

# **THE ANALYSIS, SUPPORT AND DEVELOPMENT OF COACHES' TACTICAL KNOWLEDGE IN PRACTICE**

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**A thesis submitted in partial fulfilment of the requirements of Liverpool John Moores  
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## **Declaration**

No portion of the work referred to in the thesis has been submitted in support of an application for any other degree or qualification of this or any other university or other institutes of learning.

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## **Abstract**

Game-based practices have been identified as significant approaches that support players to develop game understanding, strategic knowledge and decision making skills alongside developing their technical ability. However, for game-based approaches to be an effective method of practice, it is paramount for coaches to have extensive tactical knowledge. Despite the growing body of literature exploring the knowledge requirements of coaches, there is still a considerable lack of studies exploring how novice and intermediate level coaches develop their sport-specific knowledge. Moreover, the tactical knowledge concepts of sport-specific knowledge are still an underexplored area of research. Therefore, further investigation is required to enhance the understanding of coaches' tactical knowledge development. Accordingly, the thesis examined how, what and when novice/intermediate football coaches develop their tactical knowledge while studying on a level 3 qualification. In addition, the thesis explored if a conceptual model and framework could aid coaches' tactical knowledge development.

The thesis adopted a pragmatic research paradigm philosophy implementing scientific realism and pragmatism as the ontological and epistemological foundation. The methodology of an action research design-based approach incorporated methods such as; focus groups, object learning, reflective practice, participant observation, stimulated recall interviews, and case studies to collect and analyse the data. Findings illustrated a significant differentiation of coaches' baseline knowledge at the start of the course. However, while several coaches were unable to define several key concepts of tactical knowledge when questioned (declarative knowledge), all coaches were able to show the application of several tactical concepts (procedural knowledge) of the game in their demonstrations. Moreover, findings exemplified that the moments of the game and principles of play are the two most significant concepts of tactical knowledge. Findings illustrated that coaches who displayed more advanced knowledge of the moments of the game and principles of play were able to demonstrate greater knowledge of the other tactical knowledge concepts (i.e., styles of play, systems of play, strategies and tactics) and display conditional knowledge in practice. In addition, findings suggest that

the development of a conceptual model and framework significantly aided the coach's declarative and procedural knowledge development, with the utmost change in tactical knowledge occurring once a coach had constructed their model.

The discoveries of the thesis contribute to an evolving, problematic epistemology of football coaches' tactical knowledge development and highlight shortcomings in terms of tactical concepts and the capacity to support tactical knowledge development. The thesis presents coach educators, coaches, academics and education providers' opportunities to inform coach education delivery, academic literature and support football coaches develop tactical knowledge of the game.

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## **Chapter 1: Introduction**

### **Introduction to the researcher**

My coaching journey started at the age of 17 while studying A-levels in the sixth form at high school. The Head of Physical Education (PE) asked me if I would be interested in coaching the Year 7 football team. After guiding Tranmere Rovers to the Champions League final in the summer of 1998 on the Champions Manager video game, I felt I had the credentials to take on the role. During the two years, I gained experience coaching the Year 7 and 8 football teams in the winter, and cricket teams in the summer.

After finishing A-Levels in 2000, I went on to become a sports technician at a specialist sports college as, at the time, I felt that university was not for me. I quickly got involved in coaching the school football teams, followed by supporting and covering PE lessons. At first, it was mainly football, but this quickly evolved to delivering a range of sports such as rugby, basketball, badminton and cricket. This led me to acquire several different Level 1 coaching qualifications in football, cricket, basketball and rugby. My passion for coaching continued to grow and, during the summer break of 2001, I enrolled and undertook the Coaching Certificate in Football (FA Level 2).

When I returned in September at the start of term, I was encouraged by several of the teachers in the school to apply for university and study a degree within Coaching or Physical Education to further develop my career. I applied to Liverpool John Moores and was accepted onto the BA (Hons) Coaching Science degree in 2002. During the course, I was able to successfully gain coaching experience at Manchester United, which allowed me to achieve valuable experience working with a wide range of children and adults from across the world and travel to different countries to experience different cultures, alongside continuing to coach football and cricket in the community. During the second year of the course, I completed the Union of European Football Association (UEFA) B Licence (Level 3) and completed the English Cricket Board (ECB) Level 2 certificate in cricket as, at this stage, I did not know if football or cricket would be my specialist field. Within the third year, I

successfully began coaching at Manchester City in the Academy with the under 9's and took charge of LJMU Women's Football first team, guiding them to Division 1A winners.

After graduating with an undergraduate degree at LJMU in 2005, I became a community sports coach back at the college I had left three years earlier while continuing to coach at Manchester City in the academy. After completing the FA Youth Award 12-16, I moved to Wrexham FC to coach in their academy with the under 15's as a part-time position and continued to work at the sports college for a further year.

In September 2007 I acquired my first lecturing role in the Further Education (FE) sector at Myerscough College in Preston as the Programme Leader for BTEC National Diploma Level 3 Football Studies. The job entailed lecturing 18 hours per week, teaching and learning, marking, quality assurance, and module and course management. Furthermore, the role included coaching each day with the elite college team. During coaching sessions, I worked on technical and skill sessions, functions, phases of play, and 11v11.

My thirst for knowledge and self-development continued with further professional development. Whilst lecturing at Myerscough College, I completed the UEFA A Licence in coaching football in 2008, and in 2009 achieved a Post Graduate Certificate in Education (PGCE) through the University of Central Lancashire (UCLAN). I developed my practice further as I applied for Qualified Teaching and Learning Status (QTLS) with the Institute for Learning (IFL) and became the first member of staff at the college to achieve QTLS. This achievement saw me take up the role of mentoring and supporting other staff at the college to achieve QTLS. Having achieved several grade 1 lesson observations, I became a mentor for new staff and became part of the observation team.

During my time at the college, I also became a coach educator for the Football Association (FA) delivering FA Level 1 courses for Liverpool County Football Association. In my third year at the college, I gained my first experience of delivering Higher Education (HE) modules on the foundation degree at Level 4 and Level 5, which led me to pursue a Masters in Sports Coaching at UCLAN. Alongside the lecturing and coaching position, I coached part-time at Blackpool Football

Club for 3 years coaching the under 15's and 16's, and gained valuable experience coaching the youth team. Furthermore, within this time frame, I had two stints in semi-professional football at Leek Town and Warrington Town in which I was assistant manager at step 7 of the football pyramid system.

In 2011, I joined Warrington Collegiate College as the Programme Leader for Extended Diploma in Football Studies. The course was in partnership with Manchester United. I continued to deliver across both FE and HE, delivering on Extended National Diploma, HNC and HND in Sports Science. Alongside this role, I moved to Preston North End Academy to become the Under 11's coach and started to deliver the FA Level 2 as a coach educator. In terms of professional development, I completed a MA in Sports Coaching in August 2013 alongside completing the FA Youth Modules and Youth Award.

In April 2014 I commenced employment at the University Campus of Football Business (UCFB). My current role is Director of Football, overseeing postgraduate coaching programmes across the Etihad and Wembley campuses. My current role includes managing 20 academic staff, writing postgraduate programmes of study, assuring quality and standards, organising timetables, recruitment, working with local authorities, building partnerships with external bodies, managing budgets and lecturing across the football and sports coaching programme. I have been involved in five Quality Assurance Agency for Higher Education (QAA) inspections, most recently taking the lead on the curriculum design and development and two validation events.

During the seven years, I have been a member of a range of sub-committees such as the Academic Board; Teaching and Learning Action Research Group; QAA Review Panel; Exam boards, Validation events, and Academic Standards Committee. The role requires the creation of conditions for effective performance, developing new materials, CPD, and guidance materials. Part of the role requires me to plan and deliver and support staff with CPD and training through workshops. In addition, I mentor staff (new and existing) in teaching and academic practices throughout the academic year giving guidance and support when required. The role further entails working with the

staff at our partner institution, Bucks New University (BNU) and liaising with external examiners to ensure and maintain the quality of teaching and learning, academic processes and documentation.

My previous roles at UCFB have been Programme Leader for the BA (Hons) Sports Business and Coaching degree, and BA (Hons) Football Coaching & Management. Additionally, I have been Assistant Head of School for Sport and Assistant Head of the Etihad campus. The roles undertaken have been varied and provided me with a wider perspective on teaching, learning and quality assurance as they have involved mentoring other academic staff, leading on internal quality provision and writing policies and procedures related to teaching, learning and assessment ensuring that staff adhere to HE standards, the quality code and benchmark statements for assessment. The programme leader roles involved curriculum design, redesign, and re-validation, planning for learning, programmes of study, assessments, trips, observations and additional qualifications as well as module leading across the course and supervising research projects at undergraduate and postgraduate levels.

In terms of Academy football, I stopped in 2016 once I became a UEFA B coach educator on top of delivering levels 1 and 2 due to time commitments of the role. However, I began coaching again at Bolton Wanderers Academy in 2020, and have kept my hand in coaching through the UCFB First Team.

In 2018, I became the head coach of the UCFB Undergraduate Academy. The academy aims to recruit and work with players aged 18-22 who have been released by professional clubs and/or have not been offered or secured a professional contract at other clubs. The academy allows players to study a full-time degree programme alongside full-time training. The academy replicates a professional club environment with UEFA A Licence coaches, strength and conditioning, physiotherapy, performance analysis, and psychology to support players with the transition from professional football into the semi-professional game. The programme partners with several local clubs, which allow the players to play in a semi-professional team, compete in BUCS Division 1A, and play fixtures against professional club academies and under 23 sides. This role also allowed me to work as a coach for a National League North under 21's team and support the players who are not

ready for the transition into men's football. Over the last few years, the academy team has become a working model to support several coaching modules. It offers the students the opportunity to gain first-hand experience observing, analysing and supporting the coaching process.

In addition, I have delivered coach education in Argentina, China and Malaysia for the FA alongside gained experience working with international youth players in Hong Kong, Kuwait, Italy, Denmark, Sweden, Portugal and Bahrain. My industry-focused work as a practitioner across coaching and coach education, alongside my academic delivery, has allowed me to apply theory in practice across several environments and allowed me to share my experiences, knowledge, and the needs of the coaching environment with employers, colleagues and students. I have been and continue to be a student of the game, watching as many games as possible, observing teams' different styles of play, strategies and tactics across different leagues and countries, reading academic journals or books, reading up on coaching sessions and observing coaches at work in different environments, sports and levels of the game from grass-roots to the elite game.

Critical reflection has facilitated personal growth and development by assessing my capabilities and skills against specific criteria or identifying gaps in knowledge. This process has steered me to study further qualifications in the form of a UEFA A Licence, PGCE, MA in Sports Coaching and lead to the current study of a Professional Doctorate. Through studying a Professional Doctorate qualification I aim to enhance and support the development of my professional and craft knowledge, as well as advance my analytical and critical thinking skills to be a more effective practitioner and researcher. The first module of the professional doctorate, professional planning and training in applied sports and exercise science, required critical reflection in the form of a self-audit of one's personal growth and development. Both self-knowledge and self-awareness have been highlighted as two significant factors for personal growth and self-development (Taylor, Werthner, Culver, & Callary, 2015; Whetten & Cameron 2007). The self-audit critically examined personal skills, academic competency and researcher competency against three frameworks.

The first framework assessed personal characteristics, utilising ‘The Behavioural Profile’ report developed by PDA International (2004). This is commonly utilised within the professional practice field and is a recognised method of assessing behavioural characteristics for the selection, management and development of talent. The second framework explored effective academic performance, applying “The UK Professional Standards Framework for teaching and supporting learning in higher education”. The final framework assessed my research skills using Vitae Researcher Development Framework (2010). Vitae is structured in four domains and twelve subdomains, encompassing a range of skills, qualities and techniques.

Through analysing my skills, the reports highlighted two distinct areas requiring self-development and growth which overlapped across the competency frameworks and assessments. Firstly, the Vitae Researcher Development Framework and The UK Professional Standards Framework illustrated the requirement to develop a writing style appropriate for level 8, through the use of appropriate language and applying the correct technical or scientific writing in the thesis. Furthermore, the behavioural profile report highlighted that I often provide more information than is required in an attempt to be complete and accurate (PDA International, 2004).

Moreover, the Vitae researcher development framework and professional standards framework illustrated a lack of evidence-informed approaches carrying out academic research, scholarly activity and the employment of a range of appropriate methods and techniques with confidence. Although I am very active in terms of professional practice, carrying out regular continued professional development in my subject discipline through attending coaching CPD events and coaching conferences, the area requiring the most development is the research and scholarship activity which can inform and develop my professional practice and carry more credibility as an academic. Despite over twenty years of coaching experience across academy football and coach education, from an academic perspective, I lack experience in research and scholarly activity in the research world. For my development as a Higher Education academic, it is important to be able to use

evidence-informed research to support my professional practical background and a significant reason why I decided to carry out the professional doctorate.

A final area of personal development was to explore and critically reflect upon my practice as a coach educator and lecturer in supporting coaches develop their tactical knowledge from both a theoretical and practical perspective.

## **Introduction to the Thesis**

Modern coaching pedagogies have looked to integrate the psychological aspects of the game such as decision making, game understanding and strategic thinking, alongside the technical, tactical and physiological components within training sessions. Consequently, practice design and the type of practices have become a critical factor for a coach when planning coaching sessions (Williams & Hodges, 2005; Light, 2013; Pill, 2016). Several researchers advocate the proposition that variable, random and more game-like approaches result in greater accuracy and consistency of skills as opposed to some of the more traditional methods of deliberate or constant practices, which specifically focus on repetition of the same skill (Williams & Hodges, 2005; Passos, Araújo, Davids & Shuttleworth, 2008; Davids, Williams, Button, & Court, 2001; Christensen, 2009; Renshaw & Moy, 2018; Lee, Magill & Weeks, 1985; Van Rossum, 1990; Araújo & Davids, 2011).

Game-based approaches such as ‘Constraints Led Coaching’ (Passos et al., 2008; Araújo & Davids, 2011), ‘TGFU’ Teaching games for understanding (Bunker & Thorpe, 1982; Mandigo, Butler & Hopper, 2007; Hastie & Curtner-Smith, 2006), ‘Play Practice’ (Lauder & Piltz, 2013), ‘Game Sense’ (Light & Harvey, 2016), Tactical-Decision Learning Model (Gréhaigne, Richard & Griffin, 2005) all support the benefits of the game-based approach to coaching practice, however, there is still some debate across many fields in terms of skill acquisition. Several scholars recognise that variable, random and game realistic practice designs allow players the opportunity to understand the ‘why’ and ‘what’. Furthermore, they suggest that players learn best if they can understand ‘what’ and ‘why’ to do something before they understand ‘how’. These approaches are seen to help develop players’ game

understanding, decision making and strategic knowledge alongside developing their technical ability (Mandigo et al., 2007; Hastie et al., 2006; Araújo et al., 2011; Renshaw et al., 2018; Price, Collins, Stoszkowski & Pill, 2019; 2020).

Consequently, across different organisations, clubs and platforms, coaches are encouraged to consider planning and delivering game-based approaches which offer practice variety. This is achieved by manipulating practice session factors (i.e. space (size of the area), tasks (individual or team challenges), environment and number of players (overloads and underloads), which place constraints on players that replicate the range of variation experienced during game situations. Therefore, a coach would be required to consider a range of interventions to achieve the desired learning outcomes of the session (Williams et al., 2005; Davids et al., 2001; Christensen, 2009; Renshaw et al., 2018; Lee et al., 1985; Van Rossum, 1990; Passos et al., 2008; Araújo et al., 2011; Mandigo et al., 2007; Hastie et al., 2006; Launder et al., 2013; Light et al., 2016; Gréhaigne et al., 2005; FA Learning, 2016). In addition, under the fundamentals of coaching found across all coach education courses in England, the FA advocates that coaches should apply and deliver realistic gamerelated practices in training that offer elements of transition wherever possible (FA learning, 2016).

However, for game-based approaches to be an effective method of practice, it is paramount for coaches to have sufficient tactical knowledge of the game. A coach needs to understand how space, time and organisation impacts the game, as these three factors have been identified as significant challenges posed to both football players and coaches as a dynamical system (Gréhaigne, Bouthier & David, 1997; O'Donoghue, 2008; Garganta, 2009). Football, like other team sport invasion games, is considered a 'dynamical system', due to the many interacting components involved (Araujo, Davids & Shuttleworth, 2008; McGarry & Perl 2004; Gréhaigne et al., 1997; McGarry, Anderson, Wallace, Hughes & Franks 2010). The term 'dynamical system' is used to refer to a system whose behaviours are the result of self-organising properties. Football is described as a 'dynamical system' because it involves two opposing teams competing and directly interacting



against each other, both trying to achieve the same objectives, which is to score goals whilst at the same time preventing the opposition from scoring goals (O'Donoghue, 2008; Garganta, 2009; McGarry & Perl 2004). Therefore, a coach is required to have a comprehensive understanding of the principles of play, and appropriate strategies and tactics to plan team actions that combat the challenges posed by time, space and organisation (Wade, 1967; Gréhaigne et al., 1997; Hewitt, Greenham & Norton, 2016; Fernandez Navarro, Fradua, Zubillaga, Ford & McRobert, 2016).

As a coach educator and a tutor, I observe many coaches who design and deliver good games based practices that are player-centred, however, many of the coaches' lack game understanding and tactical knowledge, meaning at times practices too often become unrealistic. Furthermore, coaches are often not able to adapt, change the constraints or challenges, pose effective questions or offer input to affect the tactical elements of the game.

Since changes to coaching qualifications in 2016, as both a coach educator and an academic lecturer, I have started to observe a significant difference in the tactical knowledge of coaches who have specifically undertaken courses post 2016. This trend has been observed both when delivering on coach education courses (Level 2 and 3) and also across student coaches studying on our undergraduate coaching degree programmes. This is a common trend observed and discussed amongst coach educators alike. A significant amount of coaches appear to be able to discuss the game and apply jargon in conversation which they have heard or picked up from other coaches, read or observed on an array of media platforms. However, many coaches have a significant lack of underlying declarative and procedural knowledge (see literature review for full explanations of these terms) of the different tactical elements of the game and their importance. This, in turn, impacts the application of conditional knowledge in practice (Nash & Collins, 2006; Price et al., 2019; 2020).

To accommodate other important areas such as coaching pedagogies and key sports science elements on the Level 2 courses, less focus has been given to the tactical fundamentals of the game, with the depth and detail of sports-specific technical and tactical knowledge scaled down. Thus, several coach educators argue that the current courses do not contain adequate sport-specific knowledge or spend sufficient time and/or depth focussing on tactical knowledge such as the

principles of play, systems of play, styles of play, strategies and tactics. Therefore, this impacts the tactical knowledge of coaches starting on the Level 3 course.

This, in turn, has had a negative impact on the success rate of the Level 3 course over the last few years. As of June 2019, circa 900 coaches studying Level 3 were still deemed not yet competent and still had not completed the course from the 2017/18 or 2018/19 season (FA Education, 2019). With this, the Level 3 course was suspended until March 2020 to allow coach educators to support coaches to develop their knowledge. Within the local County FA of which I am a Level 3 tutor, as of September 2020, only 60% of learners had completed the course. This success rate was considerably higher than many other county FA's across the country (FA Education, 2019).

Despite the increased interest in exploring what knowledge coaches require and how coaches develop knowledge, from an academic perspective, tactical concepts of sport-specific knowledge are an underexplored area of research that require further investigation. Sport-specific knowledge such as techniques and tactics are deemed as key requirements for coaches, especially at Level 3. Furthermore, for game-based approaches to be an effective method of practice, it is paramount for coaches to enhance their tactical knowledge (Jones, Armour & Potrac, 2003; Cushion, 2011; Stoszkowska & Collins, 2015; Stodter & Cushion, 2017; Trudel, Gilbert & Werthner 2013; Walker, Thomas & Driska, 2018; Williams et al., 2005).

Based on my observations as an educator, practitioner and academic, alongside discussions and opinions of other coach educators, tactical knowledge development is an area of concern. Furthermore, a plethora of terminology used to define tactical knowledge, coupled with limited academic research in the field, and statistics that circa 900 coaches have not completed Level 3 across England due to incompetent levels of tactical knowledge. This is an area of major concern for coaches, coach educators, governing bodies, and academics alike.

Therefore, to support coaches' development tactical knowledge, several areas required further investigation. The first issue was the alignment of the terminology under specific concepts, through the development of a conceptual framework and model. The second issue was the assessment of

football coaches' baseline tactical knowledge at the beginning of a course. The third issue was exploring football coaches' tactical knowledge in their practice setting and assessing changes in tactical knowledge.

Consequently, the thesis aimed to analyse, support, and develop football coaches' tactical knowledge in practice, exploring what, how and when novice/intermediate football coaches develop their tactical knowledge. Furthermore, it aimed to ascertain if a conceptual model and framework could act as a support mechanism to aid the coaches' development of tactical knowledge.

The four definitive objectives of the thesis are as follows:

1. The development of a conceptual framework and model to advance tactical knowledge.
2. The assessment of Level 2 coaches' baseline tactical knowledge at the start of their Level 3 journey.
3. The analysis of coaches' tactical conditional knowledge in practice
4. The use of an intervention strategy to support the development of coaches' tactical knowledge.

## **Chapter 2: Literature Review**

The purpose of the chapter is to explore key concepts from the literature which underpinned the area of investigation. The chapter reviews the different types of knowledge coaches require before focusing on professional sport-specific tactical knowledge. In addition, it will consider how coaches acquire and develop tactical knowledge, alongside how tactical knowledge can be measured from a metacognition and decision-making perspective. Finally, throughout the chapter, the author will identify key gaps and underexplored areas in the literature that require further enquiry which will be explored within the thesis.

From the Premier League down the football pyramid to grass-roots football, coaches play a vital role in the development of players across all ages and genders. A coach will undertake coaching qualifications to develop their knowledge for a multitude of reasons, from being a parent thrown in at the deep end to take their son or daughter's junior team, to a coach who wishes to aspire to be the next Jürgen Klopp or Pep Guardiola. Depending on their preferred destination, a coach starts their educational journey at Level 1 and can progress through the qualification pathway until Level 4 (UEFA A Licence) to advance their knowledge. In addition, coaches may explore academic football coaching programmes with several Higher Education institutions offering undergraduate and postgraduate courses for aspiring coaches.

### **Coaching Knowledge**

Within the field of sports coaching, there is an increased interest in exploring how coaches develop knowledge and what knowledge they learn to cultivate the skills required to deal with the complex, constantly changing, and multi-dimensional milieu (Trudel & Gilbert, 2004; Cushion, 2011; Culver & Trudel, 2006; Gilbert, Gallimore, & Trudel, 2009; Stoszkowskia & Collins, 2015; Stodter & Cushion, 2017; Walker et al., 2018). Nash and Collins (2006) discuss the science of coaching based on the principles of science (i.e., physiology, sociology, cognitive and motor skills) and pedagogy (i.e., interventions and practice design), and describe 'effective coaching' as a combination of the different disciplines. The unconscious or spontaneous coaching interventions are regarded as the art

of coaching and are of interest to both scholars and coach educators alike. Moreover, how coaches access and retrieve knowledge at the appropriate times during training and game situations impacts the decision-making process. Nevertheless, Nash and Collins (2006) suggest that it is vital to explore how a coach develops this knowledge (Jones, Armour & Potrac, 2003; Cushion, 2011; Culver et al., 2006; Gilbert et al., 2009; Trudel et al., 2004; Stoszkowska et al., 2015; Stodter et al., 2017).

Despite the growth in popularity of coaching as an area of interest for academic studies, there is still limited research on how coaches learn and what knowledge they are required to develop (Trudel, Gilbert & Werthner 2013; McCullick, Schempp, Mason, Foo, Vickers & Connolly, 2009; Gilbert, Côté & Mallett, 2006). Enquiry into how coaches gain, learn, and develop knowledge has been focused and disseminated to the academic world through journal articles, rather than circulated to coaches and coach educators through CPD or workshops. This had led to some authors suggesting that research can often be detached from the day-to-day coaching practices. Consequently, for research to have more of an impact upon coaching practice, coaches and coach educators alike, research needs to inform, guide, and help develop both practice and education (Trudel et al., 2006; 2013; Cushion et al., 2010; Abraham & Collins, 2011; Purdy, Potrac & Nelson, 2013; Piggott, 2013; Stodter et al., 2017).

### **Types of Coaching Knowledge**

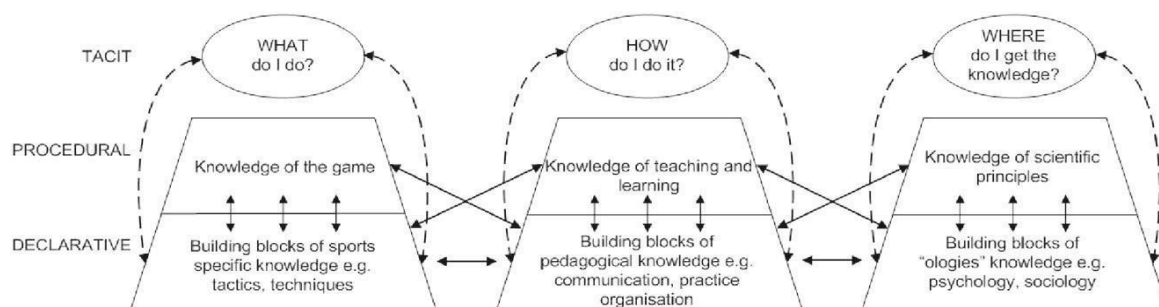
The types of knowledge requirements for coaching have been drawn and adapted from previous research in the area of Physical Education (PE). PE teachers are deemed to require three types of knowledge; instructional, pedagogical, and curricular (Kreber & Cranton, 2000; Ennis, Mueller & Zhu, 1991; Anderson, 1982; Nelson, Cushion, & Potrac, 2006; Nash & Collins, 2006; Côté & Gilbert, 2009; Nelson, Cushion, Potrac & Groom, 2014; Stoszkowski et al., 2016). Similar to PE teachers, it is advocated that coaches would be required to develop these three types of knowledge to become effective practitioners. Moreover, several authors have proposed coaches require knowledge around three main disciplines; sport-specific knowledge such as the techniques and tactics, knowledge of the “ologies” sport science disciplines such as; Physiology, Psychology, Sociology, and

Kinesiology, and finally pedagogical knowledge of the learning approaches (Kreber & Cranton, 1997; Nash & Collins, 2006; Abraham, Collins & Martindale, 2006; Côté & Gilbert, 2009).

Professional sport-specific knowledge is a key requirement for coaches and the main focus of the thesis, however, the author acknowledges that having professional knowledge alone is insufficient to develop and become an effective coach. For coaches to advance, a more holistic approach is required. Interpersonal knowledge is another significant knowledge base to develop. The coaching process involves the interaction with significant others such as players, parents, and other coaches. Therefore, coaches must develop an understanding of the specifics of their coaching domain and environment and understand the complexities of working with different age groups, different ability levels and genders. In addition, coaches are required to have intrapersonal knowledge and a clear understanding of what they do in practice and the skills required to engage in reflective practice to learn from their practice, develop and continue to learn (Gilbert et al., 2004; Nash et al., 2006; Côté & Gilbert, 2009; Cassidy et al., 2009; Nash et al., 2009; Cushion et al., 2009).

The football coaches' role is complex and multifaceted, which includes various components that require coaches to develop an adequate amount of knowledge so that they can; plan coaching sessions, improve both individual and team performance, correct technique, employ the principles of play, strategies, tactics, apply styles of play and systems of play alongside understanding the physiological, psychological and sociological aspects of the sport (Griffey & Housner, 1991; Lyle, 1999; Nash et al., 2006; Wright et al., 2007; MacDonald, & Côté, 2008; Stoszkowskia et al., 2015; Stodter et al., 2017; Walker et al., 2019).

Nash and Collins, (2006) proposed an interaction model of coaching knowledge (figure 2.1, adapted from Kreber & Cranton, 1997). This model illustrates how coaches gain and build knowledge across three components: knowledge of the game, knowledge of teaching and learning, and knowledge of the scientific principles. Furthermore, it highlights how each of the components interacts. Consequently, if coaches develop knowledge in one of the components it can have a significant impact on their knowledge across the other components.



