge

In identifying the areas in which participants had progressed, many referred to the benefits of being introduced to a new concept which they have never been exposed to before. Participants also commented on the way in which taking part in the process had resulted in a 'check and challenge' approach to their day to day coaching practices. There was a general sense of interest and excitement as the participants identified what it meant for them. For example, Gareth outlined the relevance of the process for him in becoming more informed; "I mean epistemology was a new word to me, from the whole start of this process. I've always wanted to know 'why' and this gives you more of an

explanation". Damian once again re-affirmed the 'newness' of epistemology as a concept and shares his enthusiasm of considering and applying this to his coaching practice;

> The term epistemology I mean I've never heard of that. So obviously coaching philosophy is something that we are quite big on and we talk quite a lot about but I've certainly never heard that but that was quite interesting…there's been some great stuff to take out of this and to be able to think about it and try and develop a different way of thinking with some new ideas and freshness has been fantastic.

Jay continues and outlines once again the potential benefits of integrating epistemological considerations into his coaching practice and interaction with players;

> Again the first thing is about how I perceive myself as a coach in terms of thinking about the player and how they take in the knowledge. I think it's massive in my development moving forward as a coach. If I learn more about how the player likes to learn and take in information, I can adapt that *(in)* to my coaching.

In progressing from epistemology merely being a new topic of exploration, participants identified how taking part in the research process had actually raised their awareness of aspects of coaching practice. Both Pete and Craig below, identify how the process 'nudged' them to consider tweaking aspects of their approaches moving forward

> I think it's very useful because you can use it so you can go from both sides of it. It can either be informative stuff that you have not thought about or it reaffirms your own beliefs, so I think it's useful whichever side you fall on to be honest. There's parts of it which have made me go, oh yeah I've not thought about it in that way. Yes it's something I possibly do but I've not had it in my conscious thinking (Pete)

> Do you know what? Having been through this process there's bits of this that I thought yeah I'm alright at that, and there's been bits where I thought yeah, maybe just need to tweak that a little bit (Craig)

As a final reference to coaches developing awareness of their epistemology, and the 'check and challenge' aspect of the process, Gareth attempts to succinctly package up the 'newness', raised awareness and 'check and challenge' that he has experienced as a result of being involved in the research process;

> So the tangibles for me is a bit more depth into understanding well what is epistemology and what are the beliefs alongside that? So what are the key things

> in my philosophy and getting to think alongside that so it's giving me a bit more clarity in that sense…I guess it's there right? It's there because constantly you're checking yourself but you just get into the flow of writing sessions or the flow of, right this is what we're going to do but not enough in the flow of sitting and reflecting and going, well why am I doing that? Is that correct? Are there other ways we can do that? But I always try and work from the, well how do we maximise the learning from the opportunities we are providing? And that's the key thing for us.

As perhaps the most interesting and prominent aspects of this theme, a number of coaches also shared how they had started, within a relatively short period of time, to tentatively challenge themselves and their approaches as a result of reflecting on their epistemology. For example, Pete reflects on his approach to mapping his beliefs onto the five dimensions of epistemology and identifies the changes he made upon review;

> I actually wrote down where I fit on the strands, it was interesting to lodge them where I thought and then I purposefully left it, went away and then came back and re watched it to see if I put myself in the same place again. And it was interesting that it was similar but maybe I might have moved on one or two bits. So I think it was the learning quickly one that I had moved on most. I actually put learning can still happen regardless of how long. I pretty much put it as a 9 out of 10 if we were scaling it 1 to 10. And I think I maybe looked at it that learning happens quickly, so the different times that I did it it moved a little bit…I think I thought that if I'm a better coach learning will happen quicker for the player because I'll be getting my point across better…And then I've looked at it again since and I think, well you're just getting ahead of yourself and well if you're a better coach people will learn quickly but that's not the case.

In offering a more hands-on, practical example of participants challenging their own approaches, Damian reflects on the distinctness of his coaching approaches and begins to question his approaches to red and white ball cricket;

> I think the way that I approach red ball cricket, might I try and encourage the players to still play with that freedom you know? How they approach their white ball cricket. Not recklessly certainly but yeah encourage them, and it also depends on where we are in our preparation phase, but yeah give them a little bit more freedom to work it out for themselves as I would in white ball cricket.

7.3.2.2 Storybook Theme 2: Applications to the coaching population

In continuing to identify the practical applications of their experiences, coaches turned their attention to the positive impacts that exploring epistemology could have for their own coaching networks and the extent to which they could explore the *Epistemological*

alignment of the immediate and wider coaching structure. Craig initially outlines the complexity associated with the alignment of coaches within their organisation;

> It's a real challenge you know. So the completely different philosophies that there are out there, different attitudes towards players, different attitudes towards the game, different attitudes towards coaching… so that's an interesting one, the coaching teams. So again across our pathway there's the whole team of coaches and then there's the individual coaching teams, they've got their own dynamic as well so it is a real challenge it's hard, it's really hard

More specifically, coaches considered the impact, from a players' perspective, on being faced with a number of coaches with varying epistemological beliefs;

> The other big thing for me that was really interesting I mean as you've seen from my session plans to have a lot of coaches working with me and with our players, is what happens if my coaching philosophy or epistemology is that but we've got five other coaches with very different approaches so are they getting different messages? Are the players getting different messages from each coach? Or are we all lined up in the same way? So it's certainly food for thought (Damian)

Coaches also identified that within their coaching roles, they were accountable for overseeing and managing a number of coaches who were directly and indirectly involved in their programmes. As a result, conversations turned to working with their colleagues around the idea of epistemology and the EC. Damian continues from his comments above;

> The other question that I asked kind of sums up exactly what I've been thinking so this has helped me. So working with a big group of coaches and that's just a group of coaches that coach with me at the Academy level. Now I've also got 17 other coaches who coach with me throughout our pathway so yeah in terms of me working on some coach development for our coaches yeah I think this has given me some great direction

Another of the coaches, Mo also suggested that they might expose coaches within their organisation to the dimensions of epistemology as a form of continuous professional development (CPD);

> I think this will be really good. So those strands will be something really interesting to put out at a coaches' conference when we have 25-30 coaches in the room, and getting them to analyse where they'll sit on those strands

Aside from the internal considerations and applications around the epistemological development of coaches, participants in the study also identified how the *continued*

education of the wider coaching population would be beneficial and suggested there were universal benefits of exploring epistemological beliefs for *all coaches*. Pete identified the relevance of the experience and how, if nothing else, coaches reflecting on their epistemological beliefs could have small positive impacts at the micro level;

> I think we all need it, I don't think any of this would become irrelevant at any stage. I think even if you're (*England Coach)* I think you can still use this maybe not to gain more knowledge but certainly to refresh and look back on…and all the way down to the younger County age group stuff…if you've got an awareness of it, it might help with the way that you go and speak to those players

As a final salient point, Gareth offers an overview of not only this work in particular but coach education that goes over and above the development of procedural knowledge and attempts to develop coaches' declarative knowledge;

> If we can get our coaches on most levels, understanding the why and this is what that does more. So what I mean by that is you going to coach education course and you get told 'the what' a lot of the time, so "this is how to do this, this is how to do this" but why, so how people learn is so important and the development of learning and pedagogy and all these things is so, so important but I don't think we spend enough time doing that getting people to understand that because otherwise you are just regurgitating stuff

What has become apparent throughout part 2 of the results section, was coaches' views of the benefits, both personal and wider, of the work in this chapter. In line with the AR approach utilised, it is clear to see that coaches are outlining numerous *actions* they are considering. In drawing this part of the results section to a close, the final sub-section below addresses the concept of social validation, as an important underpinning aspect of the AR process.

7.3.2.3 Reporting Social Validation – Looking in the mirror

As a reminder to readers, reporting on social validation was identified as *stage 5* of the data collection procedure [see 7.2.3.7]. Six of the ten participants completed the social validation questionnaire post-interview. What was apparent was the overwhelming positive response to the AR process, when considering from both 'procedural' and 'impact of the content' perspectives. From a procedural viewpoint, there were very few

areas of the procedure coaches identified they would change. One participant identified they; “would have liked specific timelines to have worked to” (Lucas). This can be considered for future AR cycles. From a ‘content’ perspective, coaches suggested the process had real impacts for them ‘on the floor’. To note, this less confrontational(!) opportunity to reflect appeared to result in coaches identifying more micro level applications that were perhaps overlooked during the previous interview stage. Readers can find below a number of participant responses to the question/prompt; *“Please summarise your reflections having taken part in the process”*

> A clearer understanding of where learning takes place. Re-check of how I need to reflect better. I Think I would like more practical mentoring. I will start to video more sessions to review my coaching. I thought I included players in the decision-making process but on reflection, I could do this more (Gareth)

> All of this was so relevant to where I am at the moment trying to build new relationships and creating the right environment for our Academy boys. I look forward to getting back to work to continue this process with the implementation of some new ideas forged through this process (Damian)

> Through investigating the different strands of epistemology, it has made me more aware of how I am actually delivering content and also where I would like to get to in order to be able to enhance the learning process of athlete's further (Andy)

In closing this section, whilst the coach below did not complete the social validation questionnaire like his peers, his interactions in the closing stages of the interview suggest that Simon, like his peers, saw real value in what was an enjoyable learning process.

> It's been really good. It's been really provocative and it's got me thinking a lot that I really want to go back now and really look at those strands. Go back into my session and maybe as you said go in and have a chat with Sam and see where he is on these strands. I've really enjoyed the process as well so thanks it's been quality

Having considered and discussed the utility of the work for coaches working with developing athletes, the chapter enters into a discussion of the key findings, future directions and limitations of the chapter.

7.4 DISCUSSION

The aims of the current chapter were to continue the design and development of a framework which presents the epistemological basis of both red and white ball cricket (RO5) and present and critically review the framework(s) with cricket coaches working with developing athletes (RO6). In summarising the epistemological basis of red and white ball cricket (RO5), coaches within this study have once again corroborated the view that as a result of increasingly sophisticated views of learning and knowledge, coaching in white ball cricket is increasingly collaborative, exploratory and focused on the development of players who can create solutions in game situations.

Within this chapter, coaches have identified an increasing mix of approaches to red ball cricket, as opposed to what appeared to be a 'one model' approach previously identified in the thesis. Coaches once again highlighted that there were KPI's associated with playing red ball cricket. These KPI's were increasingly viewed from a position of *'knowledge as certain'.* What appears crucial (and different!) however are the ways in which coaches went about 'actioning' what they perceived as certain knowledge, specifically in relation to the epistemological dimension relating to the source of knowledge (i.e., Omniscient Authority). Coaches who took an increasingly naïve view in this dimension, tended to engage from a position of coach as 'knowledge holder'. As a result, their EC and resulting approaches with players can be described as increasingly one way, with a focus on traditional approaches to practice, such as increased repetition as part of a linear approach.

On the other hand, coaches who took an increasingly sophisticated view on the source of knowledge, engaged in what could be described as 'more white ball' approach! Working *with* players to create personalised solutions, with a focus on approaches to practice which enabled players to learn skills with an increased focus on individualised outcomes. An area that is currently unknown and worthy of future

exploration, are the factors that influence coaches' 'selection' of increasingly naïve or sophisticated coaching strategies within red ball cricket.