**Figure 2.1.** The interaction model of coaching knowledge (Nash & Collins, 2006).

The model, suggests that coaches acquire declarative knowledge, forming a solid base of knowledge before developing and building procedural knowledge, through applying and reflecting on knowledge in practice through their coaching experiences. Declarative knowledge is defined as understanding “what to do” and developing knowledge around the aims and objectives of the game such as laws, principles, tactics, and techniques. Whereas, procedural knowledge is understanding “how to do it” and the pedagogical processes associated with applying the aims and objectives within a given context (Pintrich, Wolters, & Baxter, 2000; Veenman et al., 2006; Nast et al., 2006; French & Thomas, 1987; Kreber et al., 1997; 2000; Kannekens, Elferink-Gemser & Visscher, 2009; Stodter et al., 2017; Walker et al., 2019).

The final area within the model is tacit knowledge. Many coaches may gain a good level of knowledge within their coaching practice but may never display the higher-order characteristics of a competent practitioner or the skills in practice associated with tacit knowledge. Tacit or craft knowledge is seen as something that emerges from the direct experience of the contextual and complicated multi-dimensional realities of coaching practice (Brown & McIntyre 1986; Nash et al., 2006). Coaches may not reach the tacit knowledge stage but through experience, learning and reflection may develop the knowledge to understand when and why to use the declarative procedural knowledge known as conditional knowledge. Conditional knowledge derives from metacognition research within the classification of knowledge found in the long-term memory and is the third type of knowledge that will be examined further later in the chapter (MacIntyre, Igou, Campbell, Moran,

& Matthews, 2014; Werthner et al., Trudel, 2006; Cushion, Armour & Jones, 2003; Chi, 1997; McPherson & Vickers 2004; McPherson, 1994; McPherson & Kernodle, 2007; Thomas & Thomas, 1994; Price et al., 2019; 2020).

### **Sport-Specific Knowledge**

As discussed above, sport-specific knowledge such as techniques and tactics are a key requirement for coaches, especially at Level 3, and the development of this knowledge is a significant focus of the thesis (Nash & Collins, 2006; Abraham et al., 2006; Côté & Gilbert, 2009). Therefore, this section of the chapter explores the literature upon several concepts which form sport-specific tactical knowledge in football. However, when reviewing the academic literature, it is to be noted that there is a dearth of academic resources and peer-reviewed journals covering the concepts of technical and tactical knowledge. Therefore, the concepts of tactical knowledge are drawn from academic literature, technical reports, the Level 3 coaching syllabus, analysis provider reports, popular contemporary approaches, and commercial texts (i.e., Wade, 1967; Delgado-Bordonau & Villaneva, 2012). Moreover, the design and development of a conceptual model and framework (see chapter 3) were paramount in bringing the concepts together for the thesis (Nash et al., 2006; Price et al., 2019; 2020; Grehaigne, Richard, & Griffin, 2005; Pill, 2014; The FA, 2016; Delgado-Bordonau & Villaneva, 2012).

### *Tactical Periodization*

Several top coaches across Europe such as Jose Mourinho, Pepe Guardiola, Jürgen Klopp, Marcelo Bielsa, Andre Villas-Boas and Carlos Queiroz have started to apply a more methodological and pedagogical approach to their coaching and training methods within football defined as Tactical Periodization (Delgado Bordonau & Villaneva, 2012; 2016; 2018; Frade, 2004; Tee, Ashford & Piggott, 2018). Early research in Tactical Periodization has been shaped by academics across both Portugal and Spain, and in recent times it has become one of the more contemporary methods of training football at the top level of the game. Although evidence on this contemporary approach is limited, it has become of interest to both coaches and academics alike (Martins, 2003; Frade, 2004;



Casarin & Oliveira, 2010; Tamarit, 2015; Delgado Bordonau et al., 2012; Aquino, Cruz Gonçalves, Palucci, Oliveira, Alves, Santiago & Puggina, 2016).

More recently, Tactical Periodization has started to emerge and been adopted in several other sports such as Tennis (Crespo, 2011) and Rugby Union (Robertson & Joyce, 2015; Tee et al., 2018) with England Rugby Union Head Coach, Eddie Jones, becoming an enthusiast of the contemporary method of training, implementing the approach within the current England set-up (Jones, 2017; Tee et al., 2018).

Tactical Periodization has been identified by coaches and some academics as a favourable approach to address the complex process of coaching match play. The key principle around Tactical Periodization theory suggests that the tactical concepts of the game should be the main focus, as every technical and physical action in football has an intended tactical outcome (Garganta & Pinto, 1998; Oliveira, 2004; Frade, 2004; Gaiteiro, 2006; Delgado-Bordonau et al., 2012; 2018; Aquino, 2016; Casarin et al., 2010). The holistic approach to training and match preparation encompasses the idea that tactical, technical, mental, and physical components should not be trained in isolation and should be integrated simultaneously, with every training practice planned and delivered around at least one of the four moments of the game (see figure 2.3 below) (Martins, 2003; Frade, 2004; Gaiteiro, 2006; Delgado-Bordonau et al., 2012, 2018; Tamarit, 2015; Tee, et al., 2018; Garganta et al., 1998; Oliveira, 2004; Aquino, 2016; Casarin et al., 2010; Verheijen, 2014).

### *The Game Model*

An integral part of Tactical Periodization is the development of a Game Model. Each coach is required to develop a Game Model (GM) that is specific to them and based on their tactical knowledge, scientific principles, teaching and learning pedagogy, and their vision of the game (i.e., preferred system of play, style of play, and desired strategies and tactics). The creation of a clear GM or shared mental model allows a coach to operationalise their system and styles of play at the team, unit, and individual levels. Furthermore, it will help reduce player uncertainty in terms of their

roles and responsibilities, consequently improving the team’s tactical cohesion (Martins, 2003; Frade, 2004; Casarin et al., 2010; Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018; Aquino, 2016; Giske et al., 2015; Price et al., 2019; 2020; Richards et al., 2012; 2017). DelgadoBordonau et al., (2012; 2018) highlighted 7 key concepts that require careful consideration for a coach when developing a GM (see figure 2.2). The 7 key concepts of the Game Model are moments of the game; principles, and sub-principles of play, structural organisation, the coach’s ideas; the club’s structure and aims, club and country football culture; and players’ capabilities.



**Figure 2.2.** Factors that influence in designing and building up a Game Model (Delgado-Bordonau et al., 2012; Adapted from Oliveira, G. 2007).

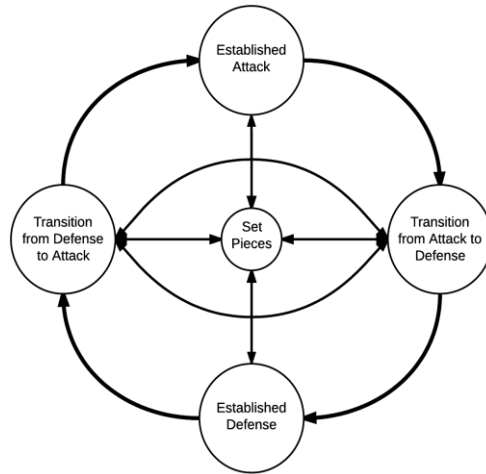
*Moments of the game*

Tactical Periodization theory suggests that all football tactics and strategies should be learned and built around the logical structure of the game, which are defined as ‘The moments of the game’. Frade (2004), Delgado-Bordonau, et al., (2012; 2018), Casarin et al., (2010), and Oliveira (2004; 2014) define four key moments of a game: Offensive Organisation, Defensive Organisation, and Transition from defence to attack, and Transition from attack to defence, see figure 2.3.



**Figure 2.3.** Moments of the Game (Delgado-Bordonau & Mendez-Villanueva, 2012).

The moments of the game are a significant factor when designing a GM. A coach must clearly define their GM, style and system of play, and identify how they want the team to apply themselves in each of the four moments of the game. The key part of Tactical Periodization is the inclusion of at least one moment within every training session (Martins, 2003; Frade, 2004; Gaitero, 2006; DelgadoBordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018). In addition, coach education courses utilise four moments of the game such as in possession, out of possession, exploit the counter-attack (Transition) and defend the counter-attack (Transition) to develop the learners' game knowledge (Bootroom, 2020; FA Education, 2016). Additional research into the moments of the game has highlighted that set plays form a significant part of the game, with circa 30% of goal scoring opportunities created through set plays. Researchers have proposed that the model be updated to include this fifth moment of the game shown in figure 2.4 (Hewitt, Greenham & Norton, 2016; Fernandez-Navarro, Fradua, Zubillaga, Ford & McRobert, 2016; 2018).



**Figure 2.4.** Five moments of play (Hewitt, Greenham & Norton, 2016).

Moreover, retrospective analysis of England’s successful 2018 World Cup campaign as semi-finalists, reported that 75% of England’s goals resulted from set plays, with only 3 out of 12 goals scored from open play. This further highlights the importance of set plays in the modern game for certain teams (FIFA technical report, 2019).

### *Principles of Play in Football*

Within team invasion games such as football, several fundamental principles of play have been identified. Football principles of play are split into three main moments of the game; attacking, defending, and transition. Principles of play are the fundamental components of game understanding and are initially introduced during the Level 1 coaching award, and further developed during each subsequent awards (e.g. Level 2, UEFA B, UEFA A) (Wade; 1967; 1996; Lago-Ballesteros & Lago-Penas, 2010; Tenga & Sigmundstad, 2011; Ward & Griggs, 2011; The Football Association, 2016).

The principles of play were established by Wade (1967), the Director of Coaching for the Football Association, who developed a guide to training and coaching. His principles of play concept included three principle phases of the game: (1) Attacking, (2) Defending, and (3) Preparation or midfield. This approach transformed how coaches and managers around the world viewed the game and have also been applied to other invasion-based sports (Wade, 1967; 1996; Ward et al., 2011).

Wade (1967) developed five key principles of play for both attacking and defending moments of the game; for each attacking principle of play, there was a counteracting defending principle, shown in table 2.1. The principles of play are regarded as the fundamental foundations on which effective attacking and defensive team play is built (Wade, 1967; 1996).

**Table 2.1.** Principles of Play Wade (1967) updated (1996).

Attacking Principles	Defending Principles
Penetration	Delay
Depth (Support)	Depth
Width	Concentration
Mobility	Balance
Improvisation	Control / Restraint

The principle of depth originally sat across both the attacking and defending principles but was later updated and amended to ‘support’ which reflected both height and depth requirements of attacking play (Wade, 1996).

The attacking principles of play are applied when a team is in possession of the ball and are attempting an attack, through gaining territory with the maintenance of possession to create a goalscoring opportunity (Wade, 1967; 1996; Fernandez-Navarro et al., 2016; Ward et al., 2011; Hewitt, Greenham & Norton, 2016). Within coach education programmes, five significant attacking principles of play are taught; Creativity (Improvisation), Support, Movement (Mobility), Create-space and Penetration (Table 2.2).

**Table 2.2.** Principles of Attacking Play (Wade, 1967; 1996; The FA, 2016).

Attacking Principles of Play	Definition
Penetration	The intelligent use of possession, support, and movement to enter scoring areas with accuracy, timing, and often deception. Teams will employ different playing styles, formations, strategies, tactics, and skills to achieve this end.
Support	The ability of a team to provide passing outlets for the player in possession and is the key to team ball retention.
Creating Space	The ability of a team to spread out from side to side and end to end to create as much space as possible in which to pass to others or to travel with the ball.

Movement	The intelligent and calculated movements of players to create opportunities to receive or for others to receive the ball whilst trying to dis-organise the opposition.
Creativity	The individual and combined activity of players to perform unexpected skills that often eliminate opponents at appropriate moments in the game.

Through these attacking principles, coaches require players to position themselves strategically around the pitch to increase the surface area of the pitch by creating and maintaining height, width, and depth. Teams aim to dis-organise and unbalance the opposition in critical areas of the pitch to exploit the space created to produce a goal-scoring opportunity (Wade, 1996; Bangsbo, 2000; Piltz & Launder, 2013; Clemente, 2012; Clemente, Martins, Kalamaras, Wong & Mendes, 2014; Hewitt et al., 2016; Fernandez-Navarro et al., 2016).

In contrast, defensive principles of play are established when a team is without possession of the ball. The defensive principles taught on coach education include; Press, Delay, Cover and Balance, Compactness and Control, and Restraint (Table 2.3) (Wade, 1996; Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016; Clemente et al., 2014; Ward et al., 2011).

**Table 2.3.** Principles of Defending Play (Wade, 1967; 1996; The FA, 2016).

Defending Principles of Play	Definition
Press	The arrangements and activity of players reduce opportunities for the opposition to pass to or run forward and restrict their options through immediate pressure.
Delay	The activity of defenders and defensive structures in reducing time, space, and opportunities for opponents to penetrate the defence and gain entry into goal-scoring positions.
Compactness	The grouping of players and units around the ball and the specific organisation of players between the ball and the goal, reduce goal scoring opportunities.
Balance	The capability of a team to cover significant spaces that may be used by opponents in build-up play, when not engaged in pressing, challenging, marking, covering, or tracking duties
Control / Restraint	The adoption of composure, awareness, and sound judgement, allied with understanding priority responsibility and risk.

Defending teams aim to achieve a balanced defence through an organised structure designed to reduce space and time by restricting the opposition to certain parts of the pitch, ultimately regaining possession. The team out of possession are required to delay the attacking team from moving forward into what are considered dangerous areas of the pitch, while at the same time attempting to take up effective strategic positions. Once the team is in an organised position, the aim is to restrict the attacking team's time on the ball by applying pressure and limiting the attacking team's passing options by increasing the numerical advantage in key parts of the pitch. Once this is achieved, the team will aim to force the attacking team into areas away from goal into less dangerous areas of the pitch to thwart goal-scoring opportunities while attempting to regain possession (Wade, 1996; Bangsbo & Peitersen, 2002; Piltz & Launder, 2013; Clemente et al., 2014; Fernandez-Navarro et al., 2016).

The third phase proposed by Wade (1967) is the preparation or midfield phase; this was subsequently adapted into a transition phase. Transition is the final important principle of play and is defined as how a team alternates from in possession to out of possession and from out of possession to in possession (Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016; Hughes & Lovell, 2018). Table 2.4 highlights the two main principles of transition concepts that include counterattacking and defending the counter-attack.

**Table 2.4.** Transition Principles of play (adapted from Wade, 1996 & The FA, 2016).

Transition Principles of Play	Definition
Counter Attack	The ability of a team to regain the ball and attack the opposition quickly utilising the spaces and players available with quick forward passing, running, with early and quick support to create goal-scoring opportunities.
Defending the Counter Attack	During all aspects of the in-possession strategies, defensive security should be considered. Awareness of defensive security ensures the team remains organised at all times and can react effectively when the ball is lost. All players contribute to ensuring defensive security, in particular the goalkeeper through effective positioning, organisation, and communication.

In the transition from attack to defence, a team is often disorganised and is attempting to regain a balanced, defensive structure through effective recovery runs, while at the same time trying to delay the attack by restricting the opposition's time and space. During the transition from defence to attack, a team is attempting to exploit the opposition's disorganised state through quick forward play to exploit the space, which has been exposed by the opposition (Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016; Hughes & Lovell, 2018; Malta & Travassos, 2014; Almeida, Ferreira & Volossovitch, 2014).

The principles of play are subsequently broken down into the four moments of the game. Each of the four moments of the game is broken into principles, sub-principles, and sub-subprinciples to reduce the complexity for both coaches and players. The sub-principles are the specific details for each moment of the game; they allow the coach to operationalise their GM by working with players at team, unit, and individual levels to develop their understanding in each moment (Mallo, 2015; Oliveria, 2014; Martins, 2003; Frade, 2004; Gaitero, 2006; Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015).

For players to perform the most appropriate tactical action at the right moment in a constantly changing environment, the coach is attempting to simulate potential constraints to develop players' knowledge that subsequently improve their actions, anticipation and decision-making skills (Price et al., 2019; 2020). Every training session is designed around the coach's GM and specific tactical moment of the game. Through the repetition of the principles and sub-principles of a specific moment of the game, players understand the desired behaviours and transform tactical training patterns into match play (Haggard & Libet, 2001; McCrone, 2002; Oliveira, 2003; Martins, 2003; Frade, 2004; Delgado-Bordonau et al., 2012; Tamarit, 2015).

### *Strategies & Tactics*

Instead of the sub-principles of play, strategies and tactics are considered more appropriate concepts to consider and are applied by coaches across coach education and professional game. Strategies and tactics are two very important aspects of team play that are often misconceived terms



within football. A strategy can be described as the plan of action that achieves an overall outcome or approach to a game, whereas tactics are the means to achieve the overall aim or outcome (Gréhaigne & Godbout, 1995; Gréhaigne, Godbout, & Bouthier, 1999; Bouthier, 1988; Yiannakos & Armatas, 2006; Carling et al., 2007; Price et al., 2020).

Space, time and organisation have been highlighted as challenges posed by invasion games such as football (Gréhaigne, Bouthier, David, 1997; O'Donoghue, 2008; Garganta, 2009). Strategies and tactics assist coaches to devise a plan of action to combat the challenges presented by dynamical systems (Gréhaigne et al., 1997). The concept of 'dynamical system' is used to describe a system whose actions are the cause of self-organising properties (McGarry & Perl 2004). Football is characterised as a dynamical system as it involves two opposing teams challenging and directly interacting against each other, both trying to achieve the same objectives, which is to score goals whilst at the same time preventing the opposition from scoring, to win the game (O'Donoghue, 2008; Garganta, 2009).

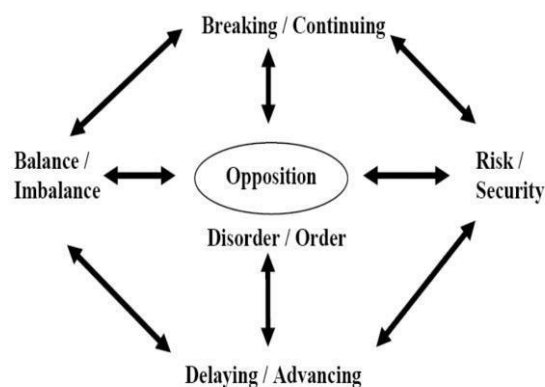
To model a dynamic system like football, a coach is required to map out all the moments of the game, input and output actions, and behaviours alongside how the components interact (Garganta 2009). Dynamical systems theory has been used to describe the interaction between two teams and how perturbations within games change the rhythmic flow of attacking, transition and defending (Gréhaigne et al., 1997; McGarry, Anderson, Wallace, Hughes, & Franks, 2002). Dynamical systems such as football cannot be exclusively predicted using static description tools as there are too many game variables that can have a significant impact upon the outcome of the game, such as an early goal, refereeing decision, player injury, a player sent off, home advantage, the score line, time left in the game, the weather or the type of match (Gréhaigne et al., 1997; Garganta, 2009).

Strategies and tactics employed by coaches before and during games have a significant impact on a team's performance and subsequently can influence the outcome of the game. The predetermined strategies and tactics impact how the whole team, primary units, secondary units and individual players all interact to form tactical decisions (Yiannakos et al., 2006; Carling et al., 2007;

Hewitt et al., 2016; Tamarit, 2015; Delgado-Bordonau et al., 2012; Fernandez-Navarro et al., 2016; Rein & Memmert, 2016; Price et al., 2020).

The team’s strategy and specific playing styles inform the team’s functional organisation, often described as either formation or system of play and will be built around the principles of play. Tactics are the instructions provided by coaches to influence their team’s strategy and playing style. How coaches employ tactics will determine how the individual players, units and team manage the factors of space and time (Fernandez-Navarro et al., 2016; Garganta, 2009; Grehaigne et al., 1995; Grehaigne et al., 1997; Rein & Memmert, 2016; Price et al., 2020). The specific tactics employed by coaches during games can be described as voluntary actions to be executed when a team is either in or out of possession or transition, however, these actions are significantly influenced by the quality of opposition, home advantage, score line, time left in the game, and/or numerical advantage. Coaches often change or amend tactics during a game to exploit a specific situation or cause a perturbation to gain an advantage (Garganta, 2009; Grehaigne et al., 1995; 1997; Rein & Memmert, 2016; Price et al., 2020).

A perturbation is a term used in dynamical systems to define how a coach can change the rhythmic flow of the game by disrupting the behaviour. A perturbation can be described as any incident that consequently changes the expected balance of a game in terms of attacking, defending and transition (Hughes, Dawkins, David, Mills, 1998; Garganta, 2010; O’Donoghue 2009). Figure 2.5 highlights the role of opposition in the dynamics of sports games.



**Figure 2.5.** The role of opposition in the dynamics of sports games (adapted from Grehaigne *et al.*,

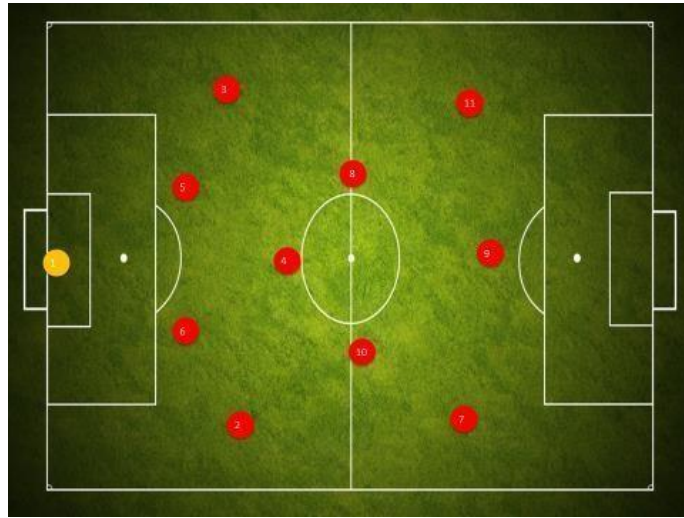
1997: In O' Donoghue 2009).

In addition, it demonstrates how coaches could change or make an impact on game dynamics depending upon the score line and time remaining. The attacking team can be described as the actors trying to destabilise the opposition by applying the attacking principles of play to create an imbalance in opposition defence and exploit opportunities. In contrast, the defending team can be described as the reactors trying to re-stabilise the current state of the game through the application of the defending principles (Hughes et al., 2010; McGarry et al., 2002; Gréhaigne et al., 1997). Coaches apply knowledge and experience to identify trends, match consistencies and/or in-game strengths and weaknesses of the opposition to help to minimise random features of gameplay or exploit opportunities. Through the application of appropriate strategies and tactics, they cause or stop perturbations, with attacking players more likely to cause a perturbation. Moreover, the coaches desired tactics play a vital role in informing team, subsidiary units and individual player tactical decision-making before and during games, and impact upon the game behaviours and outcomes that create perturbations (Gréhaigne et al., 1997; McGarry et al., 2002; Garganta, 2009; Price et al., 2019; 2020; Lames & Hansen, 2001; Hughes et al., 1998).

#### *Structural Organisation (Systems of play)*

The terms structural organisation, formation or system of play refers to the spatial arrangement of the team's individual players on the pitch. Positions are split into three tactical groupings or subsidiary units such as defenders, midfielders, and attackers (Müller-Budack, Theiner, Rein & Ewerth, 2019; Wilson, 2010; Bialkowski, Lucey, Carr, Matthews, Sridharan & Fookes, 2016; FA Education, 2017; Memmert, Raabe, Schwab & Rein 2019). The different combinations of players in these set roles describe the different formations and are traditional methods of characterising the teams' organisation. Several common formations employed within the Premier League during the 2019 and 2020 season include 1-4-4-2; 1-4-2-3-1; 1-3-5-2, and 1-4-3-3. For example, 1-4-3-3 includes, in principle, a goalkeeper, defending unit of four, a midfield unit of three, and an attacking unit of three

(shown in Figure 2.6). The static role representation demonstrates a team's aspirations to play a more attacking or defensive strategy.



**Figure 2.6.** Example of a 1-4-3-3 System of Play.

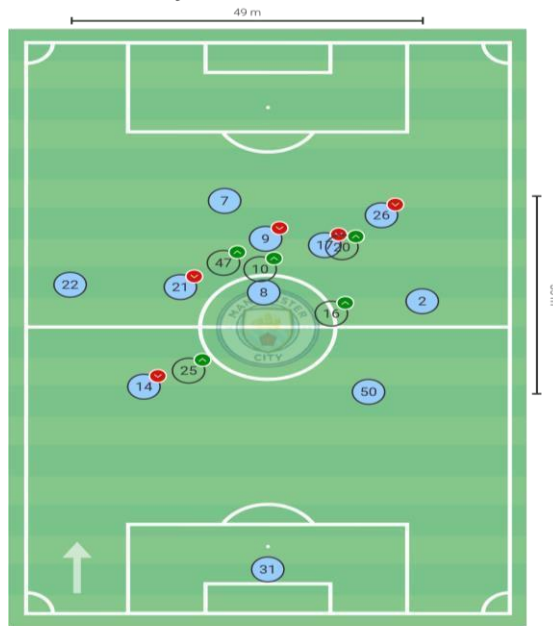
Individual player positions, roles, and responsibilities are influenced by the coach's interpretation, knowledge of the game, and style of play, and how they impact their tactics, strategies, and behaviours when attacking and defending. The static notation or numerical schemes describing a team's formation such as 1-4-3-3 and 1-4-4-2 is a convenient approach to generalise the organisation of the tactical grouping of players, however, this approach is too simplistic and does not reflect the dynamical nature of football, with players constantly interchanging and switching roles based on the player and ball location (Müller-Budack et al., 2019; Bialkowski et al., 2016; Wilson, 2010; Bangsbo & Peitersen, 2000; Memmert et al., 2019).

Moreover, scholars have recognised the approaches to formation classification assume stable formations for the duration of a game. The generalisation of formations does not account for changes in player roles and responsibilities during different moments of the game. The term 'system of play' rather than formation is a more appropriate term, as it takes into account the dynamical nature of the team's movement in and out of possession. For example, when discussing Barcelona's identity and system of play, it is identified from a static notion as 1-4-3-3, which would be their preferred system in possession of the ball. However, out of possession, Barcelona drop into a 1-4-4-2 or a 1-2-4-4

system depending on from which area of the pitch they are attempting to regain ball possession (Lucey, Bialkowski, Carr, Morgan, Matthews & Sheikh, 2013; Machado, Leite, Moura, Cunha, Sadlo & Comba, 2017; Müller-Budack et al., 2019; Bialkowski et al., 2016; Memmert et al., 2019).

Recent research has attempted to explore systems of play and detect system changes when teams are in or out of possession. Studies presented several analytical tools that identify in-game variations and distinguish between in and out of possession formations (Bialkowski et al., 2016; Wu, Xie, Wang, Deng, Liang, Zhang, Cheng & Chen, 2019; Machado et al., 2017; Müller-Budack et al., 2019; Memmert et al., 2019). Current analytical providers have started using tracking data, such as GPS, to cluster a team's overall positions within games, with several reports highlighting a team's overall average positions in and out of possession. For example, when analysing Pep Guardiola's system of play at Manchester City, although characterised as playing a 1-4-3-3, in possession the system changes to a 1-2-3-2-3, 1-3-2-2-3, or a 1-2-2-4-2 depending on the players on the pitch. This approach appears to be a modern interpretation of the WM or MW Metodo devised by Pozzo, the coach of Italy in the 1930s, which he adapted from the Danubian system, which was based on the 12-3-5 formation (Wilson, 2010; Memmert et al., 2019; Delgado-Bordonau, & Mendez-Villanueva, 2016; 2019).

Exploring the Wyscout match report of Manchester City Vs Arsenal on 17<sup>th</sup> June 2020, the first game back for both teams since the outbreak of Covid-19 highlights Manchester City's average team position as 2-4-2-2 or, if sticking to three units, a 2-4-4 (Figure 2.7).



**Figure 2.7.** Match report Average positions – Manchester City Vs Arsenal (Wyscout Match Report, 17/06/2020).

However, when presenting Manchester City’s system of play at different time frames in Figure 2.8, they present a static spatial 4-3-3 system.



**Figure 2.8.** Match Report – Spatial positions reported Manchester City Vs Arsenal (17/06/2020).

For a coach to develop a greater understanding and application of systems, it would be beneficial if match analysis reports included in-game variations and distinguish between in possession and out of possession systems to provide coaches information on how systems change in different moments and phases of the game (Bialkowski et al., 2016; Wu et al., 2019; Machado et al., 2017; Müller-Budack et al., 2019; Memmert et al., 2019).

### *Coach's ideas*

The coaches' ideas form an integral part in designing a GM as it relates to how a coach views the game and wants their team to play. A coach's beliefs, principles of play and preferred styles and systems of play will impact their GM (Martins, 2003; Frade, 2004; Gaitero, 2006; Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018).

### *Styles of Play*

A style of play can be referred to as the overall behaviour of the whole team to achieve the teams' objectives during the game when attacking or defending (Fernandez-Navarro et al., 2016). Although styles of play are considered within the coach's ideas section by Delgado-Bordonau et al., (2012; 2018), styles of play require further attention for a coach when developing their tactical knowledge. Teams employ specific tactical behaviours that inform the teams' in and out of possession strategies, with teams tending to utilise a specific style of play when attacking and another when defending. The style of play imposed on the teams' behaviours will be influenced by the coach and their coaching ideas (Pollard, Reep, & Hartley, 1988; Pollard & Reep, 1997; Hewitt et al., 2016; Fernandez-Navarro et al., 2018; Nelson et al., Collins, 2006; Carless & Douglas, 2011).

Current literature portrays several attacking and defending styles of play. Attacking playing styles include playing out from the back, build-up play, playing through the thirds, playing direct, possession-based, maintenance, total football, Tika-Taka, playing in wide areas (crossing), counterattacking, fast tempo, sustained threat, retaining the ball to build the play, progress and

penetration. In contrast, examples of defending playing styles include high press, mid press, low press defending deep and forcing play, counter-pressing and low block. However, several of the defensive styles are dependent upon the area of the pitch to which a team chooses to apply defensive pressure (i.e., a lowblock would be in the defensive third). In addition, as possession may be lost or gained at any stage of the attack or defence, some authors have suggested transition as a third style of play with counterattacking and counter-pressing highlighted as two styles that could fall under this classification, however, further investigation is required (Bate, 1988; Garganta, Maia, & Basto, 1997; Hughes & Franks, 2005a; Olsen & Larsen, 1997; Redwood-Brown, 2008; Ruiz-Ruiz et al., 2013; Travassos, Davids, Araujo, & Esteves, 2013; Bangsbo & Peitersen, 2000; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; 2018; The FA, 2016; Duarte, Araujo, Correia, & Davids, 2012; James, Mellalieu, & Hollely, 2002; Lago-Peñas, Lago-Ballesteros, & Rey, 2011; Tenga, Holme, Ronglan, & Bahr, 2010a; 2010b; Tenga & Sigmundstad, 2011).

A criticism of the literature is the misinterpretation of some concepts, a lack of clear definitions and conflicting assumptions across studies and definitions. Furthermore, coaches need to be aware of how styles may need to be flexible in their approach across all levels of the game. There are too many variables and degrees of freedom in football to suggest a definitive style of play will guarantee success. However, research suggests that to increase the chance of success, an effective style of play employed by a coach enhances the player characteristics and strengths, and one which considers the opposition's game approach (Reep & Benjamin, 1968; Tenga & Larsen 2003; Hughes & Franks, 2005a; Lago, 2009; Fernandez-Navarro et al., 2018; Prince et al., 2020). Although a coach may have a preferred style of play in and out of possession, they might also need to consider several other game variables, such as player capabilities, home advantage, winning vs development (domain), the type of match, score line, time left in the game, a player sent off, player injury, weather or pitch condition (Gréhaigne et al., 1997; Garganta, 2009).



### *Player capabilities and characteristics*

Another key aspect of the GM for a coach to consider is the player capabilities, identifying individual players' strengths, physical characteristics, technical ability, and game understanding. This informs decisions on the style and system of play that suits all players and enhances the chance of achieving desired outcomes. Likewise, the recruitment of players with the desired characteristics that suit the coaches' style of play needs to be carefully considered (Martins, 2003; Frade, 2004; Delgado Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018).

The technical and tactical skills form an important aspect of the game with effective execution of ball control, passing, dribbling, shooting, and heading skills deemed critical for successful performance in football. These technical and tactical skills are fundamental to certain styles of play, for example, a possession-based approach would require players to have good ball control and passing execution for a team to maintain sustained periods of possession required to break down the opposition. More specifically, in terms of positional characteristics, a coach may want a centre back who is physically strong and has other physical attributes such as power and speed to defend, while also being technically good on the ball to play out. Conversely, other coaches might favour players with other technical characteristics, such as good dribbling skills as this may be more appropriate for their preferred style of play (Bangsbo, 1994; Reilly, Bangsbo, & Franks, 2000a; Rienzi et al., 2000; Reilly, 2001; Christensen, 2009; Ericsson et al., 1993; Rienzi, Drust, Reilly, Carter, & Martin, 2000; Reilly, Williams, Nevill, & Franks, 2000b).

In addition, a coach may prefer players with physiological characteristics such as advanced aerobic or anaerobic capabilities to meet the high intensity or intermittent demands that a player would require in a high-pressing style of play. Likewise, they may want a player who can run boxto box such as a central midfielder or winger in a more direct or counter-attacking approach (Hoff, 2005; Mohr, Krstrup, & Bangsbo, 2005; Lawrence, 2010; Christenson, 2009; Bangsbo, 1994; Reilly et al., 2000a; Rienzi et al., 2000; Reilly et al., 2000b; Baptista, Travassos, Gonçalves, Mourão, Viana, & Sampaio, 2018).

### *Club and Country football culture*

The final two factors within Delgado-Bordonau et al., (2012) GM do not fall under the tactical knowledge concepts, however, both have a significant impact on the tactical concepts in practice for a coach to consider. The Club and Country football culture, which refers to expected approaches and trends in a specific league and/or team. Different countries have cultural aspects associated with football that impact how teams approach the game. For example, in general, Spanish football is based upon maintaining possession with slower build-up play, while Italian football is generally based on strong defensive organisation. English football can be seen as a more direct, hardworking, and end-to-end approach (Wilson, 2010). However, not all teams within a league may have the same approach or fit the cultural views and employ a common approach. For example, under Pep Guardiola (Manchester City FC) the cultural approach is based around a slower build-up play and maintaining possession, which reflects the Spanish approach. The approach leads to a style of play based upon a possession style, which attempts to dominate in-game possession. This approach has become a common trend across several football clubs within the Premier League and English Football League (EFL) over the last few seasons, as opposed to the more direct style of play associated with English football in previous decades.

The possession-based approach is mirrored by the Football Association and has become the National teams' identity across all the England teams (Male, Female, and Youth) under the England 'DNA', which is attempting to create a common culture. Their aim is "to dominate possession intelligently, selecting the right moments to progress the play and penetrate the opposition" (Bootroom, 2017; Martins, 2003; Frade, 2004; Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018; Aquino, 2016).

### *Club structure & aim*

The final factor for a coach to consider is the club structure, overall aim and season objectives such as winning the league, finishing mid-table, avoiding relegation, playing an attractive style of football, and/or developing youth players. In addition to the coach's ideas, their values and beliefs have a significant impact on the club's cultural aims so that they can achieve their desired objectives.

A coach needs to be aware of the club's culture and identity when designing their GM or explore which clubs align with their approach and how they view the game. A further consideration for both the coach and club is whether or not a coach's GM suits or aligns with the club's aims and objectives, alongside the current players at the club (Martins, 2003; Frade, 2004; Gaiteiro, 2006; Delgado Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018).

### **How Coaches Acquire Knowledge?**

A considerable number of coach learning studies come from a "social constructivist" perspective, whereby coaches are deemed to construct knowledge through both formal and nonformal learning platforms. Furthermore, coaches develop their knowledge through a vast range of different forms of learning and experiences (Vosniadou & Kollias, 2003; Trudel et al., 2004; Nash et al., 2006; Cushion, 2011; Gilbert, et al., 2009; Stoszkowskia et al., 2015). Although there is limited research providing critical insight into the how, what, when and why coaches learn, several studies suggest that coaches develop skills and knowledge through a multifaceted combination of their different experiences (Piggott, 2013; Werthner & Trudel, 2009). The main sources of learning identified have been: first-hand practical playing and coaching experience, coach education courses, peer interaction, working with more experienced coaches, mentoring, and, more recently, social media (Trudel et al., 2004; Culver et al., 2006; Deek, Werthner, Paquette & Culver, 2013; LaraBercial & Mallett, 2016; Sjøvik, Tjomsland, Larsen, Samdal & Wold, 2017; Stodter et al., 2017; Walker et al., 2018).

The Football Association (FA) delivers coach education programmes across four levels and are considered key to the enhancement and development of coach knowledge. In 2016 The FA relaunched the Level 1 and 2 coaching courses after a strategic review, and in 2017 The FA launched the new Level 3 in coaching football (FA Education, 2017). The course allows learners to build on previous knowledge with a specific focus on the player, the team, and coach development (McCallum, 2017; FA Level 3 in Coaching Football, 2016). The course includes nine days of face-to-face theoretical and practical workshops delivered over nine months as four distinct blocks of learning. The course is built around the England DNA; How We Play, The Future Player, How We Coach, and How We Support (FA Education, 2016). The Level 3 course also includes three support visits from

the tutors between the blocks so that the coach's development can be observed and developed in their environment.

The FA designed the new coaching pathway based upon a constructivist approach that places coaches at the centre of the learning process rather than indoctrination-style, whereby coach educators pass on their coaching knowledge and deliver a standardised way of coaching. This approach was seen as prescribing 'the right way to coach' which equips candidates with the skills to pass the course and to satisfy the coaching competency criteria set by the governing body (Cushion & Nelson, 2013; Abraham & Collins, 1998; Entwistle & Peterson, 2004). Coaches construct knowledge and meaning from their experiences and relate them to their coaching context as research suggests that the development of knowledge is more effectively achieved when learners engage and are involved in the learning process. The course aims to refine and develop coaching practice, through supporting coaches to understand the importance of effective planning and session design, alongside reflective practice to meet the holistic needs of their players (Light & Wallian, 2008; Light & Evans, 2010; Chapman, Richardson, Cope & Cronin, 2019).

Sport-specific knowledge (i.e., tactical, technical) and decision making have been identified as fundamental elements of dynamic team sports such as football and form a key part of the course content. Research suggests that coaches require a skill set that allows them to make instructive choices and tactical decisions in dynamically changing situations (Gréhaigne et al, 1999; Nash & Collins, 2006; Kaya, 2014; Horrocks et al., 2016). Although there is limited evidence to support how coaches develop tactical awareness, game understanding, and decision-making skills, several studies advocate that coaches develop knowledge and coaching skill through their own authentic coaching experiences (Kaya, 2014; Gilbert et al., 2004; Côté, 2006; Nash et al., 2006; Vergeer & Lyle, 2009). Moreover, once a coach completes a block of learning on the coaching course, their main source of knowledge within this period of development depends mostly on their own experience alongside observing and working with other coaches. Therefore, what coaches learn from coaching courses appears to be individualised to each coach, with each taking away different aspects of knowledge

from a course to add to their practice. Hence, the best way to understand what and how coaches learn is to observe and monitor coaches in their natural environment over a sustained period (Vosniadou & Kollias, 2003; Nash et al., 2006; Cushion, 2011; Gilbert et al., 2009; Stoszkowska et al., 2015; Walker et al., 2018; Wright, Trudel & Culver, 2007; Stodter et al., 2017; 2020; Trudel, et al., 2010; Piggott, 2013; Cushion et al., 2013).

### *Metacognition*

Metacognition is the understanding of cognition and the controlling of cognition (Flavell, 1979; Ozturk, 2017). It is the awareness and understanding of one's knowledge and the ability to control and understand one's cognitive thought processes (Flavell, 1979; Ozturk, 2017; Michalsky, Mevarech, & Haibi, 2009; Veenman, Bavelaar, De Wolf & Van Haaren, 2014; McPherson, 1994; 2000; MacIntyre et al., 2014; Chi, 1997; McPherson & Vickers 2004; McPherson, 1994; McPherson & Kernodle, 2007; Price et al., 2019; 2020; French & McPherson, 2004).

To understand the concept of metacognition, it is important to understand the three knowledge components of declarative, procedural, and conditional knowledge. Declarative knowledge is an individual's awareness of what to do and affects their cognitions which includes a task, strategy, variables, or people. Within a football context, this knowledge would include the laws of the game, technical action, and executions, and players' playing capabilities, for example, understanding what the attacking principles of play are (Veenman et al., 2006; 2014; Nash et al., 2006; Price et al., 2019; 2020; McPherson et al., 2004; 2007; McPherson, 1994).

Procedural knowledge relates to the steps that need to be performed to select the most appropriate skill or tactical action to the different skills or strategies applied within a given context. Within football, the tactical awareness would be to select the most appropriate tactical action to a particular moment in the game, for example, the strategies and tactics of how the team in possession will apply the attacking principles when playing out from the back. A coach would also need to take into account several game considerations such as players' capabilities, team units, both own team and

opposition position on the pitch, and state of the game (time remaining, score line, weather conditions) (Veenman et al., 2006; Pintrich et al., 2000; Pressley et al., 1987; Nast et al., 2006; McPherson et al., 2004; 2007; McPherson, 1994).

The final component, conditional knowledge is knowing when, why, where, and how to apply declarative and procedural knowledge in practice. Within coaching, this would be an awareness of knowing when, where, why, and how to apply different strategies and tactics in action. In addition, it involves being able to provide players with the knowledge to apply the most appropriate strategies and tactics at the correct moment, such as when to play out short or when to play a more direct approach. This will be governed by the several game considerations discussed above (MacIntyre et al., 2014; Werthner et al., 2006; Cushion et al., 2003; Thomas et al., 1994; Price et al., 2019; 2020; McPherson et al., 2004; 2007; McPherson, 1994).

Another fundamental aspect of metacognition is the regulation of cognition known as thinking about thinking. This includes three interlinked stages that impact the cognition process: planning, monitoring, and evaluation (Ozturk, 2016; Schraw, 1998; Flavell, 1979; Veenman et al., 2006; 2014; McPherson, 1994; 2000; McPherson et al., 2004; 2007). Planning refers to the set outcomes or goals of a particular match such as playing style, strategies, and tactics that guide cognitions. Monitoring involves assessing performance-in-action while mapping cognitions and actions to match outcomes and goals such as strategies and tactics to match demands (Pintrich et al., 2000; Ozturk, 2016).

Coaches need to monitor both their own and players' progress during the game, as the game will present uncertain situations where a player may have certain limitations of when and how to apply their knowledge. This is often when both the coach and player are faced with an unknown circumstance, therefore they will need to make in-action adjustments to the pre-planned strategy and tactics (Weinstein & Van Mater Stone, 1993; Price et al., 2019). Finally, evaluation refers to appraising how a situation was dealt with and what impact the action had on the situation with the outcomes of the game and the efficiency of an individual's learnings (Ozturk, 2016; Schraw, 1998).

However, there is a lack of empirical evidence in team sports supporting the application of metacognition as an approach to aid players and coaches alike to develop their strategic understanding of gameplay (McPherson et al., 2004; 2007; Dail, 2014; MacIntyre et al., 2014). The field is still a very much underexplored area of research within the coaching literature in comparison to the extensive research in the field of cognitive skills with areas such as problem-solving and decision making receiving more attention (Price et al., 2019; 2020; Kinnerk, Harvey, MacDonncha & Lyons, 2018; O'Connor, Wardack, Goodyear, Larkin, & Williams, 2018; O'Connor, Larkin, & Williams, 2018).

Price et al., (2019) used digital video games to aid player thinking and encourage them to act strategically, advocating that players' learning capabilities may be enhanced through metacognition approaches. Moreover, Price et al., (2020) explored football academy coaches' interpretations of game understanding and how coaches shared their GM or shared mental model with players to develop players' strategic understanding through metacognition coaching methods (Giske, Rodahl, & Høigaard, 2015; Price et al., 2020; Richards, Collins & Mascarenhas, 2012; 2017; Tee et al., 2018; Aquino, 2016). They highlighted that coaches struggled to acknowledge the importance of conditional knowledge bases in players' game understanding which demonstrates players' understanding of how and when to combine declarative knowledge (laws of the game, technical executions, playing capabilities) and procedural knowledge (tactical awareness to select the most appropriate action to a moment in the game). Therefore, coaches must develop conditional knowledge of the game and understand how and when to apply declarative and procedural knowledge. This will, in turn, allow players to enhance their understanding of the gameplay through applying metacognition (Price et al., 2019; 2020; 2015; Aquino, 2016; Giske et al., 2015; Tee, Ashford & Piggott, 2018).

The three studies in this thesis examined the coaches' declarative, procedural and conditional tactical knowledge at different stages of a Level 3 qualification. Study 1 (Chapter 5) explored a group of football coaches' tactical declarative and procedural knowledge, while Study 2 (Chapter 6) explored football coaches' declarative, procedural, and conditional tactical knowledge in practice,

through participant observation. The final study (Chapter 7) examined if a conceptual framework and GM could be applied as a support mechanism to develop coaches' conditional tactical knowledge in practice.

### **Measuring Tactical Knowledge in Practice**

Coaches' lack of tactical knowledge will impact their decision-making ability to any given moment of practice or game situation and be one approach to measuring coaching knowledge. The decision-making knowledge paradigm was first presented through human cognitive processes before being adapted to measure the expertise in sport. Within cognitive psychology, decision making is developed and carried out through knowledge structures built and stored within the human memory (Anderson, 1982; Chi & Rees, 1983; French & Thomas, 1987; McPherson & Thomas, 1989).

The coaches' development and/or lack of knowledge will impact their ability to make the correct or incorrect decision within any given moment of practice or game situation. This could result in a haphazard decision-making process due to the coaches' inability to identify relevant cues (Kaya, 2014; Horrocks et al., 2016). A less experienced coach may make abrupt or inconsistent decisions in practice because of their inability to identify relevant cues. Therefore, they are unable to see the whole picture (i.e., players' positions away from the ball) which could be due to the lack of procedural and conditional knowledge (Kaya, 2014). In contrast, experts' sophisticated knowledge structures allow them to know how and when to apply this knowledge in a wide variety of situations (Singer & Janelle, 1999; Thomas & Thomas, 1994; Vergeer & Lyle, 2009; Kaya, 2014; Price et al., 2019; 2020; Lenoir, Philippaerts & Williams, 2007; Nash et al., 2006; Wright et al., 2007; MacDonald et al., Côté, 2008; Stoszkowska et al., 2015).

Decision making is a significant attribute that may define expert or advanced coaching skills, however, a coach's decisions are often evaluated based on the outcome of the decision rather than on the intention of their choice (Kaya, 2014). Experienced coaches with developed conditional knowledge can provide information at the correct time and focus on critical aspects of performance and skill acquisition. Despite the growing recognition of the importance of decision making in the



complex process of coaching, there is still a limited amount of literature around the topic (Abraham et al., 2006; Vergeer et al., 2009; Kaya, 2014; Price et al., 2019; 2020). The vast majority of research in the field has explored the novice vs expert paradigm with little focus on intermediate level coaches and how they can develop their knowledge from novice to intermediate and then to expert (Galanter & Patel, 2005; Lyle, 2005; Vergeer & Lyle, 2009; Kaya, 2014). Some studies have explored how coaches develop knowledge and what knowledge is required to aid the decision-making process that leads to correct decisions at the appropriate time. The development of extensive tactical knowledge is considered to be a significant characteristic for coaches on their journey from novice to elite (Nash et al., 2006; Wright et al., 2007; MacDonald, & Côté, 2008; Stoszkowska et al., 2015; Stodter et al., 2017).

Assessing coaches' knowledge on coach education courses has been and still is a challenge for coach educators. Pre 2016 courses required a coach to demonstrate specific knowledge, behaviour, and skills against set criteria. As the coach educator observed the session, they would tick off each set criteria once the coach had demonstrated the competency. At the end of the session, a coach would be deemed competent if they had ticked off each specific criteria on the checklist. The one-off isolated coaching session at the end of the course deemed whether or not the coach either passed or failed the course, and did not recognise or consider the change and application of new knowledge learned throughout the course (Cushion, et al., 2003; Cassidy, Jones & Potrac, 2004; Chesterfield et al., 2010; Chapman et al., 2019; Griffiths et al., 2016; Coldwell & Simkins, 2011; Stodter et al., 2017; Partington et al., 2013; Cushion, Ford & Williams, 2012). However, the new course approach allows coaches to demonstrate their knowledge at three different checkpoints throughout the course during the in-situ visits (Chapman et al., 2019; McCallum, 2017; FA Level 3 in Coaching Football, 2016).

To acquire a true reflection of how learning takes place and measure knowledge in formal coach education situations, research needs to consider a multi-dimensional approach and apply several methods to supplement data collection. More recent studies have applied a mixed-methods approach using participant observation, video analysis and field notes to capture coaches in their natural setting

to ascertain and measure coaches' knowledge development (Stodter et al., 2017; 2020; Chesterfield et al., 2010; Piggott, 2012; Vella, Crowe & Oades, 2013). Moreover, a critical element to consider is the coaches' pre-course baseline knowledge, changes in knowledge, and meaningful assessment to track the impact of coach education over a sustained period. Therefore, longitudinal studies could provide insight into the knowledge and behaviour change in coaches from the start to the completion of the course (Cushion et al., 2010; Metzler & Blankenship, 2008; Coldwell et al., 2011; Stodter et al., 2017; 2020).

## **Chapter Summary**

The review of the literature illustrates that technical and tactical concepts of sport-specific knowledge are underexplored areas within the field with an absence of academic papers. This has led to educators and coaches being drawn to technical reports, coaching syllabus, analysis reports, and commercial texts to advance their knowledge. The technical and tactical concepts are areas requiring further investigation. In addition, the literature suggests that existing research has not provided adequate attention to how coaches develop tactical knowledge.

Although several authors have criticised traditional coach education courses for being too focused upon professional knowledge, recently designed coach education courses in football have seen a shift in the opposite direction (Gilbert et al., Trudel, 2004; Nash et al., 2006; Schempp, McCullick & Mason, 2006; Côté et al., 2009; Cassidy et al., 2009; Nash et al., 2009; Cushion et al., 2009). Both candidates and coach educators alike suggest the current courses do not have enough focus on sport-specific knowledge, which could have a negative impact on the Level 3 course success rate over the last few years. As of June 2019, circa 900 coaches studying the course were still deemed not yet competent and still had not completed Level 3 from the 2017/18 or 2018/19 season (FA Education, 2019).

Moreover, a Physical Education teacher would be required to study at University for four years, then teach for a year as a newly qualified teacher (NQT) before being signed off with qualified teacher status (QTS). In contrast, although it may be advantageous for coaches to develop knowledge

across the different disciplines, it is unrealistic for a coach to acquire sufficient knowledge across all the disciplines from attending a Level 3 course that only consists of nine days of face-to-face delivery. (Nelson et al., 2013; Côté & Gilbert, 2009).

Although the author appreciates that the three main disciplines of sport-specific knowledge, knowledge of the “ologies” sport science disciplines such as; Physiology, Psychology, Sociology, and Kinesiology, and pedagogical knowledge of the learning approaches are fundamental to the coaches’ knowledge development, the main objective of the thesis is to explore how coaches develop sport-specific knowledge, specifically tactical knowledge (Kreber et al., 1997; Nash et al., 2006; Abraham et al., 2006; Côté et al., 2009; Price et al., 2019; 2020).

The next chapter explores the design and development of the conceptual model and framework which underpinned the thesis.

### **Chapter 3: Conceptual Framework and Model**

#### **The importance of a Conceptual Framework and Model in the thesis**

Within the literature, the authors present several different interpretations of the role a conceptual framework or model plays in the research process. Miles and Huberman (1984) suggest conceptual frameworks and models are flexible tools that may develop as the research evolves through the data analysis process. Additionally, Weaver-Hart (1988) suggests a conceptual framework is a 'tool' for researchers to organise, guide, and support the research providing a theoretical overview of the process (Leshema & Trafford, 2007). Equally, Berger and Patchener (1988) suggest that a conceptual model or framework should relate to the research problem and research question, and be underpinned by the literature.

A conceptual framework or model should guide the research process and demonstrate a clear link between theory, the aim and the observed findings within the study. Rudestam and Newton (1992) further advocate that generalisations can be made on the findings and be drawn back to the framework, leading to additional areas of investigation. Furthermore, several authors suggest a conceptual framework helps link theory to practice and something that can often be overlooked by doctoral students when conducting research (Rudestam et al., 1992; Leshema et al., 2007; Berger et al., 1988; Cohen, Lawrence, & Morrison, 2000). Berger et al., (1988) suggest studies informed by a conceptual framework or model, raise and demonstrate the critical thinking of doctoral-level researchers.

The conceptual framework guides the researcher within the field of study, as concepts become more defined, the framework was refined, however, it did not change its relevance to the field of study. Similarly, this defined process illustrated the researcher's understanding and personal development towards the concepts within the field (Bryman, 1988; Bouma, 1993; Salmon, 1992; Leshema et al., 2007). Several authors view conceptual frameworks and models from a discipline based standpoint, suggesting they support the researcher to interpret the findings of studies in the systematic study of particular phenomena in which social theory plays a significant role (Salmon,

1992; May, 1993; Leshema et al., 2007). Conceptualisation is integral in the research process as theory informs our decisions and allows us to make sense of the field of study. A conceptual model and framework forced the researcher to be explicit in the research process and informed interpretations and meaning towards the appropriate methods to collect and analyse the data (Cohen, et al., 2000; Leshema et al., 2007; Salmon, 1992; May, 1993).

Overall, a framework or model provides a scaffold for the researcher as it illustrates theory, the research strategy and supports the fieldwork process. They form a theoretical link between existing research, current theories, research design and interpretations of the findings. In addition, they can illustrate the conceptualisation of theories and outline how conclusions can be drawn from the findings of the studies. The conceptual framework and model applied within the research investigation attempted to solve the gap in coaches' tactical knowledge development (Cohen et al., 2000; Leshema et al., 2007).

Finally, researchers suggest conceptual frameworks play two significant roles; firstly, they provide a sound theoretical explanation of what the researcher intends to explore and secondly, they allow the reader clarity and confidence in what the researcher is exploring and how they will achieve it (Cohen et al., 2000; Leshema et al., 2007; Salmon, 1992; May 1993; Bryman, 1988; Bouma, 1993; Berger et al., 1988; Miles et al., 1984; Weaver-Hart, 1988).

### **The Development of the Conceptual Framework and Model in the thesis**

The next part of the chapter discusses the design and development of the conceptual framework and model. Figures 3.2, 3.5 and 3.6 illustrate the cycles that the model and framework went through during the study, with the final version of the framework and model presented in figures 3.7 and 3.8, respectively.

The thesis analysed coaches' tactical knowledge exploring what, how and when novice football coaches develop their tactical knowledge. In addition, it examined if a Game Model may be useful in supporting coaches to develop tactical knowledge.

A key part of the assessment criteria on the Level 3 course, requires coaches to complete a project. The project entails coaches designing what is called a ‘Model of Performance’. The model consists of two key concepts: ‘How we play’, and ‘How we support’. ‘How we play’ asks coaches to consider their style and system of play across the in and out of possession moments of the game (see Chapter 2). ‘How we support’ asks coaches to ‘assess’ and ‘analyse’ how the team performs the system and style of play across 18 games and training sessions.

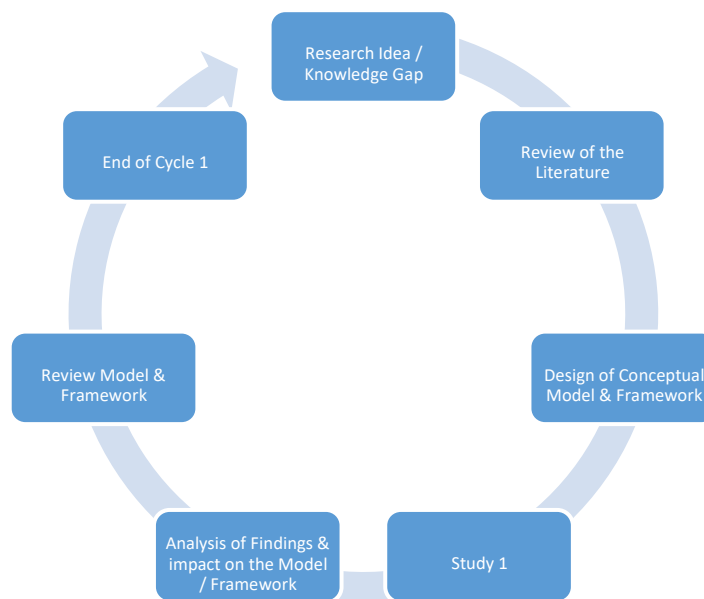
The model of performance in essence is a version of the Game Model, however, it does not contain several concepts contained within the Delgado-Bordonau et al., (2012) model. Moreover, across the nine days of the course, insufficient time is dedicated to exploring the tactical concepts of the game (see Chapter 2). Furthermore, there can be a variation of course delivery across the country due to the range of coach educators’ knowledge and experiences. In addition, Study 1 illustrated the differentiation in coaches’ baseline knowledge at the start of a course. Consequently, coaches are expected to undertake non-formal learning away from the course to support their tactical knowledge development. Therefore, the model and framework can support coaches and provide them with a framework away from the course to build their performance model.