In offering a summary of the critical review of the frameworks (RO6), coaches identified the applications of the work both 'close to home' and more broadly. Whilst this aspect of the research did not perhaps yield the *lightbulb-style, ta-dah!* moments where coaches invested deeply in the analysis of their own micro-level practice, positive applications of the work were acknowledged. The theme '*Developing epistemology through check and challenge*' saw coaches acknowledge epistemology as a new concept which they knew little about. The theme, '*Applications to the coaching population*' saw coaches identify the relevance of epistemology for their own coaching teams (i.e. within their own organisation) and the potential benefits exploring epistemology could have for the wider coaching population.

Having overviewed the key findings of the chapter and identified that coaches saw real value in the AR process they were involved in, the discussion section now turns to focus on the development of future AR cycles.

7.4.1 To infinity and beyond – Exploring future AR cycles

One of the defining characteristics of AR is the continued building of the research process on the previous phase (see Figure 7.1). Whilst it is not within the scope, or timeline of the thesis to continue future cycles of the research under the PhD *banner*, it remains prevalent to identify opportunities for the next steps. What follows are a range of opportunities for the participants within the study, which reflect an ongoing ambition to not only increase the self-awareness of participants but drive towards the development and improvement of practice on the floor with their players (McNiff, 1988)

Given my role working *with* the participants (as opposed to *on* participants (Herr & Anderson, 2005)) in a collaborative approach (Greenwood & Levin, 2007), the

opportunities that are presented below attempt to continue to develop this collaboration. Given that I have also spent time getting to know the participants as individuals, the opportunities that follow (i.e., Table 7.4) are an attempt to individualise future AR cycles. As a result of the first cycle of AR, I would place myself increasingly in the position of 'insider' (Rossi & Tan, 2012). To clarify, I am now *inside* of the coaches' network and have a much greater connection and professional relationship. Previously, I was somewhat of an unknown entity apart from my shared experiences as a cricket coach. This chapter shared the same group starting point as is common in AR process however in progressing, the aim here is to develop increasingly individualised cycles appropriate to the individual (Rossi & Tan, 2012).

Table 7.4. *Recommendations for future AR cycles for coach participants from the current chapter.*

Coach	**Recommendations for future AR cycles** *NB: The current chapter is referred to as 'cycle 1', future cycles labelled 'cycle 2', 'cycle 3' etc.*
Damian	Cycle 2: Exploration of epistemology and EC in red and white ball cricket with coaches' immediate academy coaching team. Exploring alignment and misalignment amongst the group Cycle 3: More detailed individual exploration of coaching approach in red ball cricket. What epistemological assumptions are at play, when and where? Cycle 4: Exploring players epistemological views. Alignment and misalignment between coaches and players within the academy environment
Jay	Cycle 2: Further exploration of epistemology and EC when coaching different disciplines (e.g. fast bowling, fielding, batting against spin) in different formats (e.g. red and white ball cricket) Cycle 3: Investigating epistemological beliefs when working with players of different ages within the pathway. E.g. pre-academy group (c.14 years old) vs. academy group (c.16 years old)
Gareth	Cycle 2: Further exploration of individual epistemology and EC within red ball cricket - given the organisations focus tends to be around *white ball cricket.* What epistemological assumptions are at play, when and where?

	Cycle 3: Exploration of epistemology and EC in red and white ball cricket with coaches' immediate academy coaching team. Exploring alignment and misalignment amongst the group
Pete	Cycle 2: Further individual exploration of epistemology and EC within fast bowling – across stages of a season. What epistemological assumptions are at play, when and where? Cycle 3: Coaching in red ball cricket – exploring epistemological 'optionality' (i.e. figure 6.x). What causes the differences and why? Cycle 4: Exploring individual epistemology and EC across different disciplines (e.g. batting, fielding) that the coach may feel less comfortable/confident with
Craig	Cycle 2: Exploration of the epistemological basis of the organisations distinct stages of player training programme (e.g. "skill set" stage vs. "pre-season"). What epistemological assumptions are at play, when and where? Cycle 3: Exploring players epistemological views. Alignment and misalignment between coaches and players within the academy environment
Simon	Cycle 2: Exploring players epistemological views. Alignment and misalignment between coaches and players within the academy environment Cycle 3: Coaching in red ball cricket – exploring epistemological 'optionality' (i.e. figure 7.5). What causes the differences and why?
Mo	Cycle 2: Exploration of epistemology and EC in red and white ball cricket with coaches' immediate academy coaching team. Exploring alignment and misalignment amongst the group Cycle 3: Exploration of epistemological beliefs of the wider coaching population (e.g. the coaches operating within the coaches' geographical region)
Brian	No future cycles – participant didn't truly see the benefit, nor appeared to have the desire to openly explore and interrogate their practice
Lucas	Cycle 2: Further exploration of, and comparison of coaches' epistemological beliefs across different disciplines: coaching batting vs. coaching fast bowling Cycle 3: An exploration of coaches epistemology when coaching white ball cricekt with developing *female* athletes
Andy	Cycle 2: Exploring epistemology across the organisational landscape. What are the epistemological assumptions and positioning of the decision makers within the organisation? Cycle 3: Exploration of epistemology and EC in red and white ball cricket with coaches' immediate academy coaching team. Exploring alignment and misalignment amongst the group Cycle 4: Exploring players epistemological views. Alignment and misalignment between coaches and players within the academy environment

Whilst this section has discussed the findings and developed individualised AR cycles as a result of the success of the overarching method used in the study, as has been the case within the previous chapters, the following section outlines for readers the limitations of the chapter.

7.4.2 Limitations

There were two aspects identified as limiting factors within the study. These were in relation to the use of online interviews and participants motivation.

Firstly, whilst the use of online interviews was a pragmatic solution to an unprecedented problem [see chapter 7.1.3], there have been limitations identified with interviewing using online platforms. These issues lie most commonly in relation to building rapport. Similarly, developing trust, a sense of closeness and enabling the participant to feel comfortable has been cited as challenging (Cater, 2011). A number of previously identified solutions within the literature were utilised in order to dispel these issues. Immediate intimacy and rapport was enhanced given that participants were recruited as a result of shared personal connections (i.e. a contact which was mutually known by both researcher and participants) which helped remove a sense of the researcher as 'an outsider' (Roulston, 2009). Secondly, the multiple stages of pre-interview contact were used to (successfully) build a sense of relationship and rapport (Seitz, 2016). Such attempts were made to build rapport given creating a 'comfortable' environment can ultimately lead to increased sharing by participants, resulting in gathering richer data (DiCicco-Bloom & Crabtree, 2006).

The second limitation of the study which became apparent was the level of genuine motivation of the participants to be involved. In referring back to the premise of AR, because the 'issue' at hand affects both the researcher and participants, it is positioned both parties become involved in positive change (Friere, 1982; Stringer, 2007). Having said that, I became increasingly aware throughout the process of those

participants who, like me, were *all in*, and those who were perhaps only *dipping a toe*. As a standout example, it should therefore be of no surprise why no future AR cycles have been identified for Brian (see Table 7.4). As a linked factor here, using the network-led sampling approach (via the somewhat public ECB figurehead) may have led to (some) participants managing their impression somewhat differently to the ECB contact, as opposed to me as the researcher.

7.4.3 Researcher Reflections – Embracing Reflexivity

As the study is the final step of primary data collection, it seems pertinent to take a moment and reflect specifically on my own development as a researcher. It also seems worthwhile here given the new, (potentially innovative) and pragmatically responsive methods utilised within this study. It seems sensible to suggest that if there hadn't been restrictions placed on sport provision by the UK Government whilst this study was taking place, that in-person observations and interviews would have taken place, as in many of the previous chapters of the thesis. On reflection however, the method that was utilised in the study has great promise to be utilised as an ongoing, practical and meaningful approach to data collection and importantly, cricket coach development.

Importantly, the method enabled me as the researcher to play to some of my own personal strengths and importantly, nullify a number of my personal weaknesses. As an example, I *know* that having time between coaches submitting their plans, to develop individualised questions for the interview, and spending time developing those questions in a non-confrontational manner was a significant benefit. This would not have been possible with a same day observation and follow up interview on coaching practice. I also know that creating a video resource for coaches to engage with and make sense of, as opposed to more directly providing (e.g. live presenting) information to coaches (and placing myself as 'knowledge holder'!!) was another welcome opportunity to be non-confrontational in my approach.

In a similar vein, given some of the specific participants that were involved in the study (along with the pedestals I placed them on!), the premise that coaches were discussing their 'plans' (i.e. proposals for coaching) as opposed to their 'practice' (i.e. what they had actually delivered) once again decreased the level of potential conflict and confrontation (at least in my own mind!) through the interview process with these 'esteemed' people. Given that I felt I was challenging their thinking, as opposed to the actions they had made decisions to commit to, this enabled me to be willing to offer what I termed in the interview process 'gentle challenges' or 'nudges' to those involved.

As a final personal reflection, I feel that I have also been able to address an important personal ambition of the thesis in utilising 'different' approaches to the research process. Building on the workshop-approach to data collection in Chapter 5, this somewhat innovative method in chapter 7 ensures the thesis has become more than a 'traditional' qualitative thesis, reliant on one-off semi-structured interviews. Importantly to note here, this want is as a result of my own biases as a developing researcher alongside exposure to various research colleagues, as opposed to any attempt at academic snobbery!

In addressing the development of my skills as a researcher, the opportunity to use technology within the research process is also now another string to my researcher bow. Whilst the use of technology in the study is perhaps not *the most innovative* we can find within the literature, it is certainly an approach that I can consider using in future. In using this approach, I also created a number of potential solutions to building rapport (e.g. network-based sampling, pre-meetings etc.) which is known to be challenging when using technology within the research process.

7.5 CONCLUSION

In concluding the chapter, there are a number of key messages. Firstly, coaches' epistemological positioning in white ball cricket is increasingly sophisticated (i.e.

Figure 7.4). As has been the case throughout the thesis, this finding is specifically in relation to two dimensions of epistemology; the source of knowledge (i.e. Omniscient Authority) and the certainty of knowledge. In white ball cricket, coaches viewed knowledge as increasingly co-created by player and coach. Coaches also viewed this knowledge to be ever changing. As a second key message, the previous positioning of coaches' epistemology in red ball cricket as directly opposing and increasingly naïve, as articulated in Chapter 5.3.5, has been somewhat softened (i.e. Figure 7.5). Coaches appear to be engaging in approaches to coaching red ball cricket with developing athletes from positions of both naïve and sophisticated epistemological underpinnings. Of interest in relation to this new finding, was the development of coaches' views in relation to the source of knowledge (i.e., Omniscient Authority). Where previously coaches had held increasingly naïve epistemological views within this dimension, what now appears is that coaches hold distributed beliefs. That being, some knowledge in red ball cricket is passed down from expert to novice, and some knowledge in red ball cricket can be co-created. Future studies which explore epistemological approaches to coaching the sub-disciplines of red ball cricket (i.e., batting, bowling, fielding etc.) would continue to add detail here as to the nuances of coaches' distributed beliefs. As a supporting project, exploring coaches' playing and education backgrounds would also be prudent.

In relation to the AR underpinnings of the chapter, coaches were unanimous in their views that exploring epistemology and the impacts this had on their practice was beneficial. Coaches who invested in the process, did so on the premise that it would continue to help them become a better coach, and as a result, enable them to be more effective with their players. Through comparing and contrasting their epistemological views in red and white ball cricket, coaches began to ultimately challenge themselves around the nuances of why they do what they do. As a second key benefit, coaches

viewed positively the impact of exploring epistemology more widely in the coaching environment, for example with their immediate and wider coaching teams. On a more practical note, the data collection procedure was well accepted, especially given the Covid-19 circumstances in which the study took place. Finally, coaches saw the utility of the work, with many welcoming the opportunity to continue their involvement and access future (in-person) opportunities to continue to explore their practice in respect of their epistemological beliefs.

As the thesis draws towards a close, the next and final chapter provides readers with an overview of the research journey and recommendations of how this thesis' findings can be applied, developed and further explored in cricket, the wider fields of education and specifically coach learning and development.

CHAPTER 8: CONCLUSION, CONSIDERATIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

Epistemology and the EC has gained an increased amount of attention within the wider sports coaching literature in recent years (e.g., L. Collins et al., 2015; Crowther et al., 2018; Grecic & Collins, 2012; Olsson et al., 2017). The increased exploration of coaches' deeply help philosophical beliefs has developed in line with understanding how it is that coaching practice 'happens' and specifically, why it is that coaches do what they do. As an example, how is it that coaches arrive at coaching practices, choose interventions and associated coaching behaviours when working with their players? Epistemology and EC has also gained increased recognition for those involved in talent development systems and coach education (e.g., V. Webb, Collins, & Cruickshank, 2016).

The thesis specifically explored epistemology and EC within the context of cricket. Cricket was of particular interest, specifically with coaches working with developing athletes, given the unique challenges they face when coaching different formats of the game. In order to meet the overall purpose of the thesis, six key research objectives were developed:

1. To critically examine the literature in relation to epistemology and its application to cricket coaching.
2. To investigate and critically evaluate the behaviours and rationale of cricket coaches training practices and coaching styles with players under their supervision in relation to red and white ball cricket.
3. To critically examine the epistemological beliefs of coaches involved in coaching red and white ball cricket.
4. To critically evaluate the epistemological beliefs of players involved in red and white ball cricket.

5. To design and develop a framework that presents an epistemological basis of both red and white ball cricket.
6. To present and critically review the framework(s) with cricket coaches working with developing athletes

In addressing these aims, a pragmatic philosophical approach, with interpretive underpinnings was taken. This approach enabled me to get to the crux of coaches' approaches as a result of building relationships with participants, understanding their contexts and as a result, their approaches when working with their players. The pragmatic approach also reflected my own ontological and axiological wants and needs. Namely, (*stands on soapbox…)* to help cricket coaches to be better, and to become a better cricket coach myself. The interpretive approach rings true here given the focus and value placed upon participants' thoughts, feelings and opinions (I. Jones, 2015) of their own approaches to coaching. The work that follows is an attempt to summarise the findings of the thesis.

8.2 SUMMARY OF FINDINGS

After initially setting the scene for readers, including defining the key terms and laying out both the cricket and coaching landscape in Chapter 1, Chapter 2 addressed the historical views and development of epistemology along with a presentation of the EC as a six interconnected stage process identified within the existing EC literature (i.e., Environment, Relationship, Goals Set, Methods Used, Judgements Made, Future Direction; Grecic & Collins, 2013). In critically examining the research and addressing RO1, the chapter continued to discuss and debate the extent to which views are *distributed* across Schommers' (1994) five domains of epistemology, acknowledging competing evidence as to whether epistemological beliefs remain the same, or are varied across contexts.

The theoretical backdrop of PJDM was explored as the way in which coaches' epistemology became 'realised' on a day-to-day manner. Importantly, through engaging in PJDM, coaches are able to maintain alignment throughout the decision-making process as a result of appraising their coaching objectives from both a top down, and bottom up approach. (I.e. to what extent do the decisions I am making in practice match up with the long-term objectives of my coaching? To what extent to my long-term objectives inform my coaching approaches today? (Abraham & Collins, 2011b; Martindale & Collins, 2012). As a final applied consideration in relation to epistemology, links were made between the level of sophistication and/or naivety of coaches' epistemological beliefs and the extent to which approaches resonated with increasingly behaviourist and/or constructivist views of learning.

In concluding the chapter, implications were identified in relation to the development of coaching expertise. The opportunity to develop truly individualised approaches to coaching were also outlined for cricket coaches working across both red and white ball formats of the game.

Chapter 3 outlined for readers the pragmatic philosophical approach to the thesis. Pragmatism was chosen given its focus on the positive impacts of the research process 'on the end user' and meaningful applications to practice. From a personal perspective, the aim for the thesis was to be more than simply a book on the shelf. Chapter 3 continued to explore the supporting interpretive methods, such as semi-structured interviews and focus groups, methods which enabled me as the researcher the explore more deeply participants' thoughts, feelings and opinions.

Chapter 4, the first empirical study of the thesis, set out to investigate RO2 and RO3. Five academy stage cricket coaches were recruited as part of a longitudinal approach, which included observations, interviews and follow up interviews. There were two standout findings from this chapter. Firstly, findings strongly suggested the

presence of an EC. Secondly, and perhaps most fascinating was that findings strongly suggested that coaches held different epistemological beliefs (and hence actioned different EC's) across red and white ball cricket. More specifically, coaches held increasingly naïve epistemological beliefs when coaching red ball cricket and held increasingly sophisticated beliefs when coaching white ball cricket. In relating directly to dimensions of epistemology (i.e., Schommer, 1994), the variation in coaches' epistemological positioning were in relation to two key dimensions; i) the source and validity of knowledge (i.e. Omniscient Authority) ii) the certainty of knowledge.

In summarising this chapter, Table 4.7 outlined the contrasting EC's of coaches when working in red and white ball cricket. This side by side comparison clearly identified the significant differences and important nuances across the previously highlighted, six interconnected areas of the EC. Developing Table 4.7 also started to address RO5 of the thesis, that of developing a framework outlining the epistemological basis of red and white ball cricket. The chapter closed by identifying the next steps of more comprehensively exploring these findings.

Chapter 5 attempted to continue to explore the stark differences in coaches approaches previously identified. In doing so, there was continued progress towards achieving RO2, RO3 and RO5 of the thesis. A wider sample of participants (*n=12)* were recruited. In continuing the pragmatic and interpretive philosophy of the thesis, a workshop approach (Finch et al., 2014) to data collection was used, which included a range of activities and culminated in focus groups taking place. The workshop was an integrated part of participants attendance at the ECB Level 4 coaching qualification in which they were enrolled.

Findings of the chapter revealed support for, and an extension of the findings from Chapter 4. Once again, participants corroborated the premise of holding significantly different epistemological beliefs, and actioning significantly different EC's

based on whether they were coaching in red or white ball cricket. Importantly, a number of nuances were discovered as a result of the focus groups and aided the progression of the findings. In doing so, readers were presented with updated figures of the epistemological basis of coaching red and white ball cricket (i.e. Figure 5.4 and 5.5).

As a result of such compelling findings given the significant investigation into exploring the coaches' epistemology, the focus of Chapter 6 was on the exploration of players' epistemological views of learning in red and white ball cricket (RO4). It was hoped that as a result of exploring players views, the 'bigger picture' regarding how the two key stakeholders in the coaching (and learning!) process, ultimately view the learning process would develop.

Fourteen academy stage players took part in a one-to-one interview. The findings suggested that players, like the coaches in previous phases on the thesis, held different epistemological beliefs based on the format of the game in question. Once again, the two epistemological dimensions of the source and validity of knowledge (i.e., Omniscient Authority) and the certainty of knowledge were the focus of the results. More specifically, players showcased beliefs that 'correct' knowledge was 'passed down' to players from others in red ball cricket. In direct comparison, players believed that in white ball cricket, knowledge should be co-created by the player and the coach, on an increasingly individualised basis. What was once again reinforced was the premise that plyers beliefs about learning differed when considering the different formats of the game. As a final finding in this chapter, and supporting aspects of an increasingly naïve epistemological stance, players expressed the view that the learning process should be simple (i.e., linear), with players progressing to more challenging activities as part of the learning process, once they had completed the current practice in 'the correct' manner.

In concluding Chapter 6, coaches and players EC's were presented side-by-side (i.e., Tables 6.4 and 6.5) in an attempt to show the similarities and individual nuances of the stakeholder groups. Following a similar approach to previous chapters enabled continued progress towards RO5 of the thesis. As a final thought, the chapter outlined some tentative applications of the work in this chapter in relation to the coach-athlete (learning) relationship, and considerations for coaches working alongside 'teams of coaches' in their contexts.

In order to address the thesis' final objective, Chapter 7 presented an Action Research (AR) project aimed at critically reviewing the epistemological frameworks and their utility with cricket coaches working with developing athletes (i.e. RO6). This Chapter in particular lent on the pragmatic philosophical underpinnings of the thesis and developed an online, individual semi-structured interview (*n=10)*. Prior to undertaking the interview, participants were required to take part in a number of supporting activities in preparation (see chapter 7.2.3), in order for the chapter to more fully meet its stated aim.

Results of this chapter once again continued to confirm the increasingly sophisticated EC present within white ball cricket coaching (i.e. Figure 7.4). In relation to the certainty of knowledge, coaches viewed knowledge in white ball cricket as ever-changing. Consequently, coaches viewed collaboration to be key in respect to the source of knowledge in white ball cricket with both coaches and players having key roles.

In turning the attention to red ball cricket, new findings were made when considering coaches' epistemology and EC. Where previously, the thesis had positioned coaches' approaches in red ball cricket as increasingly naïve, results indicated an increase in the distribution of coaches' beliefs in red ball cricket with evidence of both increasingly naïve and increasingly sophisticated approaches to coaching within the red ball format. There remained key performance indicators (KPI) in red ball cricket, i.e.,

showcasing knowledge as certain. Having said that, there was evidence to suggest that coaches were actioning player learning around these KPI in numerous ways. As a result, the distribution of coaches' beliefs links directly to the source of knowledge (i.e., Omniscient Authority). Simply put, coaches viewed some knowledge in red ball cricket to be passed down by expert to novice, whilst some knowledge in red ball cricket can be developed collaboratively and/or by the player themselves. Fundamentally, it appeared that coaches' decisions on how to operationalise the KPI's of red ball cricket was an influencing factor in respect of how 'naïve' or 'sophisticated' their approaches were. A summary of these findings is showcased in Figure 7.5.

In continuing to address the results, specifically in relation to the utility of the framework and participants' explicit exposure to (the new concepts of) 'Epistemology' and the EC, results were very positive. Findings outlined participants had benefitted from, and developed (their understanding of) their epistemology through the 'check and challenge' that was an integral part of the research process. Results also indicated that participants saw the application of the work to the wider coaching population. To conclude the Chapter, individualised recommendations were made for future AR cycles with each of the participants involved.

As a final step in the thesis process, and as an important aspect of the pragmatic aspirations of the work, what follows are considerations and recommendations of how this thesis' findings can be applied, developed, further explored in cricket and the wider fields of education and specifically coach learning and development.

The remainder of this chapter has been divided into a number of key sections. The first section explores developments in epistemology, including an extension of the current literature and implications of the thesis across a range of sports. The second section clearly outlines recommendations in relation to epistemology and the EC for those working within cricket alongside avenues for continuing the AR process.

8.3 FOOD FOR THOUGHT: DEVELOPMENTS IN EPISTEMOLOGY, WORKING WITH YOUNG PEOPLE AND SPORTS WITH MULTIPLE FORMATS

8.3.1 Extending the epistemology and EC literature: Epistemological beliefs across domains and influencing dimensions

As a result of the thesis' findings, there has been a significant contribution to the existing epistemology and EC literature. Firstly, the current findings continue to increase the extent to which epistemological beliefs are being explored within the sport domain. Whilst previous research has taken place within Golf (e.g., Grecic & Collins, 2012; Grecic et al., 2013) Adventure Sports Coaching (e.g., L. Collins et al., 2015) and Football (e.g., Olsson et al., 2017) to my knowledge, this is the first exploration of epistemology and EC within cricket. Importantly too, the first research that has taken place in a sport with multiple formats.