**Figure 3.1.** Factors that influence in designing and building up a Game Model (Delgado-Bordonau & Mendez-Villanueva, 2012, Adapted from Oliveira, 2007).

Delgado-Bordonau et al., (2012) model in figure 3.1 may serve as a tool for coaches to explore and develop tactical knowledge, however, this model is more appropriate for experienced/expert coaches and managers as several factors (i.e., terminology, concepts, application and guidance) might be too advanced for less experienced coaches to build a model. In addition, the range of terminology applied to tactical knowledge concepts can be confusing for coaches as it might not reflect terms applied across the game (i.e., grassroots, professional game) or in academic literature. Subsequently, it may be challenging for coaches to access the required information to develop their knowledge (The FA, 2016).

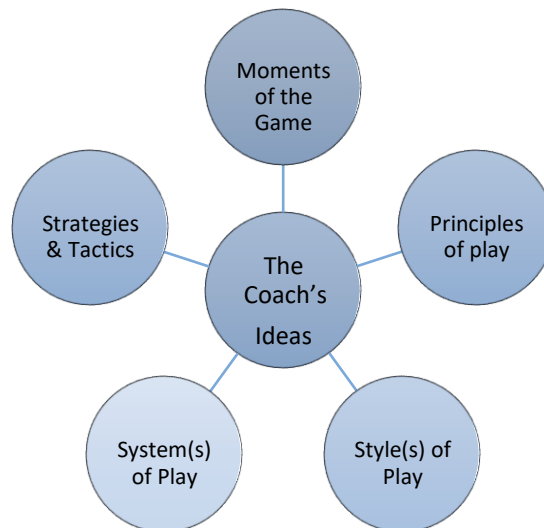
Figure 3.2 illustrates the first cycle, which incorporated an extensive review of the literature before building the conceptual model and framework. In the process of designing the model, it was vital to identify the relationships between the ranges of theories and reduce the key theories into a model form to guide the research.



**Figure 3.2.** Cycle 1 of the design of the conceptual model.

The next step involved investigating the concepts in the model to sense check the correct concepts aligned with the coaches' tactical knowledge requirements. Following critical analysis of

the Delgado-Bordonau et al., (2012) model, academic research and key concepts of the Level 3 syllabus, an adapted model was created with more suitable terminology and concepts. The concepts would be more relatable with coaches on the course. Figure 3.3 illustrates the first version of the model which encompasses 5 tactical concepts: moments of the game, principles of play, styles of play, systems of play, strategies and tactics.



**Figure 3.3.** Concepts of a Game Model (Chapter 3) (adapted from Delgado-Bordonau & MendezVillanueva, 2012).

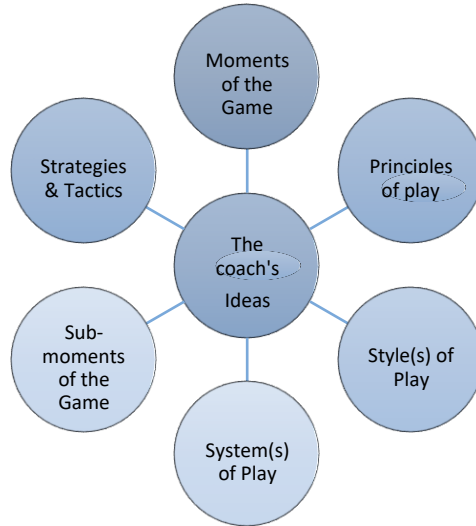
To support the model a conceptual framework (table 3.1) was developed to offer a theoretical underpinning to the area investigated. The first version formed the essential criteria applied in the data collection and data analysis stage within the first two studies, and key concepts and behavioural descriptions aligned with the Level 3 assessment guidelines.



**Table 3.1.** Conceptual Framework for study 1 and 2.

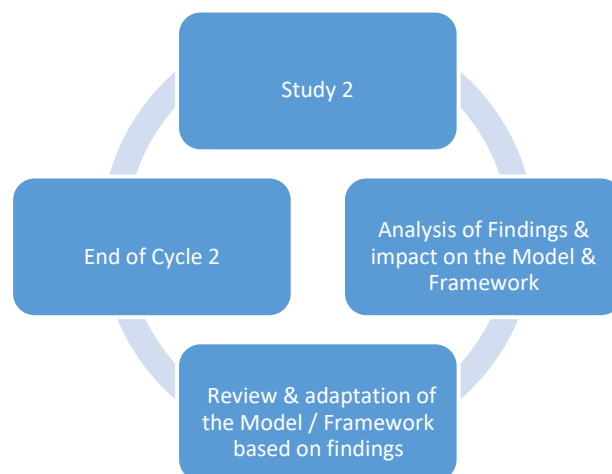
Concepts	Behavioural description	UEFA B Assessment Guidelines
<p><b>1. Moments of the game</b></p>	<p>In Possession – Attacking in open play                      The transition from defence to attack                      Set plays - free-kicks, thrown-ins, goal kicks and corner kicks.                      Out of possession - defending in an organised                      The transition from attack (dis-organised)                      Defending set plays - free-kicks, goal kicks, thrown-ins and corner kicks.</p>	<p>Observation - <b>Technical / Tactical Corner</b>                      Observe how teams are performing against <b>Principles of Play</b> to support the topic.</p>
<p><b>2. Principles of Play</b></p>	<p><b>In Possession:</b> Penetration, Create                      Space, Movement, Support, Creativity  <b>Out Possession:</b> Press, Delay, Cover and Balance, Compactness, Control and Restraint  <b>Transition:</b> Attack to Defence, Defence to attack</p>	<p>Observation - Observe how teams are performing against <b>Principles of Play</b> to support the topic.</p>
<p><b>3. Styles of Play</b></p>	<p>Possession based, build-up play, playing through the thirds, playing direct, maintenance, total football, Tika-Taka, playing in wide areas (crossing), counterattacking, fast tempo, sustained threat, progress and penetration, high press, mid press, low press, defending deep and forcing play, counter-pressing, low block, zonal, manto-man</p>	<p>Observation - Observe how teams are performing against <b>Principles of Play</b> to support the topic.</p> <p>Observation - <b>Technical Corner</b> observe a <b>small number of Individuals</b> evaluating strategy and tactics around a <b>few coaching key points</b> in relation to <b>Primary Player, Primary Unit</b> and <b>Secondary Unit</b></p>
<p><b>4. System of Play</b></p>	<p><b>1-4-4-2, 1-3-5-2, 1-4-3-3, 1-4-2-3-1, 1-3-4-3, 1-2-3-2-3, 1-3-2-3-2, 1-4-5-1, 1-4-6-0, 13-2-5, 1-2-3-5</b></p>	<p>Observation - <b>Technical Corner</b> observe a <b>small number of Individuals</b> evaluating strategy and tactics around a <b>few coaching key points</b> in relation to <b>Primary Player, Primary Unit</b> and <b>Secondary Unit</b></p>
<p><b>5. a) Strategies</b></p> <p><b>b) Tactics</b></p>	<p>Retain &amp; Build, Progress &amp; Penetrate, Counter Attack, Defensive, Midfield, and Attacking third. Wide, Central areas, Specific Players. Round, Through, Into, Onto, Beyond.</p> <p><b>In Possession:</b> playing out from the back, playing through the thirds, playing direct, playing in wide areas, and counter-attacking  <b>Out Possession:</b> high press, mid press, low press defending deep and forcing play                      Overlaps, underlaps, interchanging positions, crosses, dribbling, combination play, and switch play, through balls, combination play, dribbling, and hold up play.</p>	<p>Observation - Evaluating strategy and tactics around a <b>few coaching key points</b> to <b>Primary Player, Primary Unit</b> and <b>Secondary Unit</b></p> <p>Evaluating strategy and tactics around a <b>few coaching key points</b> to <b>Primary Player, Primary Unit</b> and <b>Secondary Unit</b></p>

The findings from the first study allowed the researcher to review the concepts within the model and framework before the second study and refine where necessary. Based upon study findings, an additional concept was added defined as sub-moments of the game (see below section).



**Figure 3.4.** Adapted Game Model with addition concepts (adapted from Delgado-Bordonau & Mendez-Villanueva, 2012).

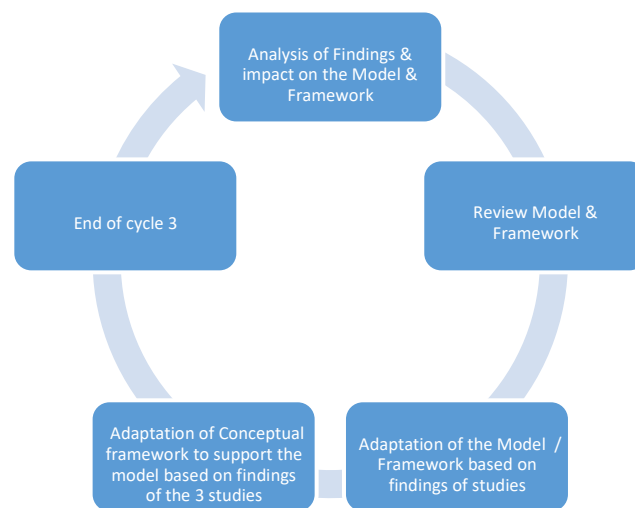
The sub-moment of the game concept referred to the different areas of the pitch and can be explored from both a vertical and horizontal perspective. For example, the pitch is split into the defensive phase, midfield phase and attacking phase, and left, right and central channels (see later in the chapter for more detail).



**Figure 3.5.** Cycle 2 is the adaptation of the conceptual model and the design of a conceptual framework.

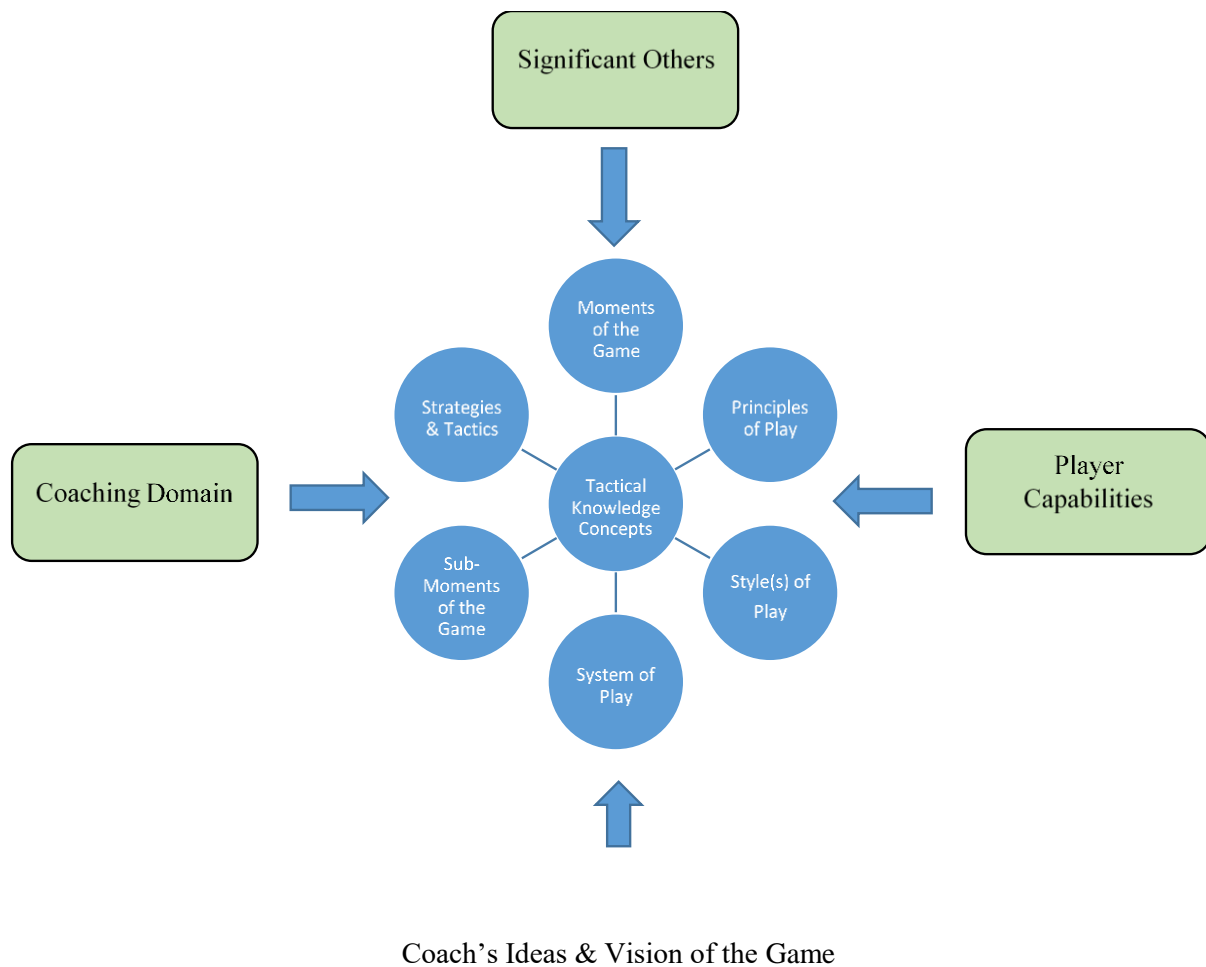
Figure 3.5 illustrates the second cycle of the process, which followed the same path as the previous cycle. Following Study 2, the model and framework were analysed and cross-checked with findings from the first two studies, identifying theoretical links between practice and theory that were adapted for investigation in the final third study. Moreover, the interpretations of findings and conceptual conclusions aided the next stage, which extends the model and conceptual framework as a tool to support the development of coaches' tactical knowledge. The concepts of the conceptual model and framework are explored in greater depth later in the chapter.

The final cycle shown in figure 3.6 demonstrates the final stage of the process through the findings identified in the third study. The final version drew on coherence between practical observations and conceptual conclusions and brought unity and consolidation within appropriate theories to both the conceptual model and framework.



**Figure 3.6.** Cycle 3 the adaptation of the conceptual model and conceptual framework.

The final version of the Game Model figure 3.7 is grounded on findings from the thesis. The model is a modified version, which is more relevant to coaches working at grassroots, semi-professional football, or professional game.



**Figure 3.7.** Concepts of a Game Model (adapted from Delgado-Bordonau & Mendez-Villanueva, 2012).

The model was adapted following critical reflection on its practicality and suitability, drawing on key findings from the three studies. The six tactical concepts encompass the moments of the game; principles of play; styles of play; systems of play; sub-moments of the game (areas of the pitch); strategies and tactics and are built on the coaches' ideas of the game. In addition, the model has some external considerations for a coach such as their coaching domain (Côté, & Vierimaa, 2014; LaraBercial, Hämäläinen, Oltmanns, Minkhorst, & Petrovic, 2017; Lyle, 2020; Lyle, & Cushion, 2017), the player's capabilities (Giske et al., 2015; Price et al., 2020; Richards et al., 2012; 2017) and the influence of significant other (Cherubini, 2019; Cushion, 2010; Cushion et al., 2006; Amorose, 2007; Horn, 2002; Smoll & Smith 2002). Figure 3.7 illustrates, the adaptation of the model and figure 3.8 shows the amended conceptual framework. Both have been refined and cross

referenced with the appropriate academic literature based on studies 1 and 2 findings. Therefore, the framework modified for Study 3 supported tactical knowledge development across additional concepts.

The coaches’ tactical knowledge of the game should develop and evolve, hence so should the Game Model. Consequently, the framework is flexible to adapt, enhance and change as a coach continues to develop and refine their knowledge and understanding (see figure 3.8). A key consideration for the coach is how their ideas and visions of the game fit their current coaching domain and how it will meet the players’ capabilities. For example, a coach may want to play a direct style of play into a big target striker, however, the player who plays striker within the team may be small, quick and unable to hold the ball up. This means the coach would have to adapt to meet the capabilities of the players to be successful.

<b>Stages</b>	<b>Concepts</b>	<b>External factors</b>
<b>Coaches Idea’s &amp; Vision of the Game</b>		
Stage 1	<b>The Moments of the Game</b>	
Stage 2	<b>The Principles of Play</b>	
Stage 3	<b>Style(s) of Play</b>	<b>Coaching Domain</b>
Stage 4	<b>System(s) of Play</b>	<b>Player Capabilities</b>
Stage 5	<b>Sub-Moments of the Game</b> ( <i>Areas of the Pitch</i> )	<b>Significant others</b>
Stage 6	<b>Strategies &amp; Tactics</b>	



Each concept is explained below in the next part of the chapter which explores each stage of the framework to support coaches understand what is required within each of the concepts. Each concept is supported by relevant academic literature, coaching practice models, and linked to the current coach education curriculum. The proposed model supports the development of the coaches’ knowledge across the areas shown in table 3.2. Declarative knowledge is the understanding of ‘what to do’ and acquiring knowledge in terms of the aims and objectives of the game (i.e., principles of play, strategies and tactics). Whereas, Procedural knowledge is the understanding ‘how to do it’ and

developing the knowledge to select the most appropriate skill or tactical action for a particular moment in the game. By applying declarative and procedural knowledge in practice via repetition and critical reflection, coaches can refine and advance their knowledge in practice, thus displaying conditional knowledge across each concept. Conditional knowledge in practice can be defined as knowing when and why to implement specific strategies and tactics at the correct moment, highlighted in table 3.2 (Brunning et al., 2004; Reynolds, 1992; MacIntyre et al., 2014; Werthner et al., 2006; McPherson, 1994; Kreber et al., 2000; Nash et al., 2006; Kannekens et al., 2009; Stodter et al., 2017; Walker et al., 2019; Toner, 2017; Prince et al., 2019; 2020).

**Table 3.2.** Knowledge Bases for Coaching Football (adapted from Price et al., 2020).

Type of Knowledge	Example of Knowledge	Coaches' Considerations
Declarative; knowing "What to do"	Developing knowledge around the aims and objectives of the game such as laws, moments, principles, tactics, and techniques.	For example, understanding the attacking principles of play
Procedural; knowing "how to do" something	Procedural knowledge is the steps that need to be performed to select the most appropriate skill or tactical action for a particular moment of the game.	How the back 4 unit will apply the attacking principles when playing out from the back. Game considerations (own player units alongside opposition position on the pitch), and state of the game (time remaining, score line, weather conditions, number of players).
Conditional; knowing "when, how where and why" to apply declarative	Knowledge is the awareness of knowing when, where, why, and how to apply different strategies. (Apply the most appropriate strategy and tactics at the correct time and moment).	Awareness of how to control and regulate the learning process.  When, where, how, and why to play out vs when, where, how, and why not to play out. Game considerations (own player units alongside opposition position on the pitch), and state of the game (time remaining, score line, weather conditions, number of players).

## **How to build a Game Model for practice: The Development of a Game Model approach to advance tactical knowledge.**

The next part of the chapter explores the key concepts of a modified Game Model (GM) and supporting conceptual framework. The proposed terminology hopes to unify and simplify meaning for coaches, which in turn aids the dissemination of more understandable concepts to players, thus allowing players to learn, develop and enhance their tactical knowledge. Furthermore, the chapter will illustrate how coaches explore each concept of the framework and the knowledge required to construct their GM (Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018; Price, et al., 2020).

Every coach will have their idea and vision of the game which will impact the development of a GM. The GM encompasses six tactical knowledge concepts that require a coach to obtain knowledge that frames the development of their vision of the game. In addition, when developing each tactical concept, a coach is required to consider their coaching domain, the players' capabilities and significant others involved in their coaching. The conceptual framework has been designed to cultivate coaches' tactical knowledge to support their GM development. The framework consists of six stages, as knowledge is developed across one stage it impacts other tactical concepts (figure 3.8, final version of the detailed framework can be found in Chapter 8).

It would be beneficial for a coach to start at stage one and work through each stage sequentially, however, knowledge gained at previous stages facilitates knowledge development at the next. Once a coach advances their knowledge of a concept, it will also support their knowledge development across other concepts. During this process, a coach's tactical knowledge should advance and evolve, hence so should their model, therefore, the framework is flexible as a coach enhances their knowledge they can revisit previous stages to adapt and refine accordingly.



## **The Concepts of the Game Model and Framework**

### *Coaches Ideas*

As suggested in Chapter 2, coaches' ideas should encompass all tactical concepts and are the model's foundation rather than being one concept within the model for consideration. The coaches' ideas form an integral part in the designing of a GM as it relates to how a coach views the game and wants their team to play. Each coach will have several specific game ideas that impact their GM such as beliefs, preferred principles, systems and styles of play. A key consideration is how their ideas and visions of the game fit with their current coaching domain and the players' capabilities. Coaches are required to understand the concepts of each stage of the framework so that they can create a GM that is clear, precise and enables them to translate their way of playing effectively to the players (Giske et al., 2015; Price et al., 2020; Richards et al., 2012; 2017; Martins, 2003; Frade, 2004; DelgadoBordonau et al., 2012; Tamarit, 2015; Tee et al., 2018).

### *Moments of the game*

Several authors recommend that strategies and tactics should be acquired based on the logical structure of the game, defined as the moments of the game. Delgado-Bordonau et al., (2012) and Hewitt et al., (2016) have proposed different models of the moments of the game displayed in Chapter 2. The moments of the game are a significant factor for a coach when designing a GM. Therefore, taking into consideration previous research and current trends within the game, figure 3.9 presents modified moments of the game for consideration. This version includes an additional sixth moment, with set plays split into attacking and defending, rather than one suggested by other authors (Frade, 2004; Delgado-Bordonau et al., 2012; Hewitt et al., 2016).



**Figure 3.9.** The 6 ‘Moments of the Game’.

Coaches must consider each of the six moments, the three in-possession moments, the transition from defence to attack (counter-attacking), attacking in open play, and set plays which include free-kicks, thrown-ins, goal-kicks, corner kicks and penalty kicks. For out of possession, the coach must consider how to defend in the transition from attack (dis-organised), defending in an organised state, and defending set plays. A coach must have a clear vision of how the team needs to apply themselves in each moment of the game. This vision should be underpinned by relevant principles of play which inform their specific strategies and tactics across each of the moments. Once achieved, the coach considers the most effective and appropriate approach to designing training programmes and practices for the specific moments, thus bringing the GM to life for the players (Hewitt et al., 2016; FernandezNavarro et al., 2016; 2018; Delgado-Bordonau et al., 2012; Tee et al., 2018).

### *Principles of Play*

The literature illustrated five key principles of play for both the attacking and defending moments of the game, and for each attacking principle, there is a counteracting defending principle. The principles of play are fundamental to the moments of the game and are applied to every attacking, defending, and transition moment. The principles are a significant concept in the development of tactical knowledge and game understanding, and fundamental for an effective GM.

The attacking principles are established when a team attempts to form an attack through the maintenance of possession to create a goal-scoring opportunity. Through the five attacking principles (penetration, support, create space, movement and creativity), coaches are attempting to strategically position players around the pitch to create space by increasing the surface area of the pitch that the attacking team covers. The team aims to dis-organise and unbalance the opposition in critical areas of the pitch to gain territory, exploiting the space created to produce goal-scoring opportunities (Bangsbo, 2000; Costa et al., 2009; Piltz et al., 2013; Hewitt et al., 2016; The FA, 2016; FernandezNavarro et al., 2016; Wade; 1967; 1996; Lago-Ballesteros et al., 2010; Tenga et al., 2011).

In contrast, defensive principles of play (press, delay, compactness, balance, control and restraint) are established when a team is out of possession of the ball. The defending team aims to achieve a balanced organised structure, designed to reduce space and time by delaying the attacking team from moving forward and gaining territory. Once the team is in an organised position, the aim is to restrict the attacking team's time on the ball by applying defensive pressure and limiting the attacking team's passing options by increasing the numerical advantage in specific parts of the pitch. The final aim is to force the attacking team away from the goal to play in less critical areas to prevent goal-scoring opportunities and ultimately attempt to regain possession (Wade, 1996; Bangsbo et al., 2002; Costa et al., 2009; Piltz et al., 2013; Clemente et al., 2014; Fernandez-Navarro et al., 2016; The FA, 2016).

The two transition moments attack-to-defence and defence-to-attack are integral to the modern game (Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016; Hughes & Lovell, 2018). In the transition from attack to defence, a team is often disorganised and attempts to regain a balanced, defensive structure based on their organised defensive system through effective recovery runs, while at the same time trying to delay the attack by restricting the opposition's time and space. This transition state includes key principles such as transition speed, preventing forward passing, increasing the number of passes, denying ball speed, intercept, and spoil or tackle. During the transition from defence to attack, a team attempts to exploit the opposition's disorganised state through playing forward quickly and exploiting space, which has been exposed by the opposition

alongside maintaining a balanced team (Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016; Hughes et al., 2018; The FA, 2016).

The principles of play are an integral part of developing and building a model and impact all stages of knowledge development. Coaches must develop their knowledge and understanding of the principles of play so they can apply the principles associated with each moment of the game.

### *Style(s) of Play*

A style of play can be described as the team's overall behaviour when attacking or defending in an attempt to achieve their objectives and game plan (Hewitt et al., 2016; Fernandez-Navarro et al., 2018; Delgado-Bordonau et al., 2012). Teams employ specific tactical behaviours that inform their in and out of possession strategies, with teams utilising a specific style of play when attacking and another when defending. The style of play imposed on the team is influenced by the coaches' views and ideas of the game, however, this should also be influenced by their current domain and team's overall objectives (Nelson et al., 2006; Carless et al., 2011).

For coaches on the Level 3, a style of play would fall under the "How We Play" element of the course. This section requires coaches to consider how they want their team to play both in and out of possession (The FA, 2016). Chapter 2 identified several attacking and defending styles of play. The favoured attacking styles include possession-based, build-up play, playing direct, Tika-Taka and counter-attacking. Examples of defending playing styles include high-press, mid-press, defending deep and counter-pressing. Several defensive styles relate to the specific area of the pitch a team applies defensive pressure. Furthermore, as possession might be lost or gained at any stage of the attack or defence, some authors have identified counter-attacking and counter-pressing as examples of transition styles of play, however, this is still an area requiring further investigation (Fernandez-Navarro et al., 2018). Coaches need to recognise how styles of play need to be flexible across different formats of the game, as literature has been criticised for several misinterpretations of the styles of play, with a lack of clear definitions and conflicting assumptions across studies (Fernandez-Navarro et al., 2018).

Within dynamical systems such as football, there are too many variables and degrees of freedom to suggest a definitive style of play will guarantee success. However, research advocates that to increase the chance of success, an effective style of play employed by coaches enhances the players' characteristics and strengths, alongside considering the opposition's styles, strategies and tactics to the game (Reep et al., 1968; Grehaigne et al., 1997; Tenga et al., 2003; Hughes et al., 2005a; Lago, 2009; Fernandez-Navarro et al., 2018).

Coaches are required to evaluate the different styles of play both in possession, out of possession, and transition before deciding on their preferred approach. In addition, they are required to consider several other game variables, such as home advantage, winning vs development, the type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition (Grehaigne et al., 1997; Garganta, 2009). Coaches need to be flexible in their approach to overcome problems posed by the opposition. For example, a coach may want a possession-based style, playing through the thirds, however, if the opposition employed a high-pressing style, the coach is required to decide to either continue with the chosen strategy and tactics or employ a different approach to overcome the opposition. The key for coaches is to have variable styles, to recognise when to play into, through onto or around the opposition. To employ an alternative approach, coaches need to allow players to become familiar with the alternative approaches in training. With the ultimate aim to allow the players during games to recognise the situation and employ the appropriate strategies and tactics of their own accord (Grehaigne et al., 1997; Garganta, 2009).