Furthermore, research has previously explored the extent to which epistemological beliefs remain the same across different contexts however a consensus has not been reached. As examples, Schommer and Walker (1995) suggested that epistemological beliefs remained "predominantly similar" across contexts (p.429). Results by other authors (e.g., Mori, 1999; Roth & Roychoudhury, 1994) suggested that epistemological beliefs differed when learners were placed in different contexts. In offering a unique contribution and extending the literature, the thesis found that cricket coaches hold *different* epistemological views when working within different contexts – i.e. red ball cricket and white ball cricket. In addressing this unique contribution to the literature, the thesis offers two distinct differences when considering the findings in relation to the previous research around the similarity of epistemological beliefs across domains.

Firstly, much of the research that was actioned as a result of the extensive work of Schommer in the 1990's, was predominantly undertaken using a positivist philosophical approach. This culminated in quantitative data collection and analysis

approaches. In direct contrast, the current findings are as a result of an in-depth, interpretive approach, ultimately culminating in a significantly *richer and thicker* understanding (Schultze & Avital, 2011). On a similar note, much of the previous research focused on *the learner*, often students in an educational setting, learning an academic subject. Whilst Chapter 6 of the thesis explored players' (i.e. learners) epistemological views, the main focus of the current research focused on the epistemological views of those who were tasked with *helping the learner* (i.e. the coach). Whilst this has been starting to take place within other contexts, once again predominantly within education (e.g., Soleimani, 2020) there is little evidence of this within sport, and specifically cricket.

A second unique contribution to the literature comes in relation to the extent to which Schommers' dimensions of epistemology are independent of one another. Previously, it has been suggested beliefs across the five dimensions (see Figure 2.1) are independent of one another (Mori, 1999). When exploring the epistemological differences between coaches approaches in red ball and white ball cricket, two specific dimensions of epistemology have consistently been identified as the focal point throughout the thesis (i.e. chapters, 5, 6, (6) and 7). These were, the source of knowledge (i.e. Omniscient Authority) and the certainty of knowledge (Schommer, 1994). What seemed clear was the premise that, in red ball cricket, coaches viewed knowledge of how to play the format as increasingly certain. As a result of having this 'certain' knowledge, coaches engaged in practices whereby this (certain) knowledge was to be 'passed down' to those who required it. As a result, it is proposed that one dimension clearly influenced the other. From a white ball perspective, coaches viewed knowledge as increasingly uncertain and changing. Given that as a result there was little (certain) knowledge to 'pass down' to the learners, coaches engaged in coaching practice on the premise that knowledge could be developed collaboratively (i.e. there

was no single, valid source of knowledge). As a consequence, it would appear that, within the context of cricket coaching with developing athletes, the epistemological dimensions of the source of knowledge, and the certainty of knowledge *are* somewhat connected.

8.3.2 Understanding young adults! Are they really young and naïve?

In attempting to understand the development of an individuals' epistemology, the thesis has previously referred to the work of numerous authors (e.g., Entwistle & Peterson, 2004; Kitchener & King, 1981; Perry, 1981). With a focus on students involved in higher education (e.g. ages 18 and onwards), the authors all highlight a journey from relative naivety (also termed dualism) towards increasing sophisticated (also termed committed relativism). Specifically, authors explicitly suggest that students enter the world of higher education as 'novices', holding increasingly naïve or dualistic outlooks. It is positioned that only as students progress through their education that they become increasingly sophisticated.

As a significant point of interest that is worthy of further exploration, the findings of the thesis, specifically Chapter 6 (which worked with players aged 16-18 years old), suggested that these players, held beliefs about the learning process that were both naïve in one context (i.e. red ball cricket) and increasingly sophisticated in another (i.e. white ball cricket). Whilst further research is recommended, this finding appears to offer contrasting findings to the existing literature raised previously in this section. That being, that *young adults* (i.e. players, 'students') aged 16-18 may well hold increasingly sophisticated views in some contexts as opposed to explicitly naïve creatures. As a result, there are clearly implications for those working within the education context, of which was the focus of the previous literature. Specifically, to what extent are *young adults'* (aged 16-18) views specific to the context of education (i.e., in the classroom)? Interestingly also, to what extent are those involved in education able to tap into young

adults' epistemological views in different contexts in order to shape their educational views?

In considering a sports coaching perspective, coaches, across all sports, working with players within this age group should be aware of these potential differences in their players' epistemological positioning. As a practical example, coaches should be aware of the myriad of epistemological views held by, and influencing their players prior to engaging them in a learning process. The current thesis points to the possibility that players aged 16-18 may hold increasingly sophisticated views within particular contexts, as opposed to the previously stated naïve epistemological views that may have developed as a result of home life and previous stages of formal education (Anderson, 1984).

8.3.3 Considerations for sports with multiple formats

As a result of the thesis' findings, there are implications for other sports which are played across multiple formats and/or versions. It may be prudent for coaches (and coach educators) within these sports to explore their own epistemological beliefs, and EC both within and across the different formats of the sport. Given its effective use in the current work, stakeholders are encouraged to use the EC framework proposed by Grecic and Collins (2013) (see Table 2.3). Sports which would specifically benefit include; 15-a-side Rugby Union vs. 7-a-side Rugby Union, Indoor vs. Beach Volleyball and singles vs. doubles format in Tennis.

As an extension, coaches of sports such as junior level football may also see benefit from exploring their epistemology and EC. Although not explicitly recognised as a different format, junior football pitch size, goal size and team size increase incrementally with age. As a result, it is suggested that coaches of junior football working across the age groups (e.g. from ages 6-18) are indeed conducting coaching, teaching and learning within different formats of the game. Exploring epistemology and

EC across these formats would be beneficial for coaches. This extension may also be applicable to junior levels of many sports where player numbers are lower than at the adult level.

As a final consideration, it would be prudent for those coaches working in Tennis, to consider their epistemology and EC when working with players on different court surfaces. Specifically, to what extent are Tennis coaches' epistemological beliefs and EC similar or different when helping a player to learn how to play on a different court surfaces. Specifically, how are coaches epistemological beliefs influenced as a result of helping players learn to play on 'soft and slow' grass courts compared to helping a player to learn how to play on notoriously 'skiddier' and spin friendly clay courts?

The current section has identified how the current thesis has contributed to an extension on the literature and outlined a number of considerations that are wider than simply the sport domain. The following section increases the focus of the thesis' findings directly for those involved in cricket. What follows are specific recommendations for cricket coaches and coach educators.

8.4 SPECIFIC RECOMMENDATIONS FOR EPISTEMOLOGY AND EC WITHIN CRICKET

This section will outline (practical) applications of the thesis to Cricket. Recommendations are made for those working in cricket, specifically coaches and coach educators in attempt to *(gets on soapbox again…)* help. Importantly, the recommendations are made in a manner which encourages those they are aimed at, to take responsibility. The intention here is not to present '*the how'*, rather to provoke consideration through a presentation of '*the what'* and '*the why'*.

8.4.1 Recommendation 1: Coaching teams working with developing athletes to engage in epistemological CPD

The thesis has maintained an explicit focus on the epistemology and the EC of individual coaches working with developing athletes. That being said, it is important to acknowledge that within the developing athletes' context, there are often many coaches who are involved in helping players learn and develop (e.g. a 'head' coach, an assistant coach, specialist technical coaches, strength and conditioning coaches etc.) Consequently, there is a clear rationale for the coaching group within each organisation to address the issue of epistemological alignment and misalignment. This recommendation is directly linked to the findings of Chapter 7 (see Figure 7.6). Coach-participants in the study agreed the need to explore epistemological similarities and differences within the coaching teams they were involved in. Previous research has also identified the positive outcomes associated with coaches opening up discussions with their coaching peers (Grecic & Collins, 2013). As opposed to engaging in direct comparison, coaches can become more informed as a result of reflecting on their own beliefs as a result of hearing others around them express their own. Importantly, this recommendation is not made in an attempt to unify coaches' deeply held beliefs. The ambition for coaching teams should(!) be to identify the limits of variation amongst the coaching group and create a clear picture of what is and isn't going to occur (V. Webb et al., 2016). As a final note, the recommendation here is across both the short and long term. Whilst coaches would benefit from a short-term intervention in order to raise awareness of beliefs across the coaching team, ongoing discussions, follow up and CPD as a regular and sustained course of action would be best practice.

8.4.2 Recommendation 2: Epistemological positioning of the coaching programme to be explicitly introduced to developing athletes

The thesis has addressed the epistemological beliefs of both coaches and players involved in the developing athletes' context. The findings suggest a number of shared

epistemological beliefs between coaches and players, specifically in red and white ball cricket along with some unique differences (see Tables 6.4 and 6.5). In an attempt to increase the quality of the coach-athlete relationship whilst also aiding the players own transition into this 'new' and 'higher' level of the sport, the recommendation is that the programme shares its epistemological standpoint (i.e. the shared epistemological beliefs of those leading the players learning) from the outset. As an ideal 'place' to undertake this initial intervention, the induction of a new intake of players, and/or a new 'coaching cycle' is a potential window of opportunity.

Adding detail here, raising the epistemological positioning of the programme does not lead to an expectation that players will simply conform. It is an opportunity to increase the complementarity and co-orientation of the coaches (and the programme as a whole) and the player (Jowett, 2017). Examples raised in previous research (e.g., Crowther et al., 2018; Grecic & Collins, 2013) have highlighted the strain that can occur on the coach-athlete relationship as a result of well-intentioned but misinterpreted approaches based on different epistemological positions of the coach and athlete. Importantly, given that the developing athletes' context includes a stable performance group, long-term objectives and extensive intervention and interpersonal contact over a long period of time (Lyle & Cushion, 2016), is proposed that for many, the ongoing development of the coach-athlete relationship as a result of taking an epistemological perspective, will not be a 'quick fix' and will occur progressively over time. In undertaking this sharing, coaching programmes should also consider those coaches who may be 'best placed' to work at specific stages of the programme based on the alignment between coaches and players epistemological beliefs *and* an identification of what players *need* as individuals at the identified stage of development (Grecic & Collins, 2013; V. Webb et al., 2016).

On a final, practical note, coaching programmes are encouraged to approach the subject of epistemology in a manner which appropriately reflects socio-cultural aspects of their context. It is not expected for example, that coaches interview their players about their epistemological beliefs as has happened here (i.e. Chapter 6), or even use the term epistemology. Stereotypically, developments around other holistic aspects of performance such as lifestyle and nutrition etc. take place in a workshop-style room with players sat at tables and chairs. This need not be the case. Coaches are encouraged to use their creativity and knowledge of their players in order to create effective, and perhaps most importantly, engaging interventions with their developing athletes.

8.4.3 Recommendation 3: Coach educators to raise awareness of coaches epistemology as 'learners' prior to engaging in coach education programmes

There are interesting considerations of the findings of the thesis for coach education. Coach education and coach educators may benefit in future from exploring the premise of epistemology with those enrolled of coach education programmes. Specifically, from the perspective of 'coach as learner'. Given that coaches appear to hold significantly different epistemological beliefs in relation to red and white ball cricket, investigating coaches' views when undertaking learning themselves around the red and white ball formats, would be of significant interest.

That being, if coaches appear to hold increasingly naïve epistemological beliefs in red ball cricket, do these beliefs follow suit when coaches are engaged in *learning* about red ball cricket themselves? Are coaches therefore expecting to be passive vessels in red ball learning contexts, with knowledge passed down to them from perceived expert presenters? Similarly, with coaches holding increasingly sophisticated epistemological views in white ball cricket, are coaches expecting to collaborate and develop knowledge in an active manner when engaging in white ball learning? Clearly there are implications for cricket coach education, in addressing coaches' beliefs as

learners. As a result of this exploration, it is imagined that this will aid coaches developing their knowledge and understanding of coaching concepts (as opposed to seeing them as competencies to be mimicked) and drive coach education towards just that, *education*, as opposed to what some might current describe as *coach training* (Lyle & Cushion, 2016) [see 1.1.2, chapter 1].

This section has outlined specific recommendations for those working within cricket. In once again increasing the focus of the application of the thesis' findings, what follows in the next section are recommendations for future research within cricket. The thesis began an AR process in Chapter 7 and what follows are avenues for further exploration through future AR cycles.

8.5 RECOMMENDATIONS MOVING FORWARD: CONTINUING THE ACTION RESEARCH PROCESS WITHIN CRICKET

In concluding the thesis, the final section will attempt to outline for readers a number of future AR cycles within cricket. This section addresses opportunities to both continue the AR process that began in Chapter 7, as well as recommendations to consider beginning new AR cycles as a result of *looking, thinking and acting* (Stringer, 2007*)* on the thesis' findings. For readers to note, the numbering of recommendations continues from the previous sections.

8.5.1 Recommendation 4: Exploring the 'epistemological optionality' in red ball cricket

The final empirical phase of the thesis led to an extension of findings, specifically in relation to the epistemological basis of red ball cricket (see figure 7.5). A defining but underexplored aspect, was the way in which coaches operationalised what they perceived as *certain knowledge* in red ball cricket. Coaches views on the source of knowledge (i.e., Omniscient Authority) appeared to heavily influence the extent to which coaches engaged in increasingly naïve or increasingly sophisticated approaches with their players in this format.

The AR cycle would explore more deeply the underpinning aspects of the 'optionality' of coaches' approaches in red ball cricket. Specifically, what are the considerations and factors at play which influence coaches' beliefs in relation to the source and certainty of knowledge in red ball cricket? What are they key factors that ultimately influence coaches' decisions to use increasingly naïve or increasingly sophisticated approaches with their players when coaching red ball cricket?

8.5.2 Recommendation 5: Investigating epistemological beliefs across different disciplines and skills

The thesis has produced two clear overviews of the EC's that coaches are actioning when coaching red ball (i.e. Figure 7.5) and white ball (i.e. Figure 7.4) cricket. As a result of identifying differences in coaches' approaches when working in different formats of the game, there is continued value in exploring the extent to which coaches' epistemological beliefs and EC's are influenced by the *disciplines* which coaches are coaching.

Coach-participants involved throughout the current thesis had experiences in coaching across many disciplines. As the researcher however, I did not prescribe to coaches the specific content of sessions that would inform the research process (e.g. observations in chapter 4 and interviews/FG in chapters 4, 5 and 7). As a result, the thesis took a holistic approach to coaching cricket with developing athletes. Narrowing the future focus as a result of the previous data would seem prudent next step.

In offering insights into the narrowing process, cricket includes a range of disciplines (e.g. batting, bowling, fielding and wicket keeping) many with identifiable *sub-disciplines* and *variations.* As an example for readers, the *sub-discipline* of spin bowling includes *variations* such as 'off-spin', 'leg-spin', 'left-arm spin' to name a few. Future research, which could include multiple projects, should focus on specific disciplines and associated variations in attempt to identify personalised EC's based on the discipline being coached. As an important note for me to make here, this is not in an

attempt to offer a ‘right and wrong’ way to coach cricket skills. Coaches interrogating their practice within specific disciplines would continue to add to the literature and perhaps more importantly, continue to develop an increased level of self-awareness as to why coaches do what they do.

8.5.3 Recommendation 6: Design and implement an epistemological beliefs CPD intervention for coaches earlier in the ECB coach education pathway

As has been outlined, many of the coach participants throughout the thesis have been on the pathway to becoming ‘Level 4’ qualified (i.e. the highest NBG qualification). As a result, there is the opportunity to engage coaches earlier in their coach education journey in the exploration of their epistemological beliefs. Exploring coaches’ fundamental beliefs about the learning process may well encourage a shift away from the perceived ‘competency-based’ education coaches receive (D. Collins, Burke, Martindale, & Cruickshank, 2015; Lyle & Cushion, 2016) earlier in the coach development process. Given that coaches who enrol on the ECB Level 3 programme are also likely involved in coaching ‘developing athletes’ [see 1.1.5, chapter 1] the exploration of their epistemological beliefs and EC across red and white ball cricket is appropriate. As a result, the opportunity is created for coaches to develop an increased level of self-awareness much earlier in their coach development and a clearer understanding of why they do what they do from an epistemological perspective.

8.5.4 Recommendation 7: Explore epistemology ‘lower down’ the representative player pathway

In line with earlier applications and recommendations made in this section (i.e. sports with multiple formats), there is opportunity to investigate the epistemological beliefs and EC’s of coaches working with players at earlier stages of the player pathway.

Specifically, readers should note that at earlier stages of the player pathway within cricket, that the different formats of red and white ball cricket do not explicitly exist. Players are involved in matches (which on a practical note, are played using a red

cricket ball) which vary in the length of time they take. For example, representative cricket involving eleven-year-old boys normally consists of matches which are 35-overs per side (i.e. 4 hours in total). Progressing up the pathway ages, match lengths are incrementally increased to 40, 45 and 50-overs (i.e. 5, 6 and 7 hours in total) per side. Exploring the EC's of coaches working in these adapted and 'generic' formats (i.e. they are formats not recognised at the professional level) would be advantageous in once again helping to raise awareness and increase alignment of organisational coaching pathways prior to players entering the 'developing athlete' (i.e. academy) context.

As a second means of exploring epistemology lower down the representative player pathway, exploring *younger players'* epistemological beliefs would once again benefit coaches in further understanding their players and as a result, the short, medium and long-term focus of their coaching approaches. Exploring (and addressing) players' epistemological beliefs earlier within the player pathway could improve the epistemological alignment by the time successful players transition into the developing athletes' context. As a final consideration in relation to players beliefs about the linearity of the learning process (i.e., Chapter 6), further research with players earlier in the player pathway would aid coaches' understanding of when these beliefs are developed. As an interesting question, are players *bringing these pre-existing, increasingly naïve beliefs* to the environment, or are players developing these increasingly naïve beliefs *as a result* of being involved in environment?

8.6 CONCLUSION

In concluding and reflecting on the contribution that this thesis has made, it is clear that there are serious implications for both cricket coaches working with developing athletes and those involved in the wider domain of teaching and learning.

The cricket specific findings, that both players and coaches have different views about how learning happens, based on the format of the game in question, is significant.

Where it was previously assumed that coaches approached helping players to learn based on their *coaching philosophies*, the findings of the thesis suggest that epistemology has not been an integrated aspect of coaches philosophical positioning. It is clear from the findings of the thesis that epistemology is a key influencer on coach decision-making, yet an area which is rarely considered by coaches and coach educators alike. What is worth investigating specifically, is where coaches believe knowledge 'comes from' and the extent to which knowledge changes or remains the same.

In concluding the thesis, there is a clear call to action for those involved in the education of cricket coaches. As has been presented in the latter part of the thesis, coaches have found clear interest and benefit in considering their epistemological views in line with their coaching practice. As such, continued developments in this area are welcomed. As a related point, once coaches have an increased level of epistemological self-awareness, there are opportunities for coaches to work with players under their supervision in this area. Unpacking players' epistemological views would not only have significant benefits for the learning process within cricket but also further afield.

In acknowledging the wider landscape and considering the field of education more broadly, it seems reasonable to suggest that a practitioner involved in helping others to learn, would benefit from an increased awareness and exploration of their own epistemological views. In maintaining the pragmatic aspirations of the thesis, this exploration is not in the view of creating a 'one size fits all' model. The hope however is that education and learning, whether that be learning in the classroom, learning how to drive or learning how to build a house, would continue to become increasingly individualised, increasingly engaging and most importantly, increasingly effective.

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APPENDICES
APPENDIX 1

Criteria for assessing rigor and trustworthiness in Qualitative research
(B. Smith et al., 2014)

- Substantive contribution: Does this piece contribute to our understanding of social life? Does the writer demonstrate a deeply grounded (if embedded) social scientific perspective? How has this perspective informed the construction of the text?
- Impact: Does this affect me? Emotionally? Intellectually? Does it generate new questions? Move me to write? Move me to try new research practices? Move me to action?
- Width: This criterion refers to the comprehensiveness and quality of evidence the researcher(s) provide in their final report as well as to the proposed interpretation or analysis. Numerous quotations in reporting studies, as well as suggestions of alternative explanations, should be provided for the reader's judgment of the evidence and its interpretation.
- Aesthetic merit: Does this piece succeed esthetically? Does the use of creative analytical practices open up the text, invite interpretive response? Is the text artistically shaped, satisfying, complex, and not boring?
- Coherence: Coherence can be evaluated both internally, in terms of how the parts fit together, and externally, namely, against existing theories and previous research.
- Dialogue as a space of debate and negotiation: This criterion refers to the ability of the research to open up meaningful dialogue among different people.
- Personal narrative and storytelling as an obligation to critique: Does the story enact an ethical obligation to critique subject positions, acts, and received notions of expertise and justice within and outside of the work? If so, how?
- Engaged embodiment as a condition for change: This criterion refers to the ability of the research to make political action and social or personal change possible in and outside the work. If this criterion is appropriate for the research being judged, and if the research does have strong potential to make change, then it meets this criterion and can be deemed 'good'.
- Worthy topic: The topic of the research is relevant, timely, significant, interesting, or evocative.
- Rich rigor: The study uses sufficient, abundant, appropriate, and complex theoretical constructs, data and time in the field, sample(s), context(s), and data collection and analysis.
- Sincerity: The study is characterized by self reflexivity about subjective values, biases, and inclinations of the researcher(s); and transparency about methods and challenges.
- Resonance: The research influences, affects, ormoves particular readers or a variety of readers through esthetic merit, evocative representations, naturalistic generalizations, and transferable findings.