### *System(s) of play*

As discussed in Chapter 2, the terms structural organisation or formation refers to the spatial arrangements of how the individual players within a team are positioned on the pitch. The positions are split into three tactical groupings or subsidiary units such as; defenders, midfielders, and attackers. The different combinations of players in these set roles describe the different systems of play. Exploring the 1-4-3-3 system of play, this would include, in principle, a defending unit back four, a midfield unit of three, and an attacking unit of three. However, several authors suggest that the

static notation or numerical schemes of describing a team's formation is no more than a convenient approach to generalise the organisation of the tactical grouping of players. This approach is perceived to be too simplistic and does not replicate the dynamical nature of football with the constant interchanging and switching of players' roles in relation to the ball position on the pitch. The term 'system of play' has been identified as a more appropriate term to discuss how a team sets up during a game. Recent research has attempted to explore systems of play and detect system changes when a team is in or out of possession. Studies have presented several system analytical tools to discover the in-game variations and distinguish between in possession and out of possession systems, which will see player roles and responsibilities change significantly within the different moments of the game. In addition, current analytical providers have started using tracking data, such as GPS, to cluster a team's overall positions within games and, in some reports, highlight a team's overall average positions both in and out of possession (see Chapter 2 for more detail) (Müller-Budack et al., 2019; Bialkowski et al., 2016; Sridharan et al., 2016; Lucey et al., 2013; Machado et al., 2017; Wu et al., 2019).

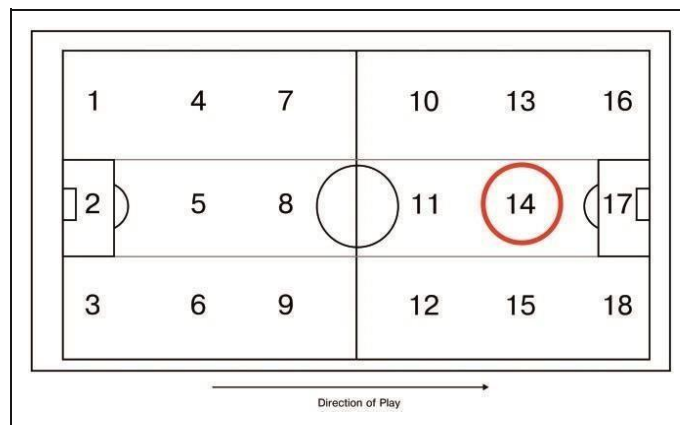
For coaches, it is vital to research and develop an understanding of the different systems of play, the benefits of each, and the weaknesses of each alongside when and why to employ a certain system. Furthermore, it is important to consider the key roles and responsibilities of the players in different positions. The individual player positions, roles, and responsibilities will all be influenced by the coach's interpretations, knowledge of the game and preferred style of play. A coach will have an interpretation of the type of player they would like to have in each position and will have set characteristics and skillsets associated with each position (for example, a centre back who is tall and strong with physical attributes but who is also good technically on the ball to play out). The players' characteristics in each position and desired roles and responsibilities have a significant impact on the team's preferred style of play, strategies, tactics and behaviours when attacking, defending and in transition. It is important when exploring preferred systems for a coach to consider how best to initially set the team up in possession and then out of possession. In addition, a coach will explore

how the system switches between in possession to out of possession and how the team will transition from attack to defence and defence to attack.

*Sub-Moments of the Game (Areas of the pitch)*

Until recently, the game was largely considered to be broken into two areas of the pitch: attacking and defending. However, several authors and coaches have started to explore pitch geography and geometry by dividing the pitch into several segments such as thirds, channels and quadrants from a horizontal, a vertical or combined viewpoint (Lebzygold, 2017; Den Kategorien, 2014; Soccertutor.com, 2017; Delgado-Bordonau et al., 2016; Herold, Goes, Nopp, Bauer, Thompson & Meyer, 2019).

Figure 3.10 illustrates the pitch divided into six-by-three grids, with 18 segments for consideration. Some authors have highlighted ‘Zone 14’ as the optimal area for creating goal-scoring opportunities, therefore it is a common focus for several teams’ strategies and tactics (Herold et al., 2019).



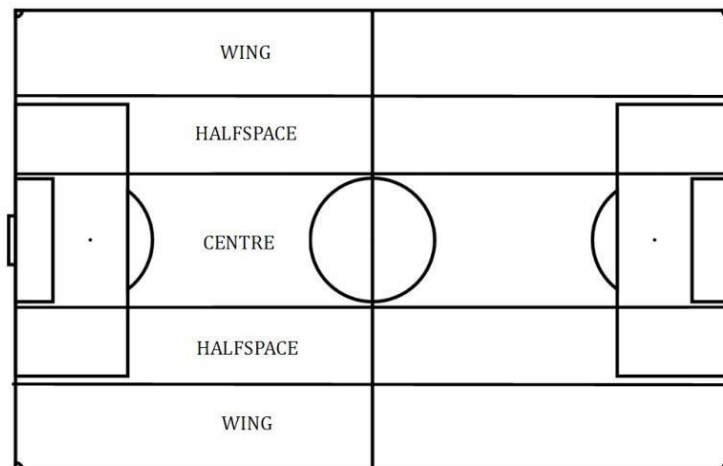
**Figure 3.10.** 18 zones on the pitch (Herold et al., 2019).

Moreover, Eldridge, Pulling and Robins (2013) split the pitch into 12 areas, horizontally defensive, pre-defensive, pre-attacking and attacking, and vertically left, central and right channels (figure 3.11).



**Figure 3.11.** The Pitch is divided into 12 areas of the pitch (Eldridge, Pulling & Robins, 2013).

Further analysis of the game has evolved with the inclusion of five channels. Half-spaces displayed in figure 3.12 emerged as another strategic area to create goal-scoring opportunities.

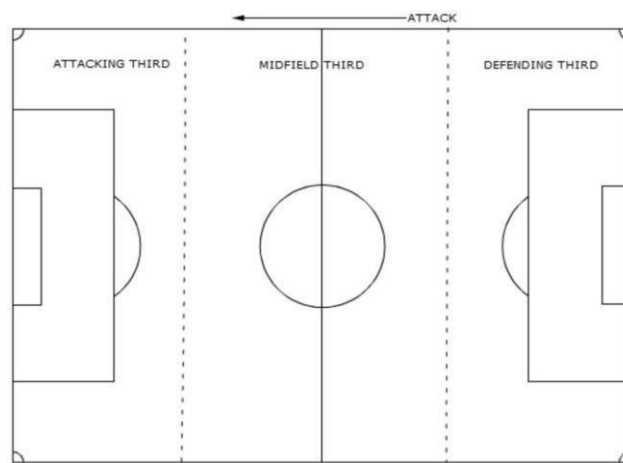


**Figure 3.12.** Understanding the Importance of the half-space (Lebzygold. 2017)

Research suggests that less experienced coaches while observing games often have a narrow observational focus, being drawn to the ball, the player on the ball or the intended player to receive the ball. When starting to move away from the ball and focus on other aspects of the game, studies have shown coaches are less likely to select the most appropriate response to the situation, making more abrupt or inconsistent decisions by being drawn to less relevant cues (Singer et al., 1999; Thomas et al., 1994; Galanter et al., 2005; Vergeer et al., 2009; Kaya, 2014; Price et al., 2020; Horrocks et al., 2016; Bootroom, 2020; Nash et al, 2006; Stoszkowskia et al., 2015; Walker et al., 2019).

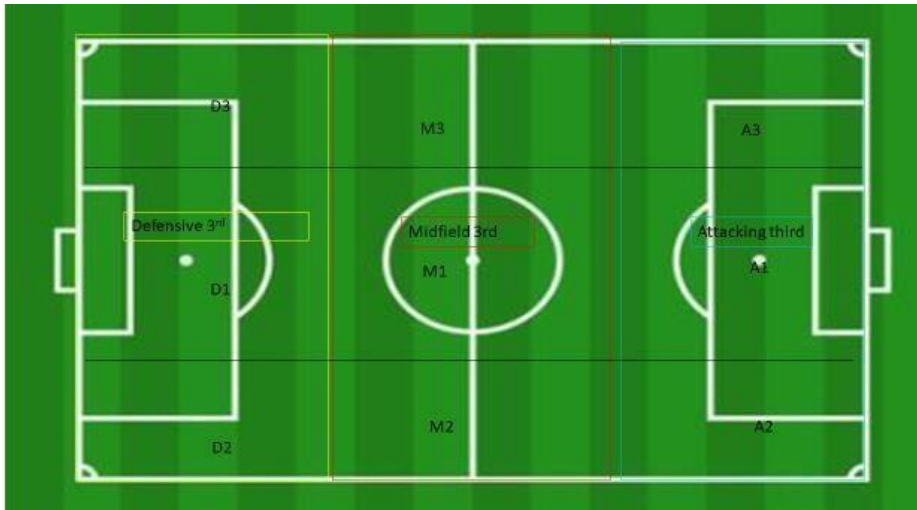


Due to the highly complex and random nature of football, the six moments identified earlier support coaches develop their tactical knowledge, however, it is proposed each moment be broken down further into smaller and more manageable areas defined as sub-moments of the game. By dividing the pitch into the three sub-moments, coaches can focus on individual players and units within each specific sub-moment. Therefore, it is proposed that coaches should initially divide the game into three horizontal phases when designing their GM. These three phases of the game are comprised of the defending third, midfield third and attacking third, which form the sub-moments of the game shown in figure 3.13.



**Figure 3.13.** Sub-Moments of the game (defensive, midfield and attacking thirds).

Once a coach has set up the team in each horizontal sub-moment, they should then consider the three vertical sub-moments of the game. The coach may need to consider if the team applies different approaches in the centre of the pitch compared to the left or right channel. Figure 3.14 illustrates the sub-moments broken down into both horizontal thirds and vertical channels of the pitch.



**Figure 3.14.** Demonstrating both vertical and horizontal sub-phases of the game.

As discussed previously, a system of play is not rigid, they change and adapt when teams are attacking or defending. However, the structure changes depending on which sub-moment the ball is in. The team's system changes and adapts to create and exploit space when in possession or restrict and deny space when out of possession. In both instances, the team aims to try and achieve numerical superiority over the opposition. Therefore, the sub-moments aim to reduce and refine the unpredictability of the game for both the coach and the players alike (Lucey et al., 2013; Machado et al., 2017; Müller-Budack et al., 2019; Bialkowski et al., 2016; Wu et al., 2019).

Within each moment of the game, the coach has a structural setup adapted from the preferred system of play. However, only the set-play moments of the game allow an organised static structure of the system of play both in and out of possession. When the ball comes back into play in the restart phase, players are required to adapt to the ball position and create an adapted system. How the team shape adapts is initially controlled by the coach's desired strategy and tactics, however, players will make their own decisions and adapt in real-time when situations change on the pitch. Hence, a coach needs to extend the teams system and style to each of the sub-moments of the game. The adapted shape allows players added to organised units or units from different groups to create new units and additional units that often see teams extend into four or five units as opposed to the traditional three units of defenders, midfielders and attackers (Yiannakos et al., 2006; Carling et al.,

2007; FernandezNavarro et al., 2016; Garganta, 2009; Grehaigne et al., 1995; 1997; Rein & Memmert, 2016; Price et al., 2020).

After considering the four open moments and sub-moments of the game, the closed moments of the game are equally important. A coach is required to focus upon set-plays both in and out of possession such as corner-kicks, free kicks, throw-ins or goal kicks, and decide the teams' organisation in each of the sub-moments and sub-sub-moments. Due to the moments being static, set plays may be easier to plan due to the laws of the game preventing the opposition from applying immediate pressure to the ball, which allows the team in possession more time and freedom of passing options from the restart. However, out of possession set-plays are more difficult to control due to the tactics of the opposition, although more variables can be controlled such as which players mark the opposition players, or if a team decides to select man-to-man or zonal marking (Bouthier, 1988; Delgado-Bordonau et al., 2012; Tamarit, 2015; Tee et al., 2018).

### *Strategies and Tactics*

Instead of sub-principles and sub-sub-principles of play, strategies and tactics are considered more applicable concepts to consider. Strategies and tactics are two very important aspects of team play but can often be misconceived terms.

A strategy is the plan of action used to achieve an overall outcome or approach to a game, whereas tactics are the means to achieve the overall aim or outcome (Grehaigne et al., 1995; 1999; Bouthier, 1988; Yiannakos et al., 2006; Carling et al., 2007; Price et al., 2020). A team's strategy refers to predetermined plans, which impact how a team, units and individual players interact and coordinate planned, intended actions during a game. Strategies are influenced by the coach's preferred style and system of play that impacts the team's application of the attacking, defending and transition principles of play. The team's strategy should mirror the coach's preferred playing style and be built around the moments and sub-moments of the game in conjunction with the appropriate principles of play. For example, a coach who has a possession-based approach may consider applying strategies such as; playing out from the back, retaining and building, progressing and penetrating, or

a combination of the three depending upon the area of the pitch in which the team have possession or have regained possession. When devising a strategy for any given game, the coach should consider their preferred style of play, the overall team, the individual player strengths, and player availability. Furthermore, coaches should consider the opposition's system of play, style of play, and the team's strengths and areas of weaknesses. These considerations allow the coach to plan the most appropriate strategy to exploit the opposition's weaknesses during the game.

Tactics are the instructions provided by coaches to achieve the team's objective when applying the principles of play. Tactics influence the team's strategy and are the bridge between the coach's playing style and systems of play. How a coach employs tactics will determine how individual players, units and teams function to manage factors such as space, time and organisation (Gréhaigne et al., 1995; 1999; Bouthier, 1988; Yiannakos et al., 2006; Carling et al., 2007; Price et al., 2020; Fernandez-Navarro et al., 2016; Garganta, 2009; Rein et al., 2016). Tactics are pre-planned to allow players to recognise specific patterns of play and team configurations rehearsed in training to develop efficient tactical behaviours to outperform the opposition in each of the moments and sub moments of the game. Players are required to select and apply the most appropriate tactical decision and execute the appropriate skill (pass, dribble, shoot etc.) at the right moment based on a) the team's tactical considerations, b) individual position on the pitch, c) own team mates' positions, d) the opposition. However, individual players, units and the team must be able to respond to unexpected situations created by the opposition and be able to adapt and apply the voluntary tactical decision to combat the unexpected situation posed through finding new, appropriate solutions (Gréhaigne et al., 1995; Pill, 2013; Carling et al., 2007; Fernandez-Navarro et al., 2016; Garganta, 2009; Gréhaigne et al., 1999; Price et al., 2020).

This process can be developed through effective planning by a coach drawing upon several scenarios in practice and adapting strategies and tactics in training that allow players to recognise specific situations earlier and coordinate a timely response. During the game, a coach will change or amend tactics to gain an advantage through exploiting a specific situation or causing a perturbation that changes the attacking or defensive flow of the game. For example, to protect a narrow winning

margin with time running out in the game, a coach may decide to change the system and personnel by substituting an attacking player for a more defensive player (Rein & Memmert, 2016; Gréhaigine et al., 1997; McGarry et al., 2002; Garganta, 2009; Grehaigine et al., 1999).

### *External factors*

Once a coach has considered the tactical concepts of the game, the next step is to contemplate three external factors, the coaching domain, the player's capabilities and the influence of significant others. These three factors can all have a notable impact on the design and implementation of an effective GM. This next step integrates the club structure and aims, football culture and players' capabilities from the Delgado-Bordonau et al., (2012) model.

Within the coaching literature, there has been a gradual interest in sports coaching domains (Côté et al., 2014; Lara-Bercial et al., 2017; Lyle, 2020; Lyle et al., 2017). A coaching domain can be described as discrete populations that share distinct characteristics, behaviours, technical ability, performance standards, motivations, competition formats, and social constraints. For example, beginners would have different requirements in contrast to expert performers (Lyle, 2020; Lyle et al., 2017). However, there has been much deliberation over the most applicable categorisation of these domains (Côté et al., 2014; Lara-Bercial et al., 2017). Coaches work across different domains, therefore they need to consider additional contextual factors (i.e., age groups and playing level). The players' age can impact the implementation of the coach's GM, requiring the coach to consider the different characteristics and capabilities when coaching players in the Foundation phase (5-11) compared to the Youth development phase (12-16), the Professional development phase (17+) and adults (The Football League, 2012; Roddy, 2011; Bootroom, 2017). Furthermore, the coach needs to carefully consider the players' needs across different levels such as grassroots (initiation or beginner), semi-professional football (performance), or the professional game (elite) (Lyle, 2020; Lyle et al., 2017; Côté et al., 2014; Lara-Bercial et al., 2017).

Several key areas such as technical, tactical, psychological, physiological and sociological skills make up characteristics of a football player (Reilly, Bangsbo, & Franks, 2000a; Rienzi, Drust, Reilly, Carter, & Martin, 2000; Reilly, 2001; Reilly, Williams, Nevill, & Franks, 2000b). Each coach has a subjective view of their preferred type of player, alongside the playing attributes they require to fulfil specific roles and responsibilities of each position. Coaches are required to reflect and assess if players are capable of effectively applying their chosen system and styles of play or have the characteristics and capabilities to apply the coach's tactical ideas and vision of the game. If the players are not capable, the coach's initial ideas may have to be adapted to meet the players' capabilities (Carling, Le Gall, Reilly, & Williams, 2009; Elferink-Gemser, Visscher, Lemmink, & Mulder, 2004a; Savelsbergh, Haans, Kooijman, & Van Kampen, 2010; Horne & Williams, 2004; Tee et al., 2018; Giske et al., 2015; Price et al., 2020; Richards et al., 2017).

Technical and tactical skills and effective execution of skills such as ball control, passing, dribbling, and shooting skills are deemed critical for successful performance in football. These technical and tactical skills are fundamental to certain styles of play, for example, a possession-based approach would require players to have good ball control alongside good passing execution. This would allow a team to maintain sustained periods of possession required to break down the opposition. More specifically, in terms of positional characteristics, a coach may want a centre back who is physically strong and who has other physical attributes such as power and speed to defend but who is also good technically on the ball to play out (Ericsson et al, 1993; Bangsbo, 1994; Reilly et al, 2000a; Rienzi et al., 2000; Reilly, 2001; Reilly et al., 2000b; Carling et al., 2009; Elferink-Gemser et al., 2004a; Savelsbergh et al., 2010; Horne et al., 2004; Williams & Hodges, 2005; Passos, Araújo, Davids & Shuttleworth, 2008; Christensen, 2009).

In contrast, some coaches may prefer players with advanced physiological characteristics such as aerobic or anaerobic capabilities to meet the high intensity or intermittent demands that a player would require in a high-pressing style out of possession. Furthermore, these characteristics

would be required in a more direct or counter-attacking approach, demanding players who can run box-to-box (Hoff, 2005; Mohr, Krustup, & Bangsbo, 2005; Lawrence, 2010; Christenson, 2009; Bangsbo, 1994; Reilly et al., 2000a; Rienzi et al., 2000; Reilly, 2001).

Significant others play a crucial role within coaches' sporting, educational and life experiences. These significant others all impact the coaches' behaviours, ideas, values and beliefs. The head coach, managers, other coaches, players, parents, sports science or medical support, the board and fans have been identified as key significant others impacting the coaches' practice (Reilly *et al.*, 2000; Burgess & Naughton, 2010).

Significant others will set the club's overall season aims and objectives such as to win the league, finish mid-table, avoid relegation, play an attractive style of football, or give youth a chance to develop, therefore, it is essential a coach's aims and objectives align with the club. The club's aim will be dependent upon the level and age group, and all aspects will have a significant influence on the coach's GM. The key aspect of developing an effective GM is to identify individual players' strengths, physical characteristics, technical ability, and game understanding before establishing which style and system of play would suit the group of players and enhance the chance of success of achieving the club's, team's and coach's desired aims and objectives. Moreover, communication between key stakeholders is essential in the application of an effecting GM to enhance team performance (Cherubini, 2019; Cushion, 2010; Cushion et al., 2006; Amorose, 2007; Giske et al., 2015; Price et al., 2020; Richards et al., 2017).

### **Chapter Summary**

The crucial aspect within the GM for a coach is applying the specific strategy and tactics for each of the moments and sub-moments of the game, linking into their overarching systems and styles of play. In essence, the tactics in each moment and sub-moment of the game are how a coach is going to apply the principles of play related to their preferred system of play, style of play and strategy. The first step for a coach is to decide which moment of the game to explore and then subsequently break each moment down into the three sub-moments.

Once a coach has designed their GM, the next stage is to consider how they bring the model to life through the designing of effective coaching sessions and practices. Although the aim of this chapter is not to explore the pedagogical approaches of coaching practices, a coach is required to get their ideas across to the team. Practices should replicate the moments of the game, the team's systems of play and style of play to shape specific team behaviours through the appropriately designed strategies and tactics (Martins, 2003; Frade, 2004; Casarin & Oliveira, 2010; Delgado-Bordonau et al., 2012, Tamarit, 2015; Tee, et al., 2020).

An integral part is the effective planning of conditioned practice, which replicates game situations. Coaches can manipulate practice conditions through changing constraints, such as the number of players, size or shape of the pitch, rules or time constraints to promote desired behaviours. This approach aligns with more modern pedagogical approaches of training such as 'Teaching Game for Understanding' or constraint lead approaches which allow players to develop their tactical knowledge and game understanding (Williams et al., 2005; Araujo et al., 2008; Williams et al., 2001; Thorpe et al., 2018; Martins, 2003; Frade, 2004; Delgado-Bordonau et al., 2012; Tamarit, 2015; Tee et al., 2018).

The GM approach takes into account many considerations: findings from the thesis, discussions with fellow coach educators, observing and mentoring coaches, the limited number of studies in the field, and also how topics are presented and delivered across different settings. Once a coach has established a sound tactical understanding across each of the moments and sub-moments of the game, the coach can add on and explore the advanced tactical dimensions of the game, such as half-spaces which are often explored at the advanced levels of coaching qualifications (Bootroom, 2020, FA Education, 2016; Nash et al, 2006; MacDonald et al., 2008; Stoszkowskia et al., 2015; Stodter et al., 2017; Walker et al., 2019; Kaya, 2014).

The conceptual model and framework supported the researcher to be explicit in the research process and informed the interpretation and meaning towards selecting the most appropriate methods to collect and analyse the data. The next chapter explores the different research concepts of ontology,



epistemology, methodology and methods applied across the thesis (Cohen, et al., 2000; Leshema et al., 2007).

## **Chapter 4: General overview of Methodology**

The following chapter explores the different research concepts of ontology, epistemology and methodology applied across the Professional Doctorate thesis. The methodological process is a complex phenomenon, which should not merely be labelled as a qualitative or quantitative research approach. There are several underlying philosophical beliefs defined as paradigms that underpin the research process. Therefore, it is paramount for a researcher to understand the different paradigms and ascertain the best approach to collate, analyse and present the data and research findings (Ritchie & Lewis, 2003; Gratton & Jones, 2005; Morgan, 2007; Sparkes & Smith, 2014; Denzin & Lincoln, 1994, 2000; 2011).

### **Paradigm**

A research paradigm can be described as a set of common beliefs or linked assumptions of the world, or how individuals view the world. All scientific inquiry is deemed to be based upon a paradigm philosophical view, with similar disciplines sharing the same cognitive perspective (Kuhn, 1962; Sale, Lohfeld, & Brazil, 2002; Slevitch, 2011; Lincoln & Guba, 1985; Johnson & Christensen, 2012). The quantitative and qualitative research paradigms debate has endured for more than a century, with several key advocates on both fronts (Lincoln et al., 1985; 2000; Maxwell & Delaney, 2004; Bryman & Burgess, 1984; Hall, 2013; Johnson & Christensen, 2012). Quantitative and qualitative approaches derive from two major philosophical paradigms known as positivist and interpretative. Both approaches have different epistemological and ontological assumptions, in essence, the fundamental difference between quantitative and qualitative research lies in ontology and epistemology beliefs. These beliefs will have a significant impact upon the approach adopted by the researcher (Gratton & Jones, 2005; Morgan, 2007; Lincoln et al., 1985; Maxwell et al., 2004; Guba, 1987; Slevitch, 2011; Sparkes et al., 2014).

A positivist's philosophy viewpoint is more likely to apply a quantitative method approach to a research question. As a positivist believes there is a single truth or reality which can be known and measured, they see the world consisting of real objects and universal laws. Therefore, they focus upon

reliable and validated tools and techniques to find the information through objective methods (Johnson & Onwuegbuzie 2004; Sparkes et al., 2014; Gratton et al., 2005; Hall, 2013; Johnson et al., 2012). However, an interpretative philosophy viewpoint is more likely to apply a qualitative method approach. Interpretative approaches can also be classified as constructivist; they believe there is no single truth or reality, and that truth is required to be understood through qualitative approaches that add meaning and context to the multiple realities (Burke & Onwuegbuzie 2004; Sparkes et al., 2014; Gratton et al., 2005; Hall, 2013; Johnson et al., 2012).

Moreover, during the last three decades, several other paradigm interpretations have emerged within the literature which consist of constructivism, subjectivism, objectivism, post-positivism, postmodernism, pragmatism, idealism, relativism, critical realism, critical theory, post-colonialism, humanism, and hermeneutics. These different paradigm approaches all shape the researcher's views about the world and influence which methodology to adopt for collecting, analysing and interpreting data. Paradigms are crucial as they guide both the research question alongside the appropriate methods employed to answer the research question. Selecting the most appropriate philosophical standpoint and methodological approach will enhance and support the quality of research produced (Gratton et al., 2004; Armour & Macdonald, 2012; Denzin et al., 2000; 2011; Morgan, 2007; Sparkes & Smith, 2014; Johnson et al., 2004; Hall, 2013; Johnson et al., 2012; Slevitch, 2011; Lincoln et al., 2000; Smith, 1983; 1984; Kuhn, 1962; Johnson et al., 2012; Sparkes et al., 2014).

### **Underlying Beliefs and Philosophy**

It is suggested that to carry out good and effective research, a researcher needs to understand their underlying beliefs and philosophies, and ensure they align to the most appropriate paradigm framework. Therefore, it is critical for a researcher to understand the complex positions of ontology, epistemology, methodology and methods (Kuhn, 1962; Sale et al., 2002; Slevitch, 2011; Lincoln et al., 1985; Johnson et al., 2012; Sparkes et al., 2014).

All scientific paradigms are grounded by ontological assumptions. Ontology can be described as the philosophical study of the nature of reality or things that comprise reality. Ontology can be

referred to as knowing what exists or is said to have existed alongside the different relationships that occur between the objects which exist or existed. Our ontological position forms our process of knowing whether an objective reality exists or not. Moreover, epistemology can be described as the study of knowledge or the theory of the nature of knowledge. According to Guba and Lincoln (1994), epistemology addresses the fundamental question: ‘What is the relationship between the researcher and the known and how can you know reality?’ Epistemology explores the nature and source of legitimate knowledge, and the ability of objectives to possess knowledge (Childers & Hentzi, 1995; Guba et al., 1994; Slevitch, 2011; Sale et al., 2002; Lincoln et al., 1985; Johnson et al., 2012; Sparkes et al., 2014; Creswell, 2003; 2014).

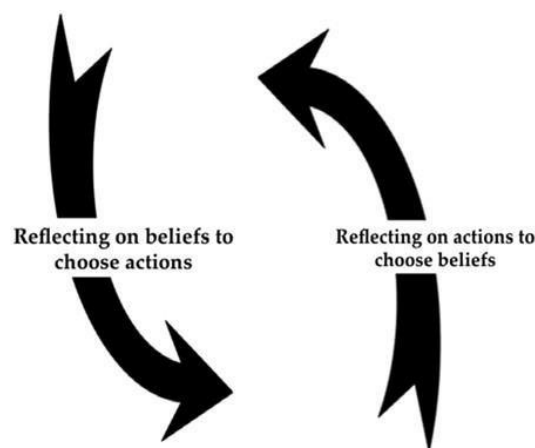
The methodology can be described as the theoretical perspective and philosophical system that structures the way research is conducted. It asks the researcher to consider the approach they use to know something, and how do they go about finding out. Each methodology is based on a particular set of assumptions and theories based upon human nature, society, and reality, what beliefs are important to study, and finally, what establishes authentic knowledge and meaningful data. Each methodology has its own procedures, techniques, or processes that should be employed within the chosen mode of scientific enquiry. However, at times, methodology and methods are implied incorrectly and often interchangeably despite the fact they have two different meanings. Cook and Fonow (1986) define methodology as not simply the specific techniques themselves, but the study of methods. The methodologies determine which methods will be used to collect data. In other words, methods are the research tool that collects the data based upon the ontology (nature of reality) and the epistemology (what knowledge) (Childers & Hentzi, 1995; Guba, 1990; Sale et al., 2002; Guba et al., 1989; Slevitch, 2011; Lincoln et al., 1985; Johnson et al., 2012; Sparkes et al., 2014).

The principles of scientific inquiry denote the key relationship that occurs amongst these complex positions. Our beliefs about reality will determine what we believe as genuine knowledge and how we acquire that knowledge. Therefore, our chosen ontology will define our epistemology, which in turn will outline our methodology, which finally defines our chosen research method (Guba et al., 1994; Slevitch, 2011; Johnson et al., 2012). Positivists and interpretivism have completely different

views of epistemology and ontology. The difference in their beliefs and philosophical stance has led to contentious debates within the social and behavioural sciences (Childers & Hentzi, 1995; Guba, 1990; Sale et al., 2002; Guba et al., 1989; Slevitch, 2011; Lincoln et al., 1985; Johnson et al., 2012; Sparkes et al., 2014).

### **Chosen Paradigm**

Pragmatism is a paradigm philosophy that has been around for many years and was first explored in the early twentieth century in America through the work of William James (1907). James' (1907) pragmatism approach endeavoured to provide practical solutions to contemporary issues which were experienced by people in the real world (Gage, 1989; Howe, 1988; Patton, 1988; Giacobbi, Poczwardowski & Hager, 2005; Morgan, 2013; Grecic & Grundy, 2016). Additionally, the work of John Dewey (1931), whose concept of experience explored what works in human experiences, had a significant influence on the pragmatist paradigm, moving philosophical views away from abstract concerns and more towards the importance of human experience (Morgan, 2013; Dewey, 2008). Dewey (2008) had two inseparable standpoints upon which he built his approach: What are the sources of our beliefs? And what are the meanings of our actions? See figure 4.1 below.



**Figure 4.1.** Dewey's model of experience.

Dewey's model of experience highlights how reflecting on beliefs to choose actions and reflecting on actions to choose beliefs are cyclical, both of which underpin human experiences.

Experiences bring our actions and beliefs together, which in turn create meaning within our practice. Within Dewey's approach, research is a form of inquiry into everyday life and experiences (Morgan, 2014; Dewey, 2008). A further advocate of pragmatism was Rorty (1982), who attempted to find methods or theories which help address practical problems within specific contexts through the concept of different types of knowledge. In turn, the types of knowledge would help individuals within their environment (Rorty, 1982; 1990; 1991; Giacobbi, Poczwardowski & Hager, 2005).

Within social research, the more recent pursuit of pragmatism methods has been formed with the adoption of mixed-method approaches, which has brought the paradigm back into the limelight (Johnson & Onwuegbuzie, 2004; Maxcy, 2003; Biesta, 2010; Hall, 2013; Morgan, 2007; 2013; Pearce, 2012; Tashakkori & Teddlie, 2010). The pragmatism paradigm can be seen as a relatively new philosophical approach in the philosophy of knowledge for social research. The strength of pragmatism to social research is how it appreciates ontology, epistemology, and methodology alongside how it offers a solution of practicality in its research approach irrespective of the application of qualitative, quantitative, or mixed methods (Guba, 1990; Guba & Lincoln, 2005; Lincoln, 2010; Morgan, 2013; Giacobbi et al., 2005; Grecic & Grundy, 2016). Pragmatists consider the nature of the inquiry, the specific context, and the research question more imperative than the philosophical traditions of the chosen method. The chosen method of a pragmatist is one that is deemed most appropriate to answer the specific research question (Howe, 1988; Rorty, 1982; Giacobbi et al., 2005; Creswell, 2003).

As discussed earlier, ontology and epistemology are vital to pragmatism and underpin the philosophical approach (Childers & Hentzi, 1995; Creswell, 1994; Giacobbi et al., 2005). Creswell (2003) highlighted that pragmatism does not align with any one philosophical approach. Where a positivist approach would adopt an objective epistemological view, in contrast, a constructivist or interpretive approach would adopt a subjective epistemological view which would be individualised and context-specific (Lincoln & Guba, 2000). However, a pragmatist approach would argue that a continuum exists between subjective and objective, and the epistemological view would be determined by the research question and the overall aim of the research (Creswell, 2003; Tashakkori & Teddlie, 2010).

Pragmatism is the application of the most appropriate approach to understand the research problem and one which provides the most insights into answering the research question with no allegiance to any alternative paradigm (Creswell, 2003). Pragmatists hold the research question as the central focus and opt for methods and theories that are more useful to them within specific contexts and answer the practical problems through the most appropriate data collection and analysis methods (Giacobbi et al., 2005; Glasgow & Chambers, 2012; Grecic & Grundy, 2016). The fundamental element of pragmatic research is that knowledge construction should be at the forefront of the approach and should offer useful, workable, and practical solutions in an applied research setting.

Glasgow (2013) defined an 'Intelligent Practice' approach, whereby knowledge gained should make an impact upon practice through extracting theory from practice, then applying the newly formed knowledge back into practice (Dewey, 1931; Giacobbi et al., 2005; Grecic & Grundy, 2016; Morgan, 2013; Bryant, 2009).

The pragmatism paradigm does not come without limitation to its research approach and has endured much criticism from several other paradigm philosophies. Both positivist and interpretivist argue against the pragmatic stance, that a continuum exists between objective and subjective perspectives and the nature of the research problem will guide the approach (Creswell, 2003; Tashakkori & Teddlie, 1998; 2003). Moreover, pragmatists have been condemned for considering the research question to be more important in selecting a method rather than the underlying philosophical alignment to a paradigm (Doyle et al. 2009). In addition, further criticism of the pragmatic philosophy is the combination of contrasting approaches (i.e., qualitative, and quantitative methods) to investigate the research problem (Onwuegbuzie et al. 2009).

A final area of contention for pragmatism is the perceived lack of apperception of ontological assumptions, alternatively favouring reality, and the influence of reality on experiences, and its focus on practical solutions to deal with real-life problems (Johnson & Onwuegbuzie 2004; McCready 2010; Morgan, 2007).

The thesis explored what, when and how coaches develop tactical knowledge in their real-life coaching environment through the duration of a professional Level 3 qualification. The series of studies provided a conceptual framework and model (Game Model) to help future coaches develop their tactical knowledge. Therefore, the research philosophy aligned directly with a pragmatic paradigm philosophy, thus the studies within the current thesis adopted a pragmatic research paradigm adopting scientific realism and pragmatism as the ontological and epistemological foundation as highlighted in table 4.1 (Bryant, 2009; Grecic & Grundy, 2016; Giacobbi et al., 2005; Glasgow et al., 2012 Dewey, 2008; James, 1907; Johnson & Onwuegbuzie, 2004).

The thesis aimed to capture as much knowledge as possible about when, how, and what tactical knowledge coaches develop within their ‘real world’ (Lincoln, Lynham, & Guba, 2011). The pragmatic approach allowed the researcher to be driven by the aims and chosen research questions, which allowed the researcher to explore practitioners at work and discover what was working and what required further support in the coaches’ knowledge development.

Table 4.1 highlights the researcher’s approach to collecting data based upon their own ontological and epistemological standpoints. The methodology and methods were selected based on the most appropriate approach in capturing coaches’ knowledge development and answering the specific research questions (Bryant, 2009; Grecic & Grundy, 2016; Giacobbi et al., 2005; Glasgow et al., 2012; Dewey, 2008; James, 1907; Johnson et al., 2004).

**Table 4.1.** Researchers approach to collecting data.

<b>Paradigm</b>	<b>Ontology</b>	<b>Epistemology</b>	<b>Methodology</b>	<b>Method</b>
Pragmatism	Reality can be continually debated and interpreted through extracting theory from practice then applying the newly formed knowledge back into practice	The best method is the one that answers the research question and looks to solve the research problem	Action Research Design-based approach.	Focus groups, object learning, reflective practice, Participant observation, Stimulated recall interviews.



## **Action Research**

Lewin (1944) and Collier (1945) were seen as the first advocates of Action Research, exploring how research could bring about a change in action or action on research. Action Research (AR) is a methodology associated and applied within social sciences that focuses upon the transformative change of practice or the justification and understanding of one's practice through self-reflection. The approach combines critical reflection, practice, and theory to bring about a change or improvement to enhance performance (Carr & Kemmis; 1986; Adelman, 1993; Avison, Lau, Myers, & Nielsen, 1999; Alder & Alder, 1994; McNiff, 2016; 2013).

The ontological stance of action researchers is shaped by the view that people create their own identities and have multiple perspectives on the same situation. In terms of the epistemology of how we understand and acquire knowledge, an AR perspective deems knowledge as something which people create through their own lived experiences. They view knowledge as a continuous learning process of growth through the evolving development of new knowledge (McNiff, 2016; 2013). Action research is an iterative process; to self-reflect upon one's practice involves practitioners and researchers working together on a specific series of events, which includes a diagnosis of a problem, interventions, followed by reflective learning (Denzin & Lincoln, 2000; McNiff, 2016; Avison, 1999).

Action Research allows practitioners in applied settings to overcome obstacles and challenge assumptions within their current practice through drawing on the experiences of participants as researchers to develop their knowledge, which in turn will bring about a change and improvement to practice (McNiff, 2016). As perceived within other similar professions such as nursing, social work and teaching, AR can have a clear benefit to coach educators and coaches when working together in the field to enhance practice (Morgan, 2019). Although several benefits can be drawn from AR, there is still a limited number of papers exploring the benefits of this approach in coaching practice and education (Clements & Morgan, 2015; Chapron & Morgan, 2020).

Even though AR has been applied within a few coaching contexts (see Ahlberg, Mallett, & Tinning, 2008; Clements & Morgan, 2015; Evans & Light, 2007; Chapron & Morgan, 2020), it is still an underutilised field of study. Recent studies have continued to form a theoretical perspective applying theory to practice, rather than allowing the practice to bring about changes in knowledge. The development of new knowledge in practice can therefore generate new theories (Chapron et al., 2020; Holter & Schwartz-Barcott, 1993; Kincheloe, 1991; McKernan, 1991).

The practical approach to AR is beneficial to practitioners and can be empowering as it places the practitioner at the heart of the process. AR allows engagement in critical reflection to develop knowledge and further understanding through learning in- and on-action. The creation of new knowledge concepts is generated through the recurring process of design, data collection, analysis, and reflection upon action, practice, and theory to bring about the change in knowledge (Berg, 2004; Evans & Light 2007; Clements et al., 2015; McNiff, 2016; 2013; Bradbury, 2015; Glanz, 1998; Chapron et al., 2020).

The original aims of the study did not set out for the thesis to become an action research project, however, with the pragmatic paradigms and through meta-reflection and reflexivity, it became apparent that findings from each study had an impact on the author as a coach educator and mentor. The critical reflexive and meta-reflection pause after each study allowed the author to review the impact of practice in his current delivery of coach education. Findings from the studies, alongside several observations carried out through the data collection methods, led the author to arrange several meetings with the other coach educators delivering on the course. The meetings explored findings from the studies and, as a group of educators, explored how they could implement some changes in their practice. Due to the research time frame, several adaptations to practice were applied during the research process to enhance the learners' experiences on the course and impact their knowledge development (McNiff, 2016; Chapron et al., 2020).

## **Methods Overview**

The research question centred on how novice coaches develop their declarative, procedural and conditional tactical knowledge in practice as they transition into intermediate level football coaches. As such, methods that explore the existence, nature and development of knowledge were selected. These methods were from the interpretative approach and included focus groups, object learning, participant observation, reflective practice, systematic observation, stimulated recall interviews and case studies (Bryant, 2009; Grecic et al., 2016; Giacobbi et al., 2005; Glasgow et al., 2012; Dewey, 2008; James, 1907; Chatterji, 2004; Johnson et al., 2004; Dewey, 1931; 2008; Morgan, 2014; Creswell, 2003).

With a pragmatic standpoint and the adaptation of some traditional methods, the researcher felt small-scale pilot studies before each study would serve useful to ensure the chosen methods functioned in practice (Yin, 2010; Locke et al., 2000; van Teijlingen & Hundley, 2002; Prescott & Soeken, 1989). The pilot study allowed the researcher to adjust, revise processes, and reflect on certain approaches to data collection and analysis. Despite the clear benefits of pilot studies to qualitative research, there are limited studies advocating the advantages of the approach (Yin, 2010; Locke et al., 2000; van Teijlingen et al., 2002; Prescott et al., 1989; Beebe, 2007; Padgett, 2008). The detailed approach of each method of data collection and analysis is captured with each of the individual studies themselves, Chapters 5, 6 and 7.

## **Research Quality**

Several authors suggest consistency and rigour are essential aspects for both qualitative and quantitative methods in the pursuit of quality research (Tracey, 2010; Sparkes & Smith, 2014; Noble & Smith 2015). For research to be applied within practical coaching settings, it is essential that the quality of the research is scrutinised (Noble et al., 2015).

Qualitative approaches are frequently open to criticism due to a lack of scientific rigour, a failure to give numerical data to support findings, inadequate justification of the methods adopted across studies, and a lack of transparency in the analysis process. The criteria applied to form a judgement on the quality of research are concepts such as validity, generalisability and reliability. Although these terms are more connected with quantitative research, there is a growing agreement that comparable processes can be applied within qualitative approaches to ensure rigour, credibility and integrity (Sparkes et al., 2014; Noble et al., 2015; Smith & McGannon, 2018; Patton, 2000; Thomas & Nelson, 2001; Rolfe, 2006; Tracey, 2010).

Although there has been much debate as to whether such terms as validity, generalisability and reliability can be applied to evaluate qualitative methods, several authors advocate that these terms may also be applicable in ensuring quality in qualitative methods. Qualitative enquiry has moved towards alternative terminologies such as trustworthiness and authenticity in place of reliability and validity to ensure the quality of the research. Trustworthiness and authenticity take into consideration different realities, interests and perspectives, with findings viewed through different paradigmatic lenses (Long, Johnson, Rigour, 2000; Thomas et al., 2001; Lincoln et al., 1985; 2005; Noble et al., 2015; Patton, 2002).

More recently, terminology such as credibility, generalisability, neutrality, applicability, reflexivity, consistency and truth value has been applied across multiple settings to ensure rigour and quality within the research process (Long et al., 2000; Lincoln et al., 2005; Noble et al., 2015; Berger, 2015; Townsend & Cushion, 2020). Therefore, the next part of the chapter will illustrate how the researcher ensured rigour and quality in the thesis through generalisability, credibility, reflexivity and reflection.

### **Generalisability**

Generalisability is a term more normally associated with quantitative research when discussing the transferability of the data from one study to another of a similar context. Conversely, applicability is a more common term applied within qualitative approaches, which refers to the consideration of whether findings can be applicable in and across similar settings (Noble & Smith

2015; Smith, 2018). However, Smith (2018) offers arguments for the consideration of generalisability within qualitative studies and for sport and exercise science researchers not just to be drawn down the negative path of only associating generalisability as a limitation of studies.

The thesis carried out a comprehensive investigation into a small group of football coaches' tactical knowledge, rather than an extensive group, studying on a Level 3 coaching qualification. The six coaches in the thesis studied the Level 3 qualification across five different County Football Associations (CFA) in the Northwest of England. The marker of quality research is the impact that the findings can have within a chosen field of study or specific context settings (Smith, 2018). The findings from the thesis highlighted some vital areas of practice that required attention to support the coaches' knowledge development. Furthermore, this had a significant impact on the researcher as a coach educator and brought about a change in delivery on the Level 3 course. These findings gave some generalisability across courses in England and may also be comparable with other coach educators as the issues identified were similar across five CFA Level 3 courses based on the coaches within the thesis.

Although the findings could represent a similar cohort studying the same qualification, at the same stage and have the same experience and knowledge, from the researcher's own experiences as a coach educator it would be difficult to draw a definitive conclusion on generalisation (Smith, 2018; Sparkes & Smith, 2014; Chenail 2010). Any Level 3 course across the country may attract coaches with different backgrounds, knowledge, and experiences than the sample within the current thesis. Therefore, the cohort may not accurately represent the characteristics of all groups of coaches undertaking the qualification across the county.

Therefore, some findings may provide evidence towards certain types of generalisation, such as the level of expected tactical knowledge novice and intermediate coaches have at the start of the course, or the tactical knowledge displayed in practice by coaches may allow comparisons to be drawn. Nevertheless, the researcher encourages coach educators, educators, and coaches to reflect

upon the findings across the studies and consider how the conclusions are transferable to their coaching domain to develop tactical knowledge (Smith, 2018; Chenail 2010).

## **Credibility**

A further consideration for the research was around credibility. Credibility has become a common term used when addressing issues such as ‘trustworthiness’ or ‘truth value’ (Noble et al., 2015). A researcher is required to ensure the research process is transparent and assure the reader that what is written is a truly accurate account of what occurred.

Several strategies were employed to ensure the credibility of the findings. Firstly, this chapter explored the researcher's philosophical position on concepts of ontology, epistemology, methodology and methods applied across the thesis to counteract any methodological bias. Furthermore, Chapter 1 discussed the researcher’s personal experiences drawn from coaching practice, coach education and academic background over twenty-four years within the specific context of the study.

Secondly, several strategies were employed to ensure the accounts given throughout the thesis were an accurate interpretation of the coaches’ thoughts, actions and constructions of reality. Firstly, across all studies, rich texts of verbatim were included in the results and discussions to demonstrate the coaches’ views, behaviours and knowledge. The inclusion of a range of coaches’ interpretations, dialogues, and demonstrations from the multiple methods of data collection (focus groups, object learning, participant observation, stimulated recall) give a holistic perspective of each coach in and across studies to examine the comparisons and differences between each of the coaches (Sparkes et al., 2014; Morse, 2002; Slevin, 2002; Nobel et al., 2015). These multiple methods of enquiry are often described as methodological triangulation (Denzin & Lincoln 2000; Patton, 2002).

Further modes of triangulation within the thesis were employed through data triangulation and theory triangulation. Both modes helped form the conceptual framework discussed in Chapter 3, which was designed through a variety of sources (Denzin, 1978). Several authors suggest that a conceptual framework aids the researcher interpret the findings of studies in the systematic study of

particular phenomena in which social theory plays a significant aspect (Salmon, 1992; May, 1993; Leshema et al., 2007). Conceptualisation was integral in the research process as theory informed the decisions and allowed the researcher to make sense of the field of study. The conceptual framework and model encouraged the researcher to be explicit in the research process and inform interpretation and meaning towards the appropriate analysis of the data (Cohen, Lawrence, & Morrison, 2000; Leshema et al., 2007; Salmon, 1992; May, 1993).

Another strategy applied to ensure rigour and trustworthiness was member checking or member reflections and a critical friend (Lincoln & Guba, 1985; Birt, Scott, Cavers, Campbell, & Walter, 2016). Birt et al., (2016) suggested member checking can add credibility to study findings and results. The coaches were sent and asked to review the data transcripts and recordings to validate the truthfulness and that what had been written reflected an accurate account. Furthermore, at certain times within the data analysis, coaches were individually emailed to clarify or expand on specific explanations or demonstrations which required additional clarification. Applying member checking controlled the subjective bias of the researcher in the data analysis process (Birt et al., 2016; Smith & McGannon, 2018; Lincoln et al., 1985).

To further assure rigour, trustworthiness, and credibility a critical friend with over 30 years of experience in the field as a coach and coach educator engaged in the data collection and analysis process (Lincoln et al., 1985; Birt, Scott et al., 2016; Noble et al., 2015). The critical friend provided honest and critical feedback on several stages of the analysis process, checking definitions, observing the coaches' actions, alongside examining the primary and sub-themes of each study, making several minor recommendations.

## **Reflective Practice**

The notion of reflection first appeared in the work of Dewey (1931), an educationalist and advocate of pragmatism. He developed the concept of reflection drawn from experimental learning theories. In addition, Lewin (1951) later suggested a new higher level of knowledge could be developed through reflection, which in turn could reinforce learned behaviour (Ghaye & Lillyman

2000). Moreover, several other influential scholars have described the notion of reflective practice, however, it was not until the work of Schön (1983) that it came to the forefront of many professional practices. Schön (1983) advocated that practitioners should apply reflection when they encounter new circumstances or difficulties, whereby previously learned techniques or theories could not be applied, requiring practitioners to draw on previous knowledge or similar encountered experiences (Ghaye & Lillyman 2000).

Several professions such as nursing, social work, teaching, and the military had all received extensive research into the benefits of reflective practice as opposed to sports coaching, despite sharing several common characteristics (i.e. working with people, varying practical environments and making real-time decisions). However, reflective practice has only come to the forefront of sports coaching literature over the last 25 years (Knowles, Gilbourne, Borrie & Nevill, 2001; Knowles, Borrie & Telfer, 2005; Lee, Chesterfield, Shaw & Ghaye, 2009; Knowles, Tyler, Gilbourne & Eubank, 2006; Taylor & Garratt, 2008; Knowles, Gilbourne, Cropley & Dugdill, 2014; Cropley & Hanton, 2011; Cropley, Miles, & Peel, 2012).

During this period, several authors started to explore how sports coaches develop and learn effective reflective skills. Collins (1998) suggested they require effective cognitive skills which would allow coaches to think critically. Likewise, Saury and Durand (1998) and Knowles and Borrie, (1998) proposed that sports coaches learn from an amalgamation of practice and theory, whilst Cropley et al., (2011) propose that reflective practice is a crucial part of the learning process which allows practitioners to make sense of knowledge-in-action (Knowles et al., 2001; Cropley et al., 2012).

The reflective process enables coaches to improve the quality of their practice and gain an enhanced understanding of the complexity of practice. Through critically evaluating and drawing on past experiences, it allows practitioners to make a more informed decision within and upon practice. Thus, they can identify areas for improving knowledge and facilitate future learning (Lee et al., 2009;



Knowles et al., 2005; 2006; 2014; Cropley & Faull, 2009; Cropley et al., 2011; Cropley et al., 2012; Partington, Cushion, Cope & Harvey, 2015; Partington & Cushion, 2013; Cushion 2018).

The concept of reflective practice was initially introduced to the researcher via studying for an undergraduate coaching science degree. As Knowles et al., (2005; 2006) suggests, knowledge and skills of reflection were acquired from academic studies rather than coach education. Developing efficient and effective reflective skills has had a significant impact on the researcher's practice as a coach, coach educator, and lecturer and now as a researcher. Through becoming a reflective practitioner, it has formed an integral part of continued self-assessment. Critical reflection on practice has led to the development of a greater understanding of capabilities, self-knowledge and a greater self-awareness (Knowles et al., 2006; Culver et al., 2006; Cropley et al., 2011; Knowles, Katz & Gilbourne, 2012).

Critical reflection has facilitated personal growth and development by assessing capabilities and skills against specific criteria or identifying gaps in knowledge. This process has steered the researcher to acquire further qualifications in the form of a UEFA A Licence, PGCE, MA in Sports Coaching and currently a Professional Doctorate. These qualifications have enhanced and supported the development of both professional and craft knowledge, alongside advancing analytical and critical thinking skills to be a more effective practitioner (Lyle, 2002; Knowles., et al, 2005; 2006; 2014 Lee et al., 2009; Cassidy et al., 2008; Partington et al., 2015; 2013; Cushion 2018).

Through the years, several models of reflection (Dewey, 1933; Schön, 1983; John, 1993; Gibbs, 1998; Driscoll, 2007) have had a significant impact on the development of the researcher's reflective skills. Gibb's (1998) 'Reflective Cycle' served well as an undergraduate and novice coach, however, as the researcher's knowledge and skills developed, so did the reflective process. This in turn led to the adoption of Driscoll (2007) process. Driscoll (2007) process has been beneficial to the researcher's development as a lecturer, coach and coach educator. The model has been continually utilised over the last 10 years and continues to serve valuable in the reflective process. The process

facilitated learning across several areas including professional knowledge, pedagogical knowledge, coaching interventions, practice design, mentoring and coaching behaviours.

The three stages of ‘What?’, ‘So What?’ and ‘What Now?’ are worthwhile processes in daily reflections with most aspects justified or solved at the ‘So what?’ stage. However, the critical part of the process for the researcher was the ‘What now?’ This stage in the process could often take several days to solve or justify the initial approach applied to a situation (Driscoll, 2007). Through applying the model in practice, it became apparent that it is imperative to reflect on all experiences, both positive and negative aspects as an experience independent of reflection is not sufficient for learning to take place. Therefore, practitioners need to reflect upon all experiences to bring about a change, reinforce knowledge and consolidate good practice, which can enhance understanding and develop confidence (Lyle, 2002; Knowles et al., 2005; Lee et al., 2009; Cropley et al., 2012).

### **Meta-Reflection**

Meta-reflection is a profound process that can be linked to core reflection, meta-awareness and metacognition. The process involves thinking about one’s reflections and actions at a deeper level to show one’s understanding, learning and development (de Freitas and Neumann, 2009; Korthagen & Vasalos, 2005; Thorpe & Garside, 2017).

Bengtsson (1995) suggests it is vital to break reflection down into stages that support the learning process, moving from descriptive to synthesis level. Bengtsson (1995) classifies four stages of reflection: self-reflection, thinking, reflecting for self-understanding, and distanced self-reflection. Similarly, Samuels and Betts (2007) identify four aspects of reflection: re-examining reflections, having structure, taking accountability, and metacognition (Thorpe & Garside, 2017). Metacognition is the understanding of cognition and the controlling of cognition. It is the awareness and understanding of one’s knowledge and the ability to control and understand one’s cognitive thought processes (Flavell, 1979; Ozturk, 2017; Michalsky, Mevarech, & Haibi, 2009; Veenman, Van HoutWolters & Afflerbach 2006). Meta-reflections can be described as the continuous process of

reflecting, re-examining, metacognition, analysis and synthesis of the applied methods, methodologies, data analysis, actions, professional practice and reflexivity to establish a deeper level of understanding and development of a topic (de Freitas et al., 2009; Korthagen et al., 2005; Thorpe et al., 2017).

As discussed earlier, Driscoll's (2007) three-stage model has served as a valuable process, with the critical part of the process the 'What Now?' This stage in the process required time, deeper levels of reflection, re-examining of reflections and metacognition. During the thesis, there have been numerous times where the researcher has been stuck at the 'What now?' stage but only through critical reflection, metacognition and reflexivity have managed to develop and move forward (Cropley & Faull, 2009; Lee et al., 2009; Knowles et al., 2006; Bengtsson, 1995; Samuels et al., 2007; Thorpe et al., 2017). Throughout the thesis, meta-reflections were applied on numerous occasions and stages within the research process, however, examples of meta-reflections and reflexive pauses are discussed in between the studies. The pauses were a summary of thoughts, feelings, and opinions along the journey and often were a conflict between the researcher as the practitioner and the researcher as the researcher in which reflexivity played an integral part.

Within previous studies and practice, journals were used to write notes to help facilitate learning (John, 2000) and at the start of the thesis, the researcher used a journal coinciding with Driscoll's (2007) process to aid reflections. The process allowed the researcher to write down thoughts and feelings straight after meetings, readings, observations, discussions or after each data collection point. However, nine months into the process, the approach changed and the researcher started making voice notes to record thoughts, as many reflections seemed to happen when driving in the car, out on a bike ride, or in the middle of the night. The best process was to record thoughts and then replay them at a more convenient time. The researcher reflected on both positive and negative aspects of the research, methods and data analysis, and kept formulating new concepts that could be then applied. It has been imperative to link theory and action by reviewing the aim of the thesis alongside continuing to relate how findings can impact practice. The whole reflective process,

supporting voice notes and writings helped the researcher to stay focused on the main aim of the research, which was to explore how coaches develop tactical knowledge and what we can do as educators to aid learners to do to develop tactical knowledge and improve practice (Whitehead, et al., 2016; Kolb, 1984; Lyle, 2002; Knowles., et al, 2005; 2006; 2014 Lee et al., 2009; Cassidy et al., 2008; Partington et al., 2015; Cushion 2018).

## **Reflexivity**

The concept of reflexivity has been firmly rooted in social research for many years and is seen as a fundamental component of its qualitative approach. Despite its popularity within the social sciences, reflexivity takes numerous forms which all have various meanings, types and interpretations, with some scholars suggesting the area is still undefined (Pillow, 2003). The different perspectives of reflexivity in social research are grounded by the different ontology, epistemology and methodological standpoints. Moreover, several scholars suggest that reflexivity can be a challenging concept to put into practice due to the diverse classifications and approaches (Clifford & Marcus, 1986; Geertz, 1987; Denzin & Lincoln, 2011; Foley, 2002; Townsend & Cushion, 2020; Giddens, 1991, Beck & Beck-Gernsheim, 1995; Bauman, 2000).