- Credibility: Has the researcher spent a significant amount of time with participants? Were participant reflections on the researcher's interpretations of the data sought? Participant reflections, or what is sometimes known as member checks, can open up dialogue about the fairness, appropriateness, and believability of interpretations offered. As participants reflect, fresh light on the study may too be thrown up, providing a spur for richer and deeper analyses. Participant reflections or member checking is, therefore, less a test of research findings or a technique to achieve trustworthiness. Instead, they are an opportunity for dialogue with participants, reflexive elaboration, critique, feedback, affirmation, disagreement, and even collaboration.
- Transparency: Was the research made transparent through, for example, an audit trail? Did another person, such as a critical friend, scrutinize matters like theoretical preferences, breadth of the interview sample, and the process of sorting, choosing, organizing, and analyzing the data? Did a researcher present his or her interpretations of the data to critical friends who provided a theoretical sounding board to encourage reflection upon, and exploration of, alternative explanations and interpretations as they emerged in relation to the data? Here, in contrast to peer debriefing within a parallel position, the notion of presenting an interpretation acknowledges that while there can be agreement, not all those involved in the process need to define the meanings of a particular data set in the same way as they can be positioned differently in relation to their theoretical interests, research experience, and power resources. This is not a problem. On the contrary, the different perspectives offered by critical friends are used as a resource for challenging and developing the interpretations made by any one researcher as they construct a coherent and theoretically sound argument to defend the case they are making in relation to the data generated in a particular study. Thus, no claims are made about validity or reliability. Every opinion offered is rather a resource to deepen and extend interpretation. They are also a reminder that for every additional viewer there is an additional view.
- Incisiveness: Research that gets to the heart of a social issue. It goes to its core. It does not get swamped with details that have no inherent significance and do little to increase the cogency of the research itself. Incisiveness means that the work of research is penetrating; it is sharp in the manner in which it cuts to the core of an issue.
- Generativity: The ways in which the work enables one to see or act upon phenomena even though it represents a kind of case study with an n of only 1.

APPENDIX 2

Participant Consent Form (Chapter 4)

University of Central Lancashire (UCLan) - Institute of Coaching and Performance

PhD Thesis Research - Participant Consent Form

Project Title: An exploration of the Epistemological basis of red ball and white ball cricket - The what, how and why of coaching cricket to developing athletes

Main Researcher: Matt Crowther **Email:** MCrowther1@uclan.ac.uk

Telephone Number(s): 01772 894903 (Office) 07919006795 (Mobile)

Independent Contact: Dave Collins (Director of Studies)

E-mail: DJCollins@uclan.ac.uk

Please read the following and circle a response:

1. I have received and read a copy of the information sheet	Yes No
2. I understand that participation in this study is entirely voluntary	Yes No
3. I understand that I am free to withdraw at any point during this study and that all the data collected at that point will be removed	Yes No
4. I agree to take part in an audio-taped interview	Yes No
5. I understand that all audio-taped conversations will be transcribed in an anonymous fashion	Yes No Yes No
6. I agree to my coaching sessions being observed	Yes No
7. I understand that the data I will provide during the audio-taped Interview will be used as the basis for ongoing research into coach decision making – including the production of journal articles and conference presentations.	Yes No
8. I understand that my identity will be at no point revealed in this research study	Yes No
9. I confirm I have had an opportunity to ask questions and have had those questions answered fully	Yes No

Signature of Participant:

_____

Please print name: _____

Date: _____

APPENDIX 3

Initial Interview Framework (Chapter 4)

What's the point in asking about these themes?	**Theme covered**	**Main Question**	**Prompts/Probes**
Helps to get an understanding of context the coach is working in. It may have an impact upon the way the coach works on a day to day basis and hence the types of decisions that coaches can/are able/willing to make	Aims of the Organisation	What are the aims of your organisation as a whole?	
		What are the aims of your particular part of the organisation?	How do these fit in with the aims of the organisation as a whole?
		What are the more specific aims associated with your current coaching role?	Short, Medium, Long-term How are these aims generated? What level of control do you have over these aims? How much do you agree/disagree with these aims?
Enables me to get the coaches views on where they are in the season and what the overarching focus is. This section helps to set up whether there is a level of "nestedness"/constructive alignment	Stage of the Season + PJDM (meso/macro)	What are you focusing on at this particular stage of the season? • How is that different to what you are working on before? • How is that different to what you are going to be working on next?	Positive issues and negative issues What is it that you are trying to work towards? What have you been working on in the previous stage – are there any links? Are there things that you would like to do that you can't? (Why is this?)
Ground Zero about coaches' beliefs about learning and knowledge. The final question allows context to be taken into account	Epistemology	How do you think players learn new skills? How is it that players become more knowledgeable? When is the best time for players to learn new things?	

Gaining more information here about the coaches practice in relation to learning. Is what happens 'on the floor' representative of what coaches believe about learning?	Epistemological Chain	How do you go about helping a player to learn a new skill? Give me a practical example from a session – what practices did you use and how did you behave/act as the coach? How is it that you know a player is learning? When are the best times for players to learn new skills? (Why is that?) When are the worst times for players to learn new skills? (Why is that?)	
PJDM questions – allows an exploration between what the coach has said about their beliefs about learning and what they do in practice **Easy to make assumptions here – e.g. the coach said they believed players develop their own knowledge but in the observed session coach uses a very strong 'tell' approach = no epistemological chain!?!?!?!?**	PJDM (micro)	What were you working towards in today's session?	How did you decided this? Why was this done today? How successful were you in achieving this?
		What other sessions have you done with the player(s) that tie into the things you were doing in this session?	
	PJDM (micro) Today's session	ASK THE COCAH FIRST… Given what you had planned, what were the key success/failure moments within today's session for you as a coach? • Why was that? • What are you going to look to do from now on? I observed that you….why did you do that?	What were you trying to achieve with the player(s) when you did that? What alternative strategies did you consider before you did that? How often do you do that? Would you ever do it differently? (Why?) What types of things WOULDN'T you do in that situation? Why?

APPENDIX 4

Participant Consent Form (Chapter 5)

244 Greenbank Building
University of Central Lancashire
Preston
Lancashire
PR1 2HE

Dear Andrew,

Thank you for letting me come into your Level 4 day and working with me around the idea of player learning in red and white ball cricket.

What I would like to do is use some of your thoughts and experiences to support my ongoing PhD.

Essentially what this means is that I would use some of the material from the session today, make it anonymous so that nobody knows who has said what (e.g. Coach A, Coach B) and attempt to write an article outlining some results of the day. There's also a chance that I might present some of my work at future days similar to this or more general sport, and cricket coaching conferences.

If you're happy for this to happen, then please sign below. If you'd like to be sent a copy of the work when it's completed, please leave your email address.

Thanks again,

All the best,

Matt Crowther

Pathway Lead: Sports Coaching and Performance (BSc)

Name: Andrew XXXXX

I am happy for the conversations I will take part in today, to be anonymised and contribute towards ongoing work in the area of player learning in red and white ball cricket.

Signed:

E-mail:

APPENDIX 5

Participant Information Sheet (Chapter 6)

University of Central Lancashire - Institute of Coaching and Performance

Participant Information Sheet

Main Researcher: Matt Crowther

E-mail: MCrowther1@uclan.ac.uk

Phone: 07919006795 (Mobile) 01772 894903 (Office)

1. **Study title:** The What, How and Why of Cricket coaching

2. **Why am I being asked to be involved?**

As someone who is currently involved in a cricket programme, you are someone who could help us with the study

3. **What is the point of the study?**

The study is aimed at trying to find out what cricket players believe about the learning process and how this might be different from what coaches believe.

4. **Do I have to take part?**

It is up to you whether you take part in the study or not. However, if you do decide to take part, you can withdraw from the study at any point should you change your mind. It's also important that you know that this study will not have any positive/negative impact on your place on your cricket programme. The study and your cricket programme are completely separate.

5. **What will happen to me if I take part?**

The study will involve having a 1:1 discussion with Matt about your cricket development to date, how you developed your skills as well as some wider questions about the how learning happens. At times, conversations may alternate between learning cricket skills (e.g. batting, bowling, fielding) and other skills you have developed (e.g. reading, learning to cook etc.)

6. **What happens if I want to stop taking part?**

You can withdraw at any time without having to give a reason. Any data collected will be removed and not used in the study.

7. **Contacts details for an independent representative of the research project:**

If you would like to speak to an independent person about anything relating to the project, please contact:

Director of Studies: Dr Loel Collins

E-mail: LCollins@uclan.ac.uk

APPENDIX 6

Participant Consent Form (Chapter 6)

University of Central Lancashire (UCLan) - Institute of Coaching and Performance

PhD Thesis Research - Participant Consent Form

Project Title: The What, How and Why of Cricket coaching

Main Researcher: Matt Crowther **Email:** MCrowther1@uclan.ac.uk

Telephone Number(s): 01772 894903 (Office) 07919006795 (Mobile)

Independent Contact: Loel Collins (Director of Studies)

E-mail: LCollins@uclan.ac.uk

Please read the following and circle a response:

1. I have received and read a copy of the information sheet	Yes No
2. I understand that participation in this study is entirely voluntary	Yes No
3. I understand that I am free to withdraw at any point during this study and that all the data collected at that point will be removed	Yes No
4. I understand that taking part in this study does not impact on my progress within my cricket programme	Yes No
5. I agree to take part in an audio-taped interview	Yes No
6. I understand that all audio-taped conversations will be transcribed in an anonymous fashion	Yes No
7. I understand that my identity will be at no point revealed in this research study	Yes No
8. I confirm I have had an opportunity to ask questions and have had those questions answered fully	Yes No

Signature of Participant:

_____

Please print name: _____

Date: _____

APPENDIX 7

Example Interview guide (Chapter 6)

<table>
<tr><td colspan="3">Aims of the interview:
To delve deeply into how players actually think learning happens (in cricket).
What is it about learning activities that help them to learn the skills they are trying to?
To guide players to discuss the five dimensions of epistemology identified in the literature</td></tr>
<tr><td>Section 1: Who are the players?</td><td>“Give me an overview of your cricketing journey from when you first started, to now”
“Talk to me a bit about you as a cricketer – what are you known for?”
What are your strengths?
What are your weaknesses?
What have you (recently) gotten better at or learnt?
What do you still need to get better at/What do you need to learn?</td><td></td></tr>
<tr><td>Section 2: How are you going to learn that/get better at it?</td><td>You just told me that you needed to get better at/learn ‘x’ – can you talk to me about how you might go about that?
Why are you suggesting that particular way?
How does that actually help you to learn?
What are the specific parts of the activity/exercise/drill that help you to learn?
Are there any other ways that you considered before choosing that approach?
Why did you consider these?
What are the specific parts of these activity/exercise/drill that help you to learn?
Is there anyone else involved in the process of you learning?
What does that look like? [What would we see if we were ‘walking the dog past’?
What specifically about this is helping you to learn?</td><td>REPEAT FOR MULTIPLE THINGS THAT THE PLAYERS HAS IDENTNFIED THEY ARE LOOKING TO IMPROVE (e.g. multiple batting skills, bowling/fielding skills + tactical elements) IN ORDER TO DRAW OUT SIMILARITIES/ DIFFERENCES</td></tr>
</table>

	▪ What does it sound like? [If I was blindfolded, what would I hear going on?] • What specifically about this is helping you to learn? o To what extent would your approach to learning/getting better at 'x' be the alter throughout different points of a year? ▪ Why/Why not? ▪ What is different about the times of the year you have mentioned? ▪ What is it specifically about these activities that would be beneficial to helping you learn at this time of the year?	
Section 3: "Learning in life"	▪ We're now going to look at a number of scenarios, that involve me having had amnesia and forgotten everything I know. ▪ I'm 100% physically able, able to listen, do – capable of **EVERYTHING** however I have literally forgotten everything I have known so need to re-learn it. *Scenario: I've got amnesia and have forgotten how to cook pasta. How are you going to go about helping me to learn how to cook it?* *Scenario: I've got amnesia and have forgotten how to catch. I'm involved in games and activities that involve a range of different sizes of balls. How are you going to go about helping me to learn to catch?* *Scenario: I've got amnesia and have forgotten that flames are hot. How are you going to about helping me to learn that flames are hot?* *Scenario: I've got amnesia and have forgotten how to paint. I need to paint the fence in the garden. How are you going to go about helping me to learn to paint?*	Prompts and Probes: ▪ How does that approach actually help me to learn? o What processes are taking place that enable me to learn? o What are the specific details of what's happening? ▪ What were the factors that influenced your decisions regarding your strategies? o I.e. what were the things that you considered when creating your strategy to help me learn? ▪ To what extent is this the approach that you would use with everyone in this situation?

APPENDIX 8a

Participant Consent Form (Chapter 7)

University of Central Lancashire (UCLan) - Institute of Coaching and Performance

PhD Research Project

Participant Consent Form

Project Title: An exploration of the Epistemological basis of red ball and white ball cricket - The what, how and why of coaching cricket to developing athletes

Main Researcher: Matt Crowther **Email:** MCrowther1@uclan.ac.uk **Phone:** 07919006795

Independent Contact: Dr. Dave Grecic **E-mail:** DGrecic@uclan.ac.uk

Please read the following and enter a response	
I have received and read a copy of the information sheet	
I understand that participation in this study is entirely voluntary	
I agree to create two coaching session plans and send them via e-mail	
I agree to take part in a c.45-minute powerpoint/video workshop package, within 2 weeks of completing the second of the coaching session plans	
I agree to take part in an audio-taped interview that will be transcribed in an anonymous fashion	
I agree – in line with GDPR – that I am giving my consent for my data (i.e. coaching session plans and the interview) to be processed by the lead researcher	
I understand that I am free to withdraw from the study at any time until 31st December 2020 and that my contributions up to this point will be destroyed	
I understand that my identity will be at no point revealed in this research study	
I confirm I have had an opportunity to ask questions and have had those questions answered fully	

Signature of Participant: _____

Please Type name: _____

Date: _____

APPENDIX 8b

Participant Information (Chapter 7)

Coach	Coaching qualification	Current coaching role	Full-time (FT) or part-time (PT) role	Previous first-class playing experience (Yes/No)
Damian	ECB level 4	Head of Talent Pathway	FT	Yes
Jay	ECB level 3	High Performance Coach	FT	Yes
Gareth	ECB level 3	High Performance Manager	FT	No
Pete	ECB level 3	Performance Coach	FT	Yes
Craig	ECB level 3	Head of Talent Pathway	FT	No
Simon	ECB level 4	First Class Assistant Coach	FT	Yes
Mo	ECB level 3	Specialist skill consultant working within a first-class county	FT	Yes
Brian	ECB level 3	Freelance coach working with multiple organisations in developing athlete contexts	PT	No
Lucas	ECB level 3	Academy and Talent Pathway Coach	FT	No
Andy	ECB level 3	Talent Pathway Coach	PT	No

APPENDIX 9

Example Red Ball Coaching Session Plan 1 (Chapter 7)

Notes: Some details have been anonymised using Coach A, Coach B etc. alongside players names replaced with xxxxx and players' initials where appropriate

****** Academy session plan

Primary Skills Practice (White ball)

Academy Players – xxxxx, xxxxx, xxxxx, xxxxx and xxxxx.

Non – Academy – xxxxx, xxxxx, xxxxx

Staff – xxxxx, xxxxx, xxxxx, xxxxx (physio) and xxxxx (SnC)

Session goals – Focus on your primary skills, PDP related fielding/SnC work, YOUR TIME (players to drive their own extra practice where possible)

9:30am warm ups 10 mins – with xxxx

9:45 fielding 20mins - square, inner-ring (Coach A), boundary riders (Coach B), midon/off footwork drills (Coach C), ramp catching (Coach D) – players to use maximum 2 stations depending on primary skills

10:15 40mins Nets

JG & BG v JS & ML (seam)
JP & HH v HS & JM (spin)

Coach A – batters
Coach B – seamers

Coach C – spinners
11:30 – 30 mins YOUR time, all staff available

MID-DAY – END

What would I be doing?

Staff would arrive by 9am, and we would go through the plans. Ask if anyone has any other input for the plans. Confirm with the physio that all players are 'fit to go'. I would then write the plan to my whiteboard, ready for 9:30, when I would outline the plan to the players and explain the whiteboard.

During the warm-ups, the skills coaches would set up the fielding stations.

FIELDING

The focus is for technical improvements, reading shape of shot, as well as development of cognitive thinking

My station would require 4 flexi-stumps, 4 cones, bat, mitt and a bag of fielding balls. I would need someone to feed.
I would expect 4 players to prioritise my station as they all specialise inner-ring and square to the wicket xxxx, xxxxx, xxxxx and xxxxx. I would use Coach B to feed me as I hit the ball.

Initially it is me hitting, fielders to attack and shy at nearest set of stumps, backed up and return to feeder. Key elements to observe and encourage – split-step, weight on balls off feet, attack with intent, shy with chest to target, and COMPLETE THE DRILL.

Progress to 2 shies at opposite stumps.

Progress to 2 shies and 3rd throw to someone over the stumps AND break the stumps.

NETS
My focus would be with the 2 spinners and measuring their session against their ability to execute their PDPs

xxxxx (RAOS) – PDP is creating deception through clever use of a good pace range. Hugh's ability to do this relies on him holding his left side a fraction longer and staying on a strong front leg. He should be focused on those areas while warming up before batters enter.
Xxxx (RALS) – PDP is for him to deliver consistently good areas but by use of crease and angles. Joe gets bored quickly and therefore struggles to practice well enough for long enough. The message is to stay engaged and repeat his action from different positions on the crease, rather than bowl with variations that compromise his best action.

YOUR TIME

When I put on a primary skills session, I leave a 'free period' for the players to then cover off any other practice they want out of the day, or if they are done, go home. All staff available to assist.

Finish with a quick debrief with the staff.

APPENDIX 10

Example Red Ball Coaching Session Plan 2 (Chapter 7)

Notes: Some details have been anonymised using Coach A, Coach B etc. alongside players names replaced with xxxxx and players' initials where appropriate

XXXXXX Boys EPP Red Ball Session

Group background

13 in group
3 Spinners (1 leg spinner and 2 off spinners) – 1 U13, 1 U14 & 1 U18
4 Seamers (all RA) – 1 U13, 1 U14 & 2 U15
6 Batters (5 RH and 1 LH) 2 U13, 2 U15 & 2 U18
All of the group are still mastering the skills and tactics to effectively adapt and be successful in specific phases of red ball cricket.

Session purpose

For bowlers and batters to experience and understand the tactical and mental implications of red ball scenarios and to have started to formulate techniques and tactics to be able to deal with them effectively.

Warm up – 20 mins

R.A.M.P Warm up – player led with coaches supporting (ensuring exercises being performed correctly and safely)

Fielding – 60 mins

'Run out the batter'. 1 team to 'run', 1 team to field. Coach hits to first fielder who throws at the non-strikers' end stump looking for a direct hit before the batter has made it home. Backer up then returns the ball to the 'keeper' if batter isn't run out at the non-strikers' end to run him out at the second attempt. Fielders rotate between receiving hit from coach and backing up. 5 pts for a direct hit run out and 1 point for a run out at the keepers' end. Both groups to field, winning team the team is team that scores most points.

Catching using Katchet Ramps – 4 ramps to be used. Group to split evenly across the ramps. 1 to feed and the rest to catch. Walking towards ramp and using strong 'set' position. Players encouraged to get closer as sessions goes on. Throwers to be rotated regularly.

Batter v Bowler Combat – 90 mins

Seamer lane.

New (or nearly new balls to be used). A 'zone' is to be set using cones roughly from point to extra cover and square leg to straight midwicket. 1 point to batter if ball is hit in between the cones straight (i.e. hitting mid off/mid on/sight screen) 1 point to bowler if ball is hit in between the cones (i.e. in between point and extra cover or square leg and straight mid wicket). Coaches to monitor and question as contest goes on. What challenges does this bring (technical? concentration? shot selection? Patience around

hitting 4th stump?) What strategies are the batters and bowlers employing in an attempt to force a scoring opportunity and a mistake from their opponents?? If bowlers get the most points then batters pack the nets away and vice versa.

Spin lane.
Mat turned upside down to recreate a turning pitch. Dead zone to be set either side of the batter using cones approx. 6ft apart, just in front of square. If ball is hit in between the cones then batter is out. Batting pair to be out most times lose and pack nets away. Again, coach to observe and question. What techniques are the batters employing to avoid hitting the 'dead zone'. What are the bowlers doing to force a mistake?? Bowlers are allowed to move the dead zone further in front of square or behind square when coach sees fit although dead zone must remain 6 ft wide.

Debrief – 10 mins
Batters and bowlers together – honest feedback of themselves but also of each other. Coaches to facilitate this.

APPENDIX 11

Example White Ball Coaching Session Plan 1 (Chapter 7)

Notes: Some details have been anonymised using Coach A, Coach B etc. alongside players names replaced with xxxxx and players' initials where appropriate

Group session: XXXXXX u19s
Format: one day cricket
The Scotland u19s group play against county academies or other European Countries in One Day Cricket matches. This session will reflect a training session that is geared towards them developing for this programme.
Session Length: 6 hours – 10am-4pm
Staff: GD (Head & Seam Bowling), CE(Batting), TB (Fielding and Spin)
Group: there is a group of 14 players at the sessions categorised as the following:

- Top 5 batters: 8
- All-rounders: 8
- Spinners: 6 (3 front line)
- Seamers: 5 (3 front line)

Facilities available:

- Session taking place at the National Cricket Academy (indoors)
    - 6 lane hall with full run ups
    - classroom

Aim and Objectives:

- Improving batting options in different situation, continued introduction of power hitting
- Transfer of these batting skills into match scenarios
- Developing team culture
- Improving throwing technique under pressure

Time	Session content	Groups	Session output	My role
10 – 10.15 Kit: Warm up kit White board markers	Introduction, setting the scene & warm up Daily tasks to be completed: - 100 sprints - 500 skips Warm up: - Player led session focusing on the RAMP process	All Not attending: TM, TB, RH, RE,	Development of understanding in the players of the programme ahead	Explain the session and outcomes. Talk to the players about them developing clarity on their games and how the need to continue to reflect on what their strengths are.
10.15 – 12.30 Group of 3 or 2 25	Batting Specific Session Lane 1: left arm new ball swing – 80 mph Lane 2: back foot using side arm – use incrediball decreasing distance between thrower and hitter Lane 3 & 4: gapping using the Merlyn -switching from right arm to left arm spin Lane 5: sweep shot work using hockey sticks/small bat Lane 6: power hitting – moving from hitting heavy balls to overarm feeds Set up: 3 per lane 25 mins per lane for set	Whole group	Lane 1: rotation and attacking options Lane 2: define individual options for each player Lane 3/4: Getting used to Merlyn, what are your gapping options (giving access): sweep, down the wicket, gap to leg, back foot punch, Lane 5: being dynamic, using full face, footwork Lane 6: kinetic chain movement, synching and straight swinging	My focus coaching zone is lanes 3/4 against the merlyn. I will discuss options with the players and ask them to shadow them. Then discuss what cues will make them decide to play the shot, is there any premeditation required with any of the shots. And what might be easier/preference for them against different types of bowlers and whether they would look to change options and why?