Within the literature on reflexivity, there are several main schools of thought from a sociological perspective. However, several authors describe reflexivity as the process of how the researcher considers how their own beliefs, values, backgrounds and attitudes influence their interpretations and impact upon their research. Additionally, other scholars view reflexivity as how the researcher writes themselves into the text and then analyses their reflections to try and balance the subjectivity. This reflexivity approach is seen to add value and greater depth to the analysis process and gives meaning to the hidden insight through reflecting upon lived experiences or social and personal connections which enhance ethnographic research (Maton, 2003; Van Maanen 1988; Sparkes, 2002; Berger, 2015; Foley, 2002; Townsend et al., 2020; Kenwaya & McLeod, 2004; Pillow, 2003).

Giddens (1991), Beck and Beck-Gernsheim (1995) and Bauman (2000) were some of the first scholars to describe reflexivity from a contemporary autobiography perspective, exploring it from an ontological categorisation and a modernisation. They disputed that set roles, identities and classifications of society should be removed from outdated parameters through self-monitoring and individualisation. Moreover, post-positivist and critical realists argue that the strength of epistemological reflexivity for producing objective knowledge lies in the importance of the relationship between the knower, the known and the researcher's influence on the research process (Archer, 2010; Maton, 2003; Guba & Lincoln, 2005; Townsend & Cushion, 2020; Berger, 2015; Kenway & McLeod, 2004).

Although self-reflexivity has many strengths and is seen as an important process in social research, it does not come without criticism (Wacquant, 1989; Bourdieu and Wacquant, 1992; Bourdieu, 2003). The work of Bourdieu (2003) is perceived to have had a significant impact on reflexivity from an ethnographic and post-structural epistemology view perspective. Bourdieu (2003) discussed the requirement to practice reflexively in social research where a practitioner would find themselves in a dual role as a sociologist and scholar. Within the current thesis, the author played the role of the researcher and coach educator.

In contrast to other reflexive positions, this sociological method of reflexivity explored the notion of objectivity in research (Wacquant, 2004). It has been suggested that social scientists are required to question their academic position, scrutinising the theory alongside themselves as a researcher and as a practitioner within their context (Bourdieu, 2003). This approach requires ethnographic researchers to be transparent in their methods and ensure integrity and trustworthiness in data collection, analysis and representation of findings as valid claims (Foley, 2002; Bourdieu & Wacquant, 1992). Bourdieu's 'reflexive practice' indicates that practice should be continually analysed from both a theoretical and methodological perspective and practitioners are required to be aware of their personal, practitioner and research biases (Bourdieu, 2003; Bourdieu & Wacquant,

1992; Kenwaya & McLeod, 2004). Furthermore, several scholars such as Alvesson and Skoldberg, (2009) and Howe (2009) have advocated that reflexive practice adds value and should be more broadly applied across ethnographic research (Alvesson & Skoldberg, 2009; Howe, 2009).

Within the current thesis, the researcher felt that two main reflexivity standpoints were imperative for the write-up in the forms of self or personal reflexivity and cross-field reflexivity (Macbeth, 2001; Finlay, 2002; Berger, 2015; Bourdieu & Wacquant, 1992; Thorpe, Barbour and Bruce, 2011; Olive and Thorpe, 2011). Self-reflexivity identifies that the researcher is a key influence and essential to the data collection, interpretation and analysis process (Finlay, 2002; Berger, 2015). Etherington (2007) suggests that personal reflexivity allows the researcher to be visible at any stage within the research and that the researcher is transparent upon how their values and beliefs influence the research process.

Reflexivity allowed the researcher to add in their personal experiences and knowledge to support the data and provide a theoretical standpoint which shaped the methodological approaches and formed a vital part of the write-up process. It allowed the researcher to add context and meaning for the reader as in some parts within the data what the participants were explaining or demonstrating did not give full explanations, meaning the context could be lost. The approach at certain times became important when emphasising the different types of knowledge displayed within the practical settings and observations (Van Maanen 2011). The researcher's background in the field is discussed in Chapter 1.

At times, this process became challenging as not only did the study explore how what and when coaches develop knowledge, but it also looked at the researcher as a practitioner and educator. The findings throughout the studies brought about adaptations and changes to practices. Therefore, in order not to shift the balance within the thesis, a reflexive engagement approach was employed.

Within self-reflexivity, it is fundamental that the research focus does not shift too much upon the researcher and away from the participants, although writing in self-awareness enhances the research process (Finlay, 2002). Finlay (2002) described a reflexive engagement as a process that does not

overpower the findings of the research but gives the reader some accounts of what the researcher was thinking in their approach.

The second approach to reflexivity within the thesis drew upon cross-field reflexivity, which was influenced by Bourdieu's reflexive practice (Thorpe, Barbour and Bruce, 2011; Olive and Thorpe, 2011). The fields can be described as the social space or context in which the researcher finds themselves and the objective relationship between the researcher and the practitioner. Within the current thesis, the author can be identified as having many roles such as a researcher, coach educator, and mentor (Bourdieu & Wacquant, 1992; Thorpe et al., 2011; Townsend et al., 2020). It was vital that at different stages of the data collection the researcher stayed objective and formed the sole role of the researcher. Findings from the data collection enabled the author to examine themselves through the lens of a coach educator by reviewing practice through the action research approach, and secondly as a mentor to support the coaches with their development.

Although some authors highlight the significance of reflexivity or reflexive practice in ethnographic investigations, there is still a lack of literature and supporting research demonstrating how reflexivity can be applied in practice as a theoretical approach to enhance the research process (Berger, 2015; Townsend & Cushion, 2020). It was not until Townsend and Cushion (2020) applied Bourdieu's reflexive practice as a framework to show how sports coaching research could adopt a more relevant and critical approach to examine self-awareness within ethnographic research (Powis, 2018; Townsend et al., 2020). Townsend et al., (2020) highlighted how one of the authors was embedded within the coaching context as well as the research and how the author moved between the roles. Moreover, within the present thesis, the researcher crossed fields to a coach educator and then a mentor. The reflexive cross-field process balanced and restored any conflicts between the researcher as the coach educator and as the researcher himself, which enhanced self-awareness in both fields. This process within ethnography helps bring about authenticity and strikes a balance between objectivity and subjectivity through reflexive practice on the theory, researcher and practice (Thorpe, 2009; McNay, 1999; Wacquant, 2004; Olive & Thorpe, 2011).

Within the current study, the researcher positioned the 3 reflexive accounts within the meta reflection sections at the end of each study. Each engagement was a combination of thoughts, feelings and analysis from one specific moment in time and allowed the researcher to track changes across time and act as checkpoints within the research process. Furthermore, it allowed for self-critical reflection and made the researcher more aware of himself. It allowed the researcher to continue to refine his ontology, epistemology, methodology and methods in line with the main aim of the research, which was to focus on bringing about change in practice and applying methodologies and methods that would support findings and change rather than be shackled by paradigm standpoints.



## **Chapter 5 (Study 1): An Investigation into the baseline tactical knowledge of Level 2 coaches at the start of their Level 3 journey.**

### **Introduction**

The literature review (Chapter 2) and the conceptual framework (Chapter 3) both illustrated several significant concepts which form sport-specific tactical knowledge. The tactical concepts can be defined as; the moments of the game, the principles of play, playing styles, systems of play, strategies and tactics. The importance of developing extensive tactical knowledge is considered an important characteristic for coaches on their journey from novice, intermediate to elite. However, the majority of studies in the field have explored the novice vs expert paradigm. Furthermore, there is a lack of research upon the concepts of tactical knowledge (Galanter et al., 2005; Lyle, 2005; Vergeer et al., 2009; Kaya, 2014; Stoszkowska et al., 2015; Stodter et al., 2017; Walker et al., 2019).

Moreover, football coaches studying a Level 3 coaching course often come from diverse backgrounds with an array of coaching and educational experiences. Hence, the study explored the differential levels of tactical knowledge and understanding at the beginning of the course. To obtain pre-course baseline insights on the coaches' level of tactical knowledge would be advantageous for coach educators. It would enable learning to be planned around the needs of the coaches, rather than presume that coaches begin courses with the same level of knowledge and experience, without consideration of the different coaching and educational experiences.

The best way to gain a true reflection of coaches' pre-course baseline tactical knowledge is to assess and analyse the coaches' knowledge at the start of the Level 3 course. Therefore, the study explored a group of 6 football coaches' tactical declarative (what to do) and procedural (how to do it) knowledge through focus groups and an object learning pedagogical approach (Chatterjee & Hannan 2015; Nash et al., 2006; Price et al., 2019; 2020; Hewitt et al., 2016; DelgadoBordonau et al., 2016; Grehaigne et al., 2005; Pill, 2014; Stodter et al., 2017; 2020; Chesterfield et al., 2010; Piggott, 2012; Vella et al., 2013).

## **Method**

### *Participant Selection*

Previous research on coaching knowledge has used a combination of several criteria to select participants such as the number of years in coaching, playing level (i.e. professional, semi-professional or amateur) and qualifications held (Côté et al., 1995b; Saury & Durand, 1998).

The coaches were selected based on the following criteria: a minimum of 4 years coaching experience, applied to study the Level 3 course during the 2018/19 season and coaching players (youth or adults) aged 11 or older in 9 vs 9 or 11 vs 11 formats of the game. Table 5.1 below displays the coaches' profiles.

The participants selected for the present study are six male youth football coaches as no females contacted responded to the invitation. The mean age of the coaches was 30.16 years with the youngest coach aged 22 and the oldest coach aged 41. The mean number of years of coaching was 7.33. Mark had the least number of years coaching and Roy had the greatest number of years coaching. The mean number of playing years was 13.16 with both Kenny and David having the least years of playing experience. Both Harry and Mark had the highest number of years of playing experience. The mean number of coaching hours per week was 4.58 with Roy coaching the most hours per week and Kenny coaching the least number of hours per week.

Ethical approval for this study was granted by Liverpool John Moores University Research Ethics Committee in January 2019 reference number **19/SPS/003**. Participants were informed of the procedures employed before providing written consent before participation and relative gatekeepers were informed and permission granted.

**Table 5.1.** Coach Profiles

<b>Age</b>	23	41	33	39	22	23	181	30.16
<b>No. of years coaching</b>	6	10	12	7	5	6	44	7.33
<b>Coaching hours per week</b>	4	3	6.5	2.5	5.5	6	27.5	4.58
<b>No. year playing</b>	17	13	12	10	17	10	79	13.16
<b>Other Coaching Qualifications</b>	FA Youth Award module 1 & 2, Futsal level 1, Prozone 1-3, FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, Basketball & Handball level 1 FA level 1 & 2	Futsal Level 1, Handball Level 1 and a Tennis qualification FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, Prozone 1-3, FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, Prozone 1-3, FA level 1 & 2		
<b>University degree</b>	BSc coaching degree, currently studying an MSc in Football Coaching	BSc in Coaching and Sports Performance.	BSc coaching degree, currently studying an MSc in Football Coaching	None	BSc coaching degree, currently studying an MSc in Football Coaching	BSc coaching degree, currently studying an MSc in Football Coaching		

### *Data Collection*

Focus groups were employed as the primary method of data collection to explore the baseline tactical knowledge of coaches at the start of the Level 3 course during the 2018/19 football season. The use of focus groups has become an increasingly accepted alternative to traditional one-to-one interviews within the qualitative research paradigm (Heary & Hennessy, 2002; 2006; Krueger & Casey, 2009; 2015; Barbour, 2008; Krueger, 1994; Pehrson & Stambulova, 2017). Focus groups have provided a new entity of enquiry for exploring and investigating participants' perspectives, rationales behind people's thoughts, knowledge, and behaviours towards the specific phenomenon. Literature suggests that focus groups are an effective methodology to allow researchers to discover the ideas and opinions of homogeneous groups (Krueger, 1994; Heary et al., 2002; 2006; Krueger et al., 2006; 2015).

Research suggests the optimum number for a focus group is six to eight participants, however, within the current study each focus group consisted of two participants. More than two subjects could lead to a loss in contextual meaning as it would not replicate the football coaching context, with two coaches competing against each other, trying to plot and exploit each other teams' weaknesses. Two participants permitted the coaches to interact with each other around the questions posed, allowing more comprehensive exploration of the coaches' tactical declarative and procedural knowledge. The main advantage of using focus groups was that it allowed the subjects to interact with each other around the questions posed. The approach stimulated and developed ideas, and permitted for a deeper level of critical discussion, allowing richer information to be gathered by the researcher around coaches' tactical knowledge. Moreover, it allowed the participants to question and challenge each other's perceptions and assumptions and generated a greater range of responses (Lewis, 1992; Heary et al., 2002; Hennink et al., 2011; Kvale, 1996; Gratton et al., 2004; Krueger et al., 2015; Pehrson et al., 2017).

Within the focus groups, a pedagogical approach called object-based learning was employed, an approach becoming increasingly used by academics in teaching and learning (Chatterjee & Hannan 2015). The pedagogical approach engaged learners and energised learning and teaching through the

use of objects. The objects were employed in several ways to enhance and draw out information and facilitate participants' observational skills and tactical knowledge. A Subbuteo set was used as the key object to allow the subjects to demonstrate their knowledge and understanding around questions posed within the focus group (figure 5.1).



**Figure 5.1.** Object Learning approach, Subbuteo figures and pitch.

Each participant had 11 Subbuteo players to display their system of play, strategies and tactics. It allowed them to demonstrate their application of tactical knowledge. The Subbuteo figures assisted the coaches to learn alongside further developing their knowledge via observing and engaging with each other's tactical setup (Reading, 2008; Chatterjee, 2010).

For the focus groups, a semi-structured discussion guide (see Appendix 11.1 p.255) was developed and employed by the moderator (the researcher) to guide discussions and ensure key topics of enquiry are covered (Krueger et al., 2000; 2015; Barbour, 2008; Heary et al., 2002; Hennink et al., 2011). The discussion guide, although structured in its design and approach to ask the participants key questions in a logical order, also allowed for passages of unstructured questioning and flexibility when required. The researcher's role in the process was to facilitate and guide the discussion, acting as a moderator and ensuring subjects remained focused on the topics to be covered. The role involved interacting with coaches while probing both cognitive responses and Subbuteo figure demonstrations (Gratton et al., 2004; Hennink et al., 2011; Krueger et al., 2000; 2006; 2015). The moderator was required to be more flexible at certain points to allow the discussion to flow and take a natural course, capturing a greater depth of enquiry around specific topics. The moderator's skill was to develop relevant questions during the focus group process itself. The focus groups were influential in

assessing individual coaches' perceptions and analysing their current tactical knowledge. The focus group started with questions around the coaches' background and development before progressing onto their understanding of the moments of the game, principles of play, styles of play, systems of play, strategies and tactics.

To gather and analyse information, the researcher required a means to collect the information. The use of a Dictaphone or digital video camera are two effective methods to obtain data as the whole focus group can be recorded and replayed to draw out significant points and themes. Within the study, data was collected through the use of a digital video camera (Panasonic HC-V770) to record the focus groups and to film the participants use of the Subbuteo pitch and figures to support the participants, facilitating them to demonstrate their explanations (Gratton et al., 2004; Krueger et al., 2006; 2015; Barbour, 2008; Heary et al., 2002).

Another vital means of collecting data during the focus group process was through making field notes. Field notes formed an essential activity for the researcher as they allowed the researcher to write down their thoughts, observations and reactions to situations that occurred during the focus groups. Incorporating reflective practice within the writing of field notes facilitated a greater understanding, which allowed the observer to review and study their notes and observations at different points in time, and aided the analysis processes (Ghaye & Lillyman, 2000; Hammersley & Atkinson, 1995; Kvale, 1996).

#### *Data Analysis*

Verbal data was transcribed verbatim producing separate transcripts for each of the focus groups. Due to the nature of the focus group, the researcher had to transcribe word-for-word each coach's explanation, followed by describing in certain sections what each coach had demonstrated through the Subbuteo figures, incorporating reflexive standpoint (see Chapter 4) (Chatterjee et al., 2015; Bourdieu et al., 1992; Berger, 2015). Primary screening was undertaken to remove references to the coaches and, to protect their identity thus for the study, key pseudonyms have been used for each coach (Lincoln et al., 1985; Patton, 1990; Sparkes et al., 2014).

The analysis of the focus groups went through several stages. Firstly, to generate familiarity with the data, the researcher read through the focus group transcripts on several occasions, making notes on some of the key themes. The researcher then employed a deductive approach using predetermined headings identified from the literature, the conceptual model and framework. The approach was useful to categorise themes under specific headings, and each theme was colour-coded within the focus group transcripts, creating links across the focus groups to the questions posed by the researcher. The same questions were asked across all focus groups, however, the order of questions varied slightly depending upon how the discussions flowed (Burnard et al., 2008; Sparkes et al., 2014).

Once primary themes were created the data required further coding to create sub-themes within each category. The researcher allowed the data to drive the structure of the analysis sections, highlighting key categories that emerged through the inductive thematic content analysis (Tables 5.2) (Braun et al., 2006; Sparkes et al., 2014). The content analysis led to the re-categorising and order of some primary themes through the creation of emerging sub-themes. This process continued until all links had been identified. Table 5.2 displays meaningful keywords taken from the extracted quotes linked to relevant sub-themes (Patton, 1990; Braun et al., 2006; Burnard et al., 2008; Sparkes et al., 2014).

To assure validity and trustworthiness, several quality checks took place (i.e. triangulation, member checking, critical friend). A critical friend with over 30 years of experience in the field as a coach and coach educator engaged in the final stage of the analysis process and examined the primary and sub-themes, making some minor recommendations. Furthermore, each coach was sent a copy of their interview transcripts for member checking, to check what the researcher had transcribed was an accurate account (see Chapter 4 for further detail) (Patton, 1990; Braun et al., 2006; Sparkes et al., 2014; Van der Mars, 1989).

## Results and Discussion

The analysis of data in table 5.2 is presented as six primary higher-order themes, structured from the conceptual model and framework, with lower-order themes with examples.

**Table 5.2.** Higher-order themes, lower-order themes and examples from the data.

Higher-order theme	Lower order theme	Examples
Tactical Knowledge	Development of Knowledge	<i>Courses, CPD, watching the game, other coaches, coaching experience, playing experience, reading Game understanding, principles of play, playing styles, formations, in possession, out of possession.</i>
Moments of the Game	Four Moments	<i>In possession, out of possession, transition to defend, transition to attack</i>
Principles of Play	Attacking Principles	<i>Creativity, exploit space, create space, stretch the play – height and width, score goals, create chances to score goals</i>
	Defending Principles	<i>Delay, defend, deny space, deflect, pressure, cover, restrict space, play narrow Stay compact</i>
Styles of Play	Attacking Styles	
	Defending Styles	<i>Possession-based, counter-attack, direct, playing long, over the top, play out from the back, play through the thirds, get the ball out wide, Northern European style, playing forward quickly Solid well organised, high block, deep block, organised and aggressive, high press Different styles, players' strengths, playing experience, opposition style and tactics.</i>
	Mixed style of play	
System of Play	Units	<i>Defending units, attacking units, defensive, midfield, forwards, working units, primary unit,</i>
	In Possession Out of Possession	<i>Secondary unit, horizontal units, the primary player 4-3-3, 4-2-4, 4-1-5, 4-2-3-1, 2-3-2-3 4-3-3, 4-1-4-1, 4-5-1,4-4-2</i>
Strategies and Tactics	In Possession / Out of Possession	<i>Principles of play, playing styles, systems, in possession out of possession.</i>

In the following sections, each primary theme with exemplary quotes is presented to facilitate a deeper understanding of the investigated area.

### *Tactical Knowledge*

All the coaches demonstrated some tactical declarative knowledge when questioned. They highlighted their perception of tactical knowledge and identified some fundamental concepts that underpin tactical knowledge (see Table 5.2). Furthermore, they demonstrated some procedural tactical knowledge of several concepts when demonstrating their teams' strategies and tactics.



When questioned on how they developed tactical knowledge, coaches across the board give similar responses in terms of their sources of knowledge:

*“Going on all courses obviously helps and watching games helps. I just think the more you’re involved in coaching football, watching football, reading about football, especially watching other games apart from your own team, you just pick up things.”*

**Kenny**

*“Through watching games, lots of games, listening to talks from coaches, University and the UEFA B licence. Just trying to absorb as much information as we can and try to put that into practice. It’s alright just listening and reading, but by putting it into practice I think it helps us learn much more”.* **David**

The examples from Kenny and David highlighted several key factors which supported their knowledge development such as qualifications (i.e. university courses and coach education), playing experiences, learning from other coaches, observing games (i.e. live, on television) and social media. In addition, all coaches highlighted that applying what they had learned on the course or from observations in practice had the most significant impact upon their tactical knowledge development. The findings align with previous research upon coaches learning behaviour, with knowledge sourced and developed through a multifaceted combination of different experiences (Piggott, 2013; Werthner et al., 2009; Stodter et al., 2017; Walker et al., 2018; Deek et al., 2013; Søvik et al., 2017; Cushion, 2011; Culver et al., 2006; Trudel et al., 2004).

#### *Moments of the Game*

When directly questioned, none of the coaches could identify the specific moments of the game, which showed a lack of declarative knowledge. Several coaches had a misconception of the moments of the game, discussing other tactical concepts instead: *“The principles of play are obviously attacking, transition to defend, defending, and transition to attack”.* **David**

Conversely, when discussing other concepts, three coaches were able to define the moments of the game, demonstrating some procedural knowledge. Although coaches revealed some procedural knowledge they did not associate their explanations to the different moments, revealing a lack of declarative knowledge. The moments of the game are a significant tactical concept of invasion games such as football and are fundamental for a coach to understand to develop their tactical knowledge.

The moments of the game are considered to be broken down into four moments: in possession, out of possession, exploit the counter-attack (Transition) and defend the counter-attack. In addition, Hewitt et al., (2016) added set pieces as the fifth moment for consideration. Furthermore, several contemporary theories suggest that football tactics and strategies should be learned and built around the moments of the game. Therefore, it is imperative for coaches to develop moments of the game knowledge, and until they develop this declarative and procedural knowledge, they may find it challenging to advance knowledge across other tactical concepts (Wade, 1967; 1996; The FA, 2016; Martins, 2003; Frade, 2004; Gaiteiro, 2006; Delgado-Bordonau et al., 2012, 2018; Tamarit, 2015; Tee et al., 2018; Hewitt et al., 2016).

### *The Principles of Play*

When questioned, findings showed that coaches were unable to identify all the attacking and defending principles. Furthermore, some coaches described other concepts of tactical knowledge rather than the principles of play. However, all coaches illustrated some procedural knowledge of the principles of play when explaining specific strategies and tactics, yet, often applied different terminology (Wade, 1967; 1996; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016).

All coaches demonstrated procedural attacking principles knowledge in the application through the object learning, and were able to describe at least one key principle or use similar terminology showing some declarative knowledge:

*“Creativity would be an attacking principle”.* **Harry**

*“Attacking: things like exploiting space, creativity”.* **Mark**

*“Principles of play attacking wise is to create space, stretch the play with some height and width and also having a bit of security at the same time”.* **Steven**

The main attacking principle highlighted by the coaches was creating space. Furthermore, the coaches were able to demonstrate how they employed the attacking principles in practice through the use of Subbuteo figures displaying attacking principles procedural knowledge.



**Figure 5.2.** Example of the red team applying the attacking principles of play.

Figure 5.2 displays Steven employing attacking principles of play procedural knowledge by strategically positioning the players in locations that could create, maintain, and exploit space. Similarly, all coaches demonstrated procedural knowledge of creating space and support play principles when using the Subbuteo figures (Wade, 1967; 1996; Hewitt et al., 2016; Fernandez Navarro et al., 2016; The FA, 2016).

In terms of defending principles, all coaches revealed some understanding. However, not all coaches were able to describe the defending principles, the terminology used implied attempting to stop the opposition from moving forwards with the ball towards the goal alongside preventing the threat of a goal-scoring opportunity. Two coaches revealed more advanced knowledge of the defending principles than others when questioned:

*“Defending principles of delay, defend and deny. Deny the space and stuff. Delay an opponent. Deflect a shot. Basically everything you can to stop them scoring a goal”.*

**Mark**

*“From a defensive point of view, you’re looking to deny space and restrict space all the time giving the opposition less chance to play. Obviously, that’s going to give you a better chance to hopefully win the ball back”.* **Roy**

Mark and Roy did not use the exact terminology, however, both were able to articulate several aspects associated with the defending principles, revealing their declarative knowledge. In addition, both illustrated procedural knowledge of the defending principles in practice through their demonstrations with the Subbuteo figures. Mark and Roy studied the same undergraduate degree and were both studying the same postgraduate course, however, despite their similarity in the defensive principles declarative and procedural knowledge, Mark had not been selected for the Level 3 course even though overall he displayed the most advanced principles of play knowledge (Wade, 1967; 1996; Nash et al., 2006; Price et al., 2019).

Equally, the other four coaches illustrated their procedural knowledge of the defending principles when demonstrating how to defend specific situations. Figure 5.3 displays how Kenny set up his team to defend (in blue) when the opposition was on the attack.



**Figure 5.3.** Example of the blue demonstrating the defending principles of play.

Kenny displayed his defending principles procedural knowledge in action through how the team were set up to defend the situation. Furthermore, through his chosen tactics: *“I would just have*

*one trying to pressure him. I would let them have it there because to me there is no danger*". [He placed his Striker on the edge of the box, splitting the two central defenders from the opposition and then moving his midfield unit up the pitch.]. He demonstrated how to restrict the attacking team's time on the ball and how to apply defensive pressure to limit the attacking team's passing options. This example was common for all coaches, who demonstrated defending principles procedural knowledge when explaining how they would defend (Wade, 1967; Bangsbo et al., 2002; Costa et al., 2009; Piltz et al., 2013; Clemente et al., 2014).

Findings suggest some coaches developed principles of play procedural knowledge but not necessarily established declarative knowledge. They were able to display procedural knowledge of the principles of play when demonstrating specific strategies and tactics associated with their style and system of play but were unable to identify when questioned (Nash et al., 2006; Price et al., 2019; 2020). The principles of play are a significant focus on the Level 2 course and form a key part of the assessment criteria. Moreover, coaches should have developed competent principles of play declarative and procedural knowledge before qualifying. Principles of play are fundamental to tactical knowledge development, therefore coaches are required to develop principles of play declarative and procedural knowledge associated with each moment of the game. Not developing sufficient knowledge and understanding of the principles will impact the knowledge development of other tactical concepts and areas of coaching practice (Wade, 1967; 1996; Lago-Ballesteros et al., 2010; Tenga et al., 2011; Ward et al., 2011; The FA, 2016; Nash et al., 2006; Price et al., 2019; 2020).

### *Styles of Play*

All but one coach stated they had a definitive style of play, which they looked to employ in practice. The most popular style of play amongst the coaches was possession-based, however, one coach highlighted how they used a range of styles dependent upon the situation. Furthermore, one coach discussed both an in and out of possession style of play (Bate, 1988; Redwood-Brown, 2008; Ruiz-Ruiz et al., 2013; Tenga et al., 2010; Travassos et al., 2013; Hewitt et al., 2016; FernandezNavarro et al., 2018; The FA, 2016).

Steven's preferred style of play was possession-based, playing out from the back, through the thirds to build an attack. He showed a style of play declarative knowledge by explaining how and why he wanted to play this way. In addition, he was able to demonstrate how he would employ his style of play, linking his style of play with his preferred system. Furthermore, he demonstrated an alternative style dependent on the opposition approach: *"It depends on the style and the tactics used by the opposition. If they are playing a high press and we are trying to play out, sometimes if it's not on playing it short, can we play long and try and beat that press? So recognising the opposition's tactics [is important]. Are they playing a high press? If so, can we adapt? And also if sometimes they change their tactics and formation, we may have to change ours as well"*.

Steven highlighted how the team would adapt their style depending on the opposition's tactics, revealing his playing styles declarative and procedural knowledge. In addition, he emphasised the biggest challenge to implementing a style of play was the fact he was only an assistant coach. Although he had some input into the team's style of play, it was ultimately the head coach's decision.

Harry, when questioned, suggested he had a definitive style of play, which was possession based:

*"I would say my style of play is more possession-based. I like to have the ball, keep the ball, frustrate the opposition as much as I can, using the ball but then when we get into the final 3rd can we be creative, inventive to then look for opportunities?"*

His description highlighted how he wanted to play out, being patient in the approach and playing into the midfield at the appropriate time, even when under pressure from the opposition he wanted to play this way. Harry, appeared to display a possession-based style of play, which he developed based upon his own positive experiences of playing a possession-based approach. However, later on, when discussing tactics, Harry stated it would be advantageous for players to understand different approaches and styles. Despite him recognising coaches may be required to adapt their style of play or strategy depending on the situation, he had not managed to associate this with his approach. This illustrated some underpinning styles of play declarative knowledge but a lack of procedural knowledge in practice.

Roy preferred a possession-based style of play and similar to Harry, his approach was based on his playing experience. However, his approach derived from negative playing experiences of playing a direct style, which has reinforced his possession-based approach. He exhibited style of play declarative knowledge by explaining how and why he wanted to play this way. In addition, he was able to demonstrate how he would employ his style of play, linking his style with his preferred system, illustrating styles of play procedural knowledge.

David displayed his declarative knowledge, acknowledging several different styles within the game. He did not define a distinct style, however, he wanted to play a mixed style of play. A possession-based style that looked to draw the opposition in to exploit the space created behind. David emphasised the style of play was based upon the current group of players' characteristics and he wanted to utilise the players' key attributes and strengths in how they play and align with an appropriate style. Furthermore, David exhibited his knowledge on how styles may change depending on the situation; *"The best thing about what we talked about is that the goalkeeper has a huge kick, so we said to him: 'Every game first few goal kicks look to play short if you can. Let's see if they come and press us. If they do just do that, he can kick well over the halfway line easily. The wingers are quick so if he can kick the ball over the top, then we are through on goal". I don't have a problem with that. It's entirely up to him. Whichever situation he sees fit, go for it"*.

The quote once more highlighted his advanced knowledge of styles of play. He recognised that if the opposition chose to defend high and press, there would be space behind their defenders, so he encouraged the players to play a more direct approach depending (Bate, 1988; Redwood-Brown, 2008; Ruiz-Ruiz et al., 2013; Tenga et al., 2010; Travassos et al., 2013; Hewitt et al., 2016; The FA, 2016 Fernandez-Navarro et al., 2016).

When questioned, Kenny displayed some style of play declarative knowledge: *"My preferred style of play is the Northern European style: fast, organised attacks" Defensively, they are solid and well-organised. Attacking, they get numbers forward in quick, fast, direct attacks. The team is organised and aggressive, with each player knowing their role"*.

In contrast to other coaches, his style of play was based on out of possession organised defence first, then a more direct approach in possession, attacking quickly in numbers. His approach was influenced by the number of goals the team conceded last season, so his main objective was to concede fewer goals and make the team difficult to beat. However, when illustrating his defensive style of play, he did not state a preferred defensive style. The explanation provided illustrated a mid-block in the middle third of the pitch, but he did not state this was his approach. This showed his procedural knowledge of defending styles without clear declarative knowledge.

Mark did not define a preferred style of play when questioned. He acknowledged and describe several styles, highlighting that he was not fixed to a particular style: *“It’s difficult because it changes depending on who, what team it is, who we’ve got, the situations, external factors you can’t really help, but I would say honestly it’s ever-changing. I couldn’t say I have a particular style of play”*.

Mark’s approach is based on both his playing and coaching experiences, suggesting several factors that led him to not have one preferred style of play. He felt that different contexts required different styles, displaying his declarative knowledge of styles of play. He suggested playing styles should be aligned with the strengths of his players. Furthermore, he emphasised how he coached a range of different styles to accommodate the player’s needs, alongside giving them the knowledge to adjust to playing different styles depending upon the game situation such as the opposition tactics or game state. In addition, he was able to demonstrate how he would employ a style of play, linking the style with his preferred system, revealing his procedural knowledge (Bate, 1988; Redwood-Brown, 2008; Ruiz-Ruiz et al., 2013; Tenga et al., 2010; Travassos et al., 2013; Hewitt et al., 2016; The FA, 2016 Fernandez-Navarro et al., 2016).

David and Mark also demonstrated more advanced tactical knowledge around their chosen style. Both justified their styles of play explaining how it was based around the needs and strengths of their current group of players, highlighting declarative and procedural knowledge of styles of play. As research suggests, coaches require the knowledge to be aware of how styles may need to be flexible in their approach across all levels of the game, with too many variables and degrees of freedom in



football to suggest a definitive style of play will guarantee success (Prince et al., 2020). Moreover, research suggests that for an increased chance of success, an effective style of play employed by a coach enhances the player characteristics, strengths of the team and considers several other game variables (i.e. context, score-line, time left in the game, opposition) (Reep et al., 1968; Tenga et al., 2003; 2010; Hughes et al., 2005a; Lago, 2009; Fernandez-Navarro et al., 2016; Gréhaigne et al., 1997; Garganta, 2009).

### *Systems of Play*

The preferred system of play amongst the coaches was 4-2-3-1. Other favoured systems were 1-4-3-3, 1-4-1-4-1, 1-4-5-1 and 1-3-5-2. The systems employed were similar to the systems adopted by English Premier League teams during the 2018-19 season. During the focus group, coaches also referred to additional systems such as 1-4-4-2, 1-3-4-3, 1-4-1-5 and 1-4-2-4 (Bialkowski et al., 2016; Wilson, 2010; Optasportspro, 2019; Memmert et al., 2019).

When questioned upon the different system units, the coaches were able to identify and describe the different units as:

*“You have got your defensive unit, midfield unit and your strikers so obviously you want them to work as a unit”.* **Roy**

*“Yes, my understanding of the units is you’re either working in pairs or working in banks if someone was playing a 4-4-2, 4 defenders 4 midfield players 2 attackers. You have got 3 different lines there”.* **Steven**

Four of the coaches demonstrated their understanding when discussing defensive, midfield and attacking units, alongside primary and secondary units. Three coaches further highlighted how training sessions are often focused on specific units and players, revealing declarative knowledge of the concept. Furthermore, coaches described how units could also exist from both a vertical and horizontal perspective across the pitch. The other three coaches revealed their knowledge of working with units in practice, however, without using the correct terminology.

When questioned, three coaches discussed their system of play from an in possession perspective. Figure 5.4 example below illustrates how each coach set up and demonstrated their chosen system, with all set up to replicate the kick-off.



**Figure 5.4.** System of Play in possession from the kick-off.

The three coaches demonstrated underpinning declarative knowledge around their chosen system and also awareness of the players' roles and responsibilities. For example, Harry demonstrated knowledge about his preferred system: *"I like 4-2-3-1, I think. As I said previously, I have not had many opportunities to play that formation due to the nature of those players that I've got"*.

Due to the coaching context, ability level and the characteristics of the players coached, he changed the system to 1-4-3-3 instead of his favoured 1-4-2-3-1. He was able to recognise the importance of players' characteristics and strengths rather than trying to make players fit a system imposed on them. This illustrated his declarative and procedural knowledge of the system of play. Moreover, when coaches were asked to demonstrate their system of play in different areas of the pitch, how the players were positioned did not replicate the chosen systems. Roy positioned the players on the pitch that represented a 1-3-3-4 rather than 1-3-5-2. Equally, figure 5.4 shows Steven's system to play out from the back. Once more how the players are positioned characterised a 1-2-4-3-1 rather than his preferred 1-4-2-3-1. This trend was also displayed by Harry with him setting up a different system to the one discussed.



**Figure 5.5.** System of play in possession: The red team playing out from the back.

The examples revealed, that all three coaches (Roy, Steven and Harry) were unable to detect how the system changed across the moments of the game and in different phases of the game. They all referenced a static fixed system rather than how it appeared on the pitch illustrating a lack of systems of play declarative and procedural knowledge (Wu et al., 2019; Machado et al., 2017; MüllerBudack et al., 2019; Bialkowski et al., 2016; Wilson, 2010; Bangsbo et al., 2000; Memmert et al., 2019).

Two coaches discussed their system of play from an out of possession perspective. Mark set up his system from kick-off (red team) shown in figure 5.6 in his preferred 4-3-3 stating: *“My favourite formation is ever-changing but at the moment 4-3-3. That’s how I have set up, maybe not your traditional wide players. I like it quite tight and compact in here so back 4, 1 sitting in front, 2 in front and then a 3 quite wide and expansive”*.



**Figure 5.6.** System of Play out of possession.

Mark, similar to the other coaches, demonstrated reasonable underpinning knowledge around his chosen system and awareness of the players' roles and responsibilities within the system. He highlighted and justified why the 3 strikers would stay high and not come back and defend, displaying his system of play declarative and procedural knowledge.

Likewise, David's preferred system of play was 1-4-1-4-1 and he also justified why he preferred this system: *"We play 4-1-4-1. The beauty of 4-1-4-1 always seems to be that you can be sort of pretty solid without the ball, then your backline can stay compact and shift from side to side"*. Once again, this revealed a good understanding of the roles and responsibilities of his chosen systems.

Moreover, when Mark, David and Kenny were asked to demonstrate their system with the ball positioned in different parts of the pitch, all three coaches continued to position the players in their preferred system, making sure that the players were always in the correct position no matter where the ball was on the pitch. This showed their declarative and procedural knowledge of systems of play, in contrast to the three coaches (Roy, Harry and Steven) from an in possession perspective. They were unable to identify or detect the change in the system displayed did not replicate their chosen system.

Kenny illustrated his system of play declarative and procedural knowledge, stating how the system may change depending on the areas of the pitch the ball is located. In addition, he highlighted how the system could change when the team are in possession: *"That changes into a 4-3-3 going forward or even a 4-2-4 or could even be a 4-1-5 going forward but I do want the back 4"*. Kenny revealed more advanced systems of play knowledge compared to the other coaches, emphasising how a team may change shape in the different moments of the game, from in to out of possession or in other areas of the pitch.

The findings illustrated how systems are not stable and change during the game, reflecting the dynamic nature of football. Furthermore, the generalisation of systems does not take into account the differences when a team is in possession as opposed to a team being out of possession, which will see player roles and responsibilities change significantly within the different moments of the game, with

only one coach displaying this knowledge. The coaches referred to the static formation classification rather than a system, not detecting how they can change when the ball is positioned in other areas of the pitch. Coaches demonstrating an out of possession system were more rigid and made sure that the players were positioned correctly, which reflected their chosen system. As highlighted within the literature, the term ‘system of play’ is a more suited terminology that reflects how the team will move and re-position in the different moments of the game (Wu et al., 2019; Machado et al., 2017; MüllerBudack et al., 2019; Bialkowski et al., 2016; Wilson, 2010; Memmert et al., 2019).

Further research is required to explore systems and detect how systems change within the moments of the game and when the ball is positioned in different parts of the pitch. Additional guidance and support for coaches is required to develop their observation and analysis skills, and knowledge of how to detect the changes between the different moments of the game (DelgadoBordonau, & Mendez-Villanueva, 2016; Bialkowski et al., 2016; Wu et al., 2019; Machado et al., 2017 Müller-Budack et al., 2019).

### *Strategies and Tactics*

When questioned upon strategies and tactics knowledge, coaches gave mixed responses. Some coaches gave detailed explanations similar to David’s below, while others gave examples of how they utilised strategies and tactics: *“Objective first. What are you aiming for? Then you define your strategy: how are you going to do it? Then your tactics are sort of sub-principles of those strategies, so the smaller things. So related to the game, the objective could be to win the game. Your strategy could be to do so by playing long balls over their right back because he is really slow and bad. The tactics to that are how are you going to create the conditions to do so?”* **David**

Both David and Mark displayed more advanced declarative and procedural knowledge of strategies and tactics through their explanations and application with the Subbuteo figures. All coaches discussed their predetermined strategies, tactics and playing style alongside their teams’ preferred system, displaying declarative knowledge of the concepts. Furthermore, some coaches highlighted how the opposition setup, or their tactics, could impact their own team’s tactics.

In terms of application with the Subbuteo figures, all coaches demonstrated how they would employ desired strategies and tactics in conjunction with the style and system of play from both an attacking and defending perspective. One coach would demonstrate specific tactics either in or out of possession, whilst the other coach would then attempt to counteract the approach by applying specific tactics to the situation. With this, some of the coaches adapted their tactics and actions, significantly influenced by the opposition tactics, while other coaches continued with their preferred tactics and had confidence that their tactics could exploit the opposition.

Research suggests coaches look to cause a perturbation, changing strategies and tactics to disturb the flow of a game to gain an advantage over the opposition. This change can be from either a defensive approach preventing the opposition from exploiting an area of weaknesses or attacking to expose a flaw in the opposition. Strategies and tactics play a vital role in informing the team, units and individual player tactical decision-making before and during games. Moreover, this illustrates the dilemma for coaches within dynamical systems, with two opposing teams competing against each other with the same objectives to score and not to concede goals (McGarry & Perl 2004; O'Donoghue, 2008; Garganta, 2009; Rein et al., 2016; Fernandez-Navarro et al., 2016; Gréhaigne et al., 1997; McGarry et al., 2002).

### *Coaching backgrounds*

In terms of the coaches' backgrounds and profiles within the study, there was no significant difference between coaches. The knowledge displayed was sporadic with coaches showing more knowledge on certain concepts but less on others, and not displaying the same knowledge across concepts. Educational background, age, context and number of years playing did not have any impact upon the knowledge displayed by the coaches. Although Mark had the least number of coaching years, alongside David he demonstrated some advanced knowledge of certain concepts and more advanced knowledge across more concepts. However, he had not been selected for the Level 3 course. It would serve as useful to know the criteria applied when accepting candidates on the course. The findings illustrated that

despite coaches having similar knowledge and education, the two coaches not selected for the course only differed in terms of age and the number of years. An area for further investigation, therefore, would be to distinguish if age and the number of years coaching are the significant factors for measuring someone's suitability for the course, rather than considering the coaches' level of knowledge, playing and coaching experience and educational background.

## **Chapter Summary**

Football coaches who undertake Level 3 coach education courses often come from diverse backgrounds with an array of coaching and educational experiences. Hence, the study aimed to explore the tactical knowledge of Level 2 novice coaches at the start of their Level 3 journey.

The findings suggest that the coaches within the current study demonstrated some levels of both declarative and procedural tactical knowledge for the current stage of their development. All the coaches demonstrated the application of some key areas of tactical knowledge in terms of moments of the game, principles of play, playing styles, systems of play, strategies and tactics with their teams in practice. Overall, both David and Mark displayed more advanced tactical declarative and procedural knowledge across concepts.

Coaches were unable to define key terminology at times used within the literature, however, they were able to display the application of the moments of the game alongside the principles of play. Moreover, coaches demonstrated how they applied the principles of play in both the attacking and defending moments of the game (Nash et al., 2006; Yiannakos et al., 2006; Carling et al., 2007; Tamarit, 2015; Delgado-Bordonau et al., 2012; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016).

The findings highlighted how all coaches only describe having a style of play for one moment of the game with the majority of coaches describing an attacking style of play. Although coaches discussed the importance of being able to adapt playing styles and tactics depending upon several

situations (i.e. players' strengths, characteristics and opposition tactics) when demonstrating their preferred style, only two coaches adapted their playing style, strategy and tactics (Wade, 1996; Piltz et al., 2013; Clemente et al., 2014; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016).

While coaches had a clear understanding of their preferred system of play, all but one of the coaches still referred to their chosen system as a one-dimensional static classification and did not detect how the system of play changes depending on whether a team is in or out of possession of the ball. In addition, the coaches had not developed the observational skills or the knowledge to identify how the shape can change as their team changes from in-possession to out of possession.

Further research is required to explore systems of play to support coaches detect how systems change within the different moments of the game and area of the pitch. Further research is required to support coaches to recognise how styles or tactics may have to be adapted to a) suit the players' characteristics within their team, or b) adapt to the opposition's tactics and strategies. In addition, more guidance is required to assist coaches to develop their observation and analysis skills, to detect how systems changes between the different moments of the game (Delgado-Bordonau et al., 2012; Bialkowski et al., 2016; Wu et al., 2019; Machado et al., 2017 Müller-Budack et al., 2019; Fernandez-Navarro et al., 2016; Hewitt et al., 2016; The FA, 2016).

From a coach education perspective, more focus is required on courses to develop coaches' declarative and procedural knowledge of the moments of the game and the associated principles of play. The principles of play are the fundamental concepts of the game that have a significant impact upon the coaches overall tactical knowledge. They are the foundations to build and develop knowledge across the other concepts (styles, systems, strategies and tactics) (Wade, 1967, Price et al., 2019; 2020; Bangsbo et al., 2002; Piltz et al., 2013; Clemente et al., 2014; Fernandez-Navarro et al., 2016).

### *Limitations*

As with many studies, several limitations or considerations can be reached. The researcher aimed to carry out the focus groups before the start of the Level 3 course for the 2018/19 season to



explore coaches' tactical knowledge. However, due to no uniformed approach across County Football Associations (CFAs) start dates for the Level 3 courses varied, with Block 1 delivered by some CFAs in August and early September 2019. In addition, the ethical approval process was longer than expected, which meant the research could not take place until approval. With this, the majority of CFAs had now delivered UEFA B Block 1 of learning, which meant changing the focus slightly to “*at the start of their level 3 journey*”, with all focus groups carried out after Block 1 of the UEFA B. However, this did not have a significant impact on the study as Block 1 is an introduction to a number of the key topics, which are then covered in more depth as participants' progress through the other 3 Blocks across 9 months of the course.

Further consideration of this study relates to the methods applied. Through the meta-reflection process, it would have been advantageous for participants to engage in both focus groups and participant observation. This would have allowed the researcher to observe and analyse coaches' baseline declarative and procedural knowledge in practice, thus comparing their knowledge developed over time (Sparkes & Smith, 2014).

### **Meta-Reflection 1**

*The first 12 months of the thesis I found the most challenging on several fronts, especially from a method and methodology perspective. Primarily, I struggled to comprehend and lacked knowledge of the different paradigms and the associated ontology and epistemology with each. I went into the doctorate with the idea to carry out one positivist approach and one interpretive approach to develop skills as a researcher in both fields and then decide on the best method for the third study.*

*Previous research I had carried out during my postgraduate came from an interpretive approach. Therefore, this swayed me to stick with what I knew as a safe option, so for the first study, I decided to conduct interviews to gather the data. With this, I began to explore the relevant literature in the field and wrote the methodology and methods sections for the first study.*

*While awaiting feedback on the draft proposal for study and the ethics form, I came across a creative approach to collect data from the practice. During a seminar with postgraduate coaching*

*students, I paired up the students to carry out a task applying an approach called object learning. The task involved a Subbuteo set (see Chapter 3) and some questions around the tactical aspects of the game, which had been developed through the key concepts within the literature review around tactical knowledge.*

*It was during this seminar that I had a 'eureka moment' based on the students' interactions within the task. For example, within the task, although a student was unable to answer the direct questions posed verbally, when they were asked to demonstrate in action with the Subbuteo set they were able to illustrate some knowledge of the concept. Therefore, I decided that this approach would be equally effective in collecting data with coaches in the first study to identify the coaches' baseline tactical knowledge. With this, I started to explore the relevant literature but was unable to discover an appropriate method to apply that would support this approach. The only method which had any similarity to the approach was in the form of focus groups. However, when exploring the literature around focus groups, several authors suggested that the sample size would be too small which could be a major hurdle to the data collection process.*

*Moreover, within my practice as a coach, coach educator and lecturer, I am a pragmatist. I constantly explore different approaches in practice, often trying to find the most apt approach to overcome a certain issue, meet session goals or develop learners. Yet within my research approach, I was very fixed to the boundaries and attempted to fit the research question with the research philosophy rather than use the most appropriate method to explore and answer the research question.*

*After some discussion with colleagues about my approach, I went down the rabbit hole of exploring the different paradigms. Exploring the literature on the different paradigms illustrated my lack of knowledge on the subject, with my knowledge previously limited to positivist and interpretative approaches. I continued to read the literature and discover several paradigms with a range of underpinning beliefs. Through reading and dissecting the literature, my knowledge and understanding started to develop in terms of methodology, ontology, epistemology and methods (see Chapter 4). Establishing and tying down ontological and epistemology with underpinning beliefs aided my knowledge development around the paradigms and gave me the confidence to apply the most suitable*

*approach to answer the research question. Through critical reflection discussions, I was drawn to a paradigm that best reflected me as a person and aligned with a pragmatic standpoint (See Chapter 4). I continued to wrestle with a pragmatic approach through reflections and metacognition but now felt confident with my approach, as now I felt I knew who I was as a researcher.*

*I now had a clear justification and rationale for a focus group containing only two participants, the use of a video camera to record data collection and applying an object learning method during the focus group. After a final discussion with the research team around the methodology and methods, I submitted the ethics form. Once ethical approval was granted, I carried out a pilot with two coaches. After reviewing the process, I was pleased with the outcome and decided to stick with the approach, although a few amendments to the discussion guide were made (i.e. order and types of questions) before commencing with the study.*

*The next challenge in the first study related to transcribing the focus groups and the data analysis process. Although I had transcribed interviews before, transcribing focus groups was a completely different challenge. Each focus group generated circa 7000 words and 10 minutes of video clip equalled 60 minutes of write-up time. The most demanding part of transcribing involved translating two different coaches alongside trying to explain each coaches' actions and demonstrations with the Subbuteo figures.*

*A critical aspect in transcribing the focus group was from a reflexive position. Reflexivity had become another new concept I had to grasp. Within the literature, upon reflexivity, there are several main schools of thought from a sociological perspective. However, several authors describe reflexivity as the process of how the researcher considers how their own beliefs, values, backgrounds and attitudes influence their interpretations and impact upon their research. Additionally, other scholars view reflexivity as how the researcher writes themselves into the text and then analyses their reflections to try and balance the subjectivity.*

*Within the study, I had to endeavour to be impartial at this stage, explain exactly what the coaches were demonstrating with their actions and explanations and not be drawn into whether what*

*the coaches demonstrated were accurate or not. This process involved self-reflecting on the videos, interpreting the video and making sure my account aligned with exactly what took place in the video.*

*After being too fixated initially as a researcher and focusing on methods and processes in the data collection stage, I fell back into the trap in the write-up and data analysis stage. A further area of reflexivity I found difficult was the process of crossing fields. This concept was new to me as all previous research had come from a researcher perspective. Previous data analysis had been applied through thematic, inductive content analysis and this is the approach I started to apply. I spent many hours coding and using thematic content analysis applying inductive themes to analyse the data. I focused solely from a researcher perspective forgetting the aim of the study and I was driven by processes.*

*However, as I attempted to bring themes together and critically reflect on the data it became apparent that I was not focusing on the specifics of the research question. I focused solely on a researcher's perspective forgetting the aim of the study was also to have an impact on my practice as a coach educator. Moreover, I already had the main themes set out in the form of the conceptual framework and model. I quickly moved to a deductive manner positioning the coaches' responses under the key concepts of the framework. Not all was wasted with the inductive approach as revisiting allowed the sub-themes to emerge alongside me changing the order of the concepts in the framework to form a more logical order.*

*During the data analysis stage, I revisited the course material and a quote caught my attention. I thus decided to write it down, Smith's (2009) definition of a professional doctorate and stick it on the inside of my notebook:*

*“Investigation of a professional practice issue and the generation of new knowledge and expertise, using research strategies developed and applied by the professional practitioner themselves, while practicing in that setting” (P.10, Smith, 2009).*

*Whenever I got stuck on the ‘What now’ in reflection or struggled with my standpoint, I revisited the above quote. This process allowed for the self-critical reflection and made me more aware of myself;*

*it enabled me to keep refining my ontology, epistemology methodology and methods in line with the main aim of the research, which was to focus on applying methodologies and methods that would support findings and bring about change, rather than the shackles of one paradigm standpoint. Whenever I felt tensions between what I wanted to do as a practitioner and applying a method or approach, it was time to reflect. This often occurred after a meeting with my supervisor where I would justify what I wanted to do and why and thus, at times, reconsider the approach I had started to undertake. Reflecting on the 'what?', 'so what?' and 'what now?' was a critical tool through the process. The 'what now?' stage always brought me back to consider 'how does this affect practice and is this approach going to answer the research question?' At times, reading too much academic literature became a hindrance as I would find new approaches and meanings and at times be drawn to new ways, although they would not help in answering the research question. I felt the first study challenged me but also helped me to develop and challenge myself which is the main reason why I decided to undertake the professional doctorate.*

## **Chapter 6 (Study 2): The analysis of coaches' tactical knowledge in practice**

### **Introduction**

Despite the growth in popularity of coaching, the literature review (see Chapter 2) highlighted a lack of research covering the concepts of technical and tactical knowledge, with both concepts being underexplored areas within the field, and requiring further investigation. Moreover, enquiry into how coaches gain, learn, and develop knowledge has seemingly been more focused and disseminated to the academic world, rather than circulated to coaches and coach educators on the grass. Consequently, for research to have more of an impact upon coaching practice, coaches and coach educators alike, research needs to inform, guide, and help develop both practice and education (Trudel et al., 2006; 2013; Cushion et al., 2010; Abraham & Collins, 2011; Purdy et al., 2013; Piggott, 2013; Stodter et al., 2017).

Several authors suggest knowledge may be built around a hierarchical structure (see Chapter 2). A coach would acquire declarative knowledge of a concept, develop and consolidate this knowledge to form a solid base. Declarative knowledge is an individual's awareness of what to do and affects their cognitions, this includes task, strategy, variables, or people. Within a football context, this would consist of the laws, technical and tactical actions and executions (i.e. understanding what the principles of play are) (Veenman et al., 2006; Nash et al., 2006; Price et al., 2019; 2020; McPherson et al., 2004; 2007).

The next stage would be the development of procedural knowledge through applying and developing this knowledge during their coaching experiences. Procedural knowledge relates to the process taken to select the most appropriate skill or tactical action in a specific context. Within a football context, having tactical awareness is to select the most appropriate tactical action for a particular moment in the game. For example, the strategies and tactics of the in possession team when attempting to play out from the back. In addition, a coach would also be required to take into account several game considerations such as his players' capabilities, team units, the position of his team and opposition on the pitch, and game state (time remaining, score line, weather conditions). However,

findings from study one suggest that coaches may develop tactical procedural knowledge in practice without developing the required declarative knowledge (i.e. understanding of the tactical concepts) (McPherson, 1994; 2000; Nash et al., 2006; Walker et al., 2019; Price et al., 2019; 2020; McPherson et al., 2004; 2007).

The final component, conditional knowledge is knowing when, why, where, and how to apply declarative and procedural knowledge in practice. Within coaching, this would be an awareness of knowing when, where, why, and how to apply different strategies and tactics in action. In addition, being able to provide players with the knowledge to apply the most appropriate strategies and tactics at the correct moment, such as when to play out short or when to play a more direct, will be governed by the several game considerations discussed above (MacIntyre et al., 2014; Werthner et al., 2006; Cushion et al., 2003; Thomas et al., 1994; Price et al., 2019; 2020; McPherson et al., 2004; 2007; McPherson, 1994).

Therefore, the study explored 4 football coaches' declarative, procedural and conditional tactical knowledge in practice, through participant observation. The observations occurred between Block 3 and Block 4 of the Level 3 course, aligning with the time frame of the final in situ observation (Nash et al., 2006; Price et al., 2019; 2020).

## **Methods**

### *Participant Selection*

Four of the six coaches from Study 1 were selected to investigate their tactical knowledge development at a later stage of the course. All coaches were studying the Level 3 course during the 2018/19 season with one of the County Football Associations across North West England and had completed Blocks 1, 2 and 3 of the course. Two coaches from Study 1 were not accepted onto the Level 3 course for the 2018/19 season, therefore did not meet the study inclusion criteria (Krueger & Casey, 2015; Cushion & Jones, 2012).

Primary screening was undertaken to remove references to the coaches and to protect their identity by using pseudonyms for each coach (Lincoln & Guba, 1985; Patton, 1990; Sparkes & Smith,

2014). Table 6.1 shows the coach profiles which includes age, numbers of years coaching, number of years playing, the number of coaching hours per week, coaching qualifications, coaching context, and higher education qualifications.

The mean age of the coaches was 34 years with the youngest coach aged 23 and the oldest coach aged 41. The mean number of years of coaching was 8.75. David had the least number of years of coaching, whereas Roy had the greatest number of years of coaching. The mean number of playing years was 11.25 with both David and Kenny having the least and Steven the highest number of years playing experience. The mean number of coaching hours per week was 4.5 with Roy coaching the most hours per week and Kenny coaching the least number of hours per week.

Ethical approval was granted by Liverpool John Moores University Research Ethics Committee in March 2019 19/SPS/021. Participants were informed of the procedures employed before providing written consent, and relative gatekeepers were informed, and permission granted.



**Table 6.1.** Coach Profiles.

<b>Pseudonym</b>	<b>Steven</b>	<b>Roy</b>	<b>Kenny</b>	<b>David</b>	<b>Mean</b>
<b>Age</b>	41	33	39	23	34
<b>No. of