12.15 -1	Lunch Chat on our group culture - Cedric to lead	Whole group	What does a good culture look like What do we want our culture to look, feel like How does every individual input into it and what behaviors shall we see	Support the sessions delivery working with the group in their discussions so they understand what is being asked of them and why.
1 – 2 Kit: balls, cones, weighted balls, crash mats	Fielding session: 3 stations: Throwing: using weighted balls (GD) Target throwing: turn and throw inside cones, stump targets, angle cutting (CE) Diving catching: high rep, working on landing mechanics (TB) Full group drill: four corners double option drill	Split into 3 groups Whole group	Develop better throwing techniques Improving throwing accuracy Improving diving technique	Toby is our fielding lead so will lead this section. I will support in the development of a more efficient throwing action using different weighted balls. The four corners drill works on the pick up and accuracy of throwing under pressure. The job for the coaches during this drills is to build the intensity required and add extra pressure on to the players through this.
2.10 - 4	Scenarios: Facing the new ball: 25 – 1 in 6 Playing spin: 21s Middle overs: Target 30 – 1 in 5	Batting: AG, US, DC, LN, DMC, AR, JD	Application of morning learning for batters Monitoring of bowling accuracy	My role in this part was to continue to work with the batters in playing spin and align discussions form the morning to what was demonstrated during the live scenarios.

		Bowling: Seam: JCh, KS, RK, EM Spin: CG		We played the 21s game. Where bowlers got 2 runs for a no ball and the batters we given 1 run for hitting a gap. What were the options against different types of bowlers. Did they have more success against some then others? Due to the surface was it easier to play certain player so the back foot. Lead debriefs with the small group of batters and bowlers on what was successful and why? If batters were successful what might the bowlers change and visa versa.

Sessions debrief:

- As a group feedback on the different parts of the session. What were the main individual and group learnings?
- My role here is to lead on this section. Might need to delve in a bit further into the specific learning aligned to the aims of what we are trying to do.

The key learning aspects of the session:

- Clarity on batters scoring options against different types of bowlers
- Developing the skill of power hitting
- What the groups key values and behaviours are
- Why do they set the fields they do, did they notice any individual aspects for batters?
- How good was the throwing accuracy under pressure and why?

APPENDIX 12

Example White Ball Coaching Session Plan 1 (Chapter 7)

Notes: Some details have been anonymised using Coach A, Coach B etc. alongside players names replaced with xxxxx and players' initials where appropriate

White Ball Session Plan - Batting

Player: GM
Level: xxxxx Academy
Player Bio: Strong white ball cricketer, very much developing his red ball game. Has played several destructive white ball innings across his time in the pathway. Yet to score a red ball hundred.

1	Head back into the ball after trigger movement – head can go outside off. Trigger a bit earlier.
2	Singles – scoring options to keep the strike ticking over. Game management adapt to situation.
3	Interception points – play it late, not in front.
4	Head position on short ball – stay level,back into the ball, don't lean back.

Session Location: OPCC – Outdoor Nets
Session duration: 2 hours

Current Batting Specific PDP Goals in priority order:

Continual work ons (WB Specific):

Scoring options
– do not rely solely on boundaries to catch up from dots.
- new scoring areas (3rd man & off the hip especially)

Session format:

- GM to bat for full session against a new white ball – facing seam bowling.
- LP on dog stick (vary between pink stick & RoboArm to change pace up and down, along with bounce)
- Aim to get 30 overs of batting time in.
- Session split into 2 scenarios – 20 overs as first 20 (opening the batting). 10 overs as last 10 (batted through the innings and is 130*)
- Field set on a whiteboard – changes according to situation. However must have one of either short 3rd man (try to beat him) or singles available into square leg and midwicket (off the hip) so he has a bit of freedom to explore these shots.
- Whiteboard with tally chart on tracking the following:
  1) overs bowled
  2) score by over
  3) wickets lost (does not change the scenario he carries on batting) and how they were lost. Note down if execution or decision-based issue.
- Must have a positive intent and be looking to score
- FOREFITS
  – for every over he does not score off at least 2 balls he must run a 4.
  - if he defends 3 balls in a row not looking to score he must run a 4 (leaves are allowed in first 10 overs)

- for every over he does not face more than 2 dot balls LP must run a 4.
- no forfeit for losing wickets

- At end of session discuss his score and how he managed to score the runs. Boundaries/singles etc. Is he happy with the split of his scoring? Is he happy with his intent? Could he do anything that would improve his results in the scenario? Did he take advantage of his new shots? Check and challenge why he is thinking things/why he is happy or unhappy with his performance etc.

APPENDIX 13

Link to the online learning package (Chapter 7)

Direct link to online learning package:

https://youtu.be/arqSRXnLCPk

APPENDIX 14

Example Interview Guide (Chapter 7)

Phase 1a: Creating connections between the session plans and the CPD video

** Share screen with the summary table on it **

General Conversation style:

- *What did you think re; presentation style? Any questions from the video RE: Content? To what extent is it engaging for cricket audience?*

Introduction

Just to give you a heads up on where we're going:

- "We'll start with your thoughts on the activity and the links you've made, reflections you've got on your sessions and questions from the video"
    - "I've got your two plans in front of me and I've made some notes too so I'll definitely be getting stuck in and hopefully asking some clarification and 'nudge' questions"
- At the back end, like you might find in a face to face workshop, we'll finish with a 'what you're thinking now' and/or 'what impact is this going to have on your coaching' so that you've got some tangible takeaways from getting stuck in to the process.

Talk to me about the links you've made between the what you saw and the session plans you put together…Let's start with the **white ball** plan…

- and what are your thoughts about that?
- Have you always done it that way?

MC primed with notes of his own! "So I've made some notes as well. Can you talk to me about 'activity X'. I'm interested in the 'relationship/methods/judgements etc.

Phase 1b: Check and Challenge based on MC notes…

(A) Objectives

- Bring your individual 50-over game plans to life – *Can you give me the backstory to this. How has this literally happened? How have individual game plans happened?*
    - *For example, you say "that we've prepared"*
- [*Praparation for Practice – you know what you had to do…*What are you expecting the players to do/have done? Why would they have chosen to do this? How would they have known to do these things]

(B) Role

- What is it, specifically, that you are doing which is helping the players to learn?

(C) White Ball Content

- Opening batsmen make sure you set the right kind of scenario – determined by your role
- DEATH HITTING – "Guys at the top of the order, I don't mind if you play this a little bit differently" – powerplay. "How much of the ground can we access? (360)
- SHORT BALL (NET 4) – "I'm quite happy if you want to have a look at a ramp"
- Can you take me through the 4 LANES and discuss the role of the coach within each activity?
    - How is that helping the player(s) to learn?

(D) <u>Red Ball Content</u>

- Commit – "If the coach decides you haven't committed…then you'll do 10 push ups" – IF THE COACH DECIDED…
- NET LANES: Can you make links between the 4 Net Lanes and any of the elements of the RED BALL figure?
    - What are the coaches' roles across the 4 Net Lanes? Why?
        - What is the coach doing in the 65mph net?
        - How is that helping the player(s) to learn?

****** Open up a conversation about playing the short ball and the type of practice in red vs. white ball **** - Use the models to support this?**

[OPTIONAL] Phase: Reviewing dimensions of epistemology?? Coaches Mapping of themselves

Phase 2: Explicit review of 'coaching process' figures [created as a part of the PhD and a key aspect of the online coach development package participants are asked to 'complete']

** Screen share with the figures on it **

"We've discussed a range of things in the last xx, I'm interested in your thoughts on these overviews of the coaching process…"

Possible prompts/probes:

- Which aspects of these do you think have 'stood out' for you in your coaching/planning?
    - Why? Alignment/Mis-alignment?
- To what extent are aspects missing from the figures?
- To what extent has doing this helped you make sense of your own beliefs about learning?
- How beneficial is this for coaches?

Phase 3: So what do your reflections mean for you moving forward?
Given that you now know something that you didn't know before, what does this mean for your coaching?

- How is this going to impact on your planning and practice moving forward?
    - Why is this? How do you think you will operationalise that?

- What areas are you going to integrate from this process into your future planning/coaching?
- Which aspects weren't that applicable/beneficial for you?
    - Why doesn't it add value for you?

APPENDIX 15

Social Validation Questionnaire (Chapter 7)

Direct Link: https://www.surveymonkey.co.uk/r/BeliefsaboutLearninginCricket

* 1. What reflections would you have for coaches who are going to be invited to take part in this process in future?

* 2. As a result in taking part in this process, what will you

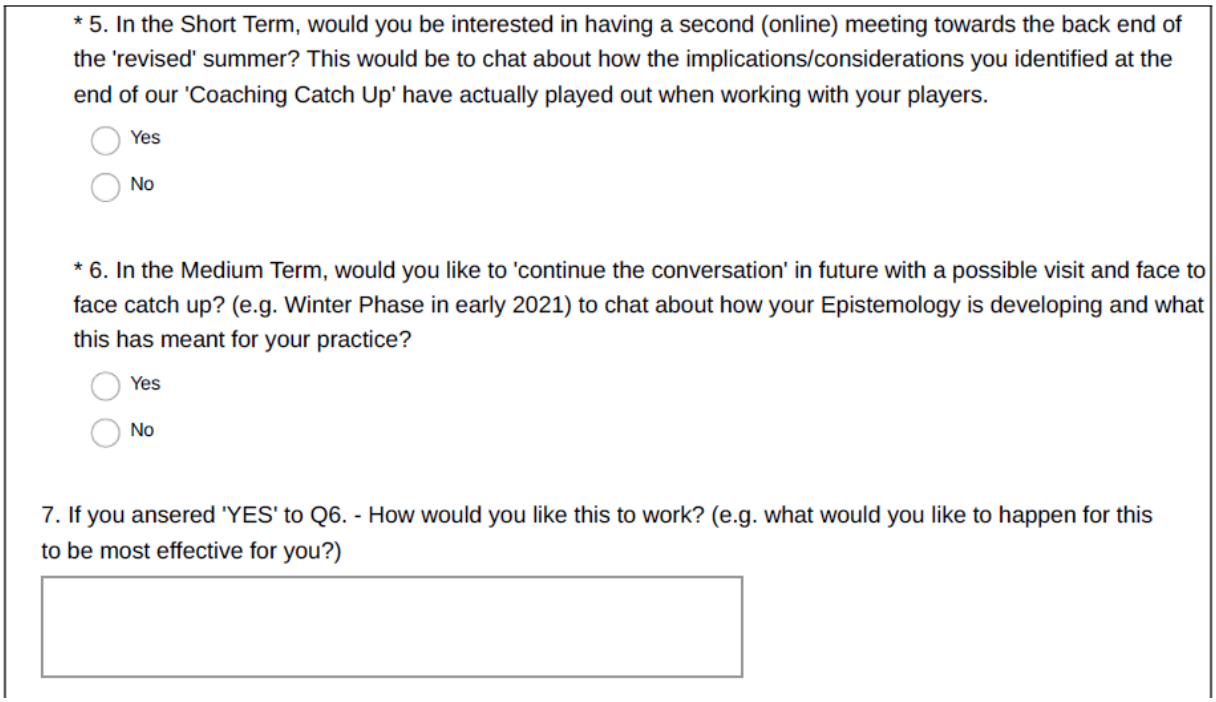
Start doing in your coaching/role?

Stop doing in your coaching/role?

Continue doing in your coaching/role?

3. The process involved 1) a meet and greet 2) the creation of two session plans 3) watching a video and making notes/comparisions to your sessions 4) an online conversation - what improvements would you recommend to this process?

* 4. Please watch the short video and answer below...



Nb: Q4 contained a short video of me as the researcher asking participants to offer a 'blurb' in relation to *where they are now*, having taken part in the process. (The video can be accessed via the link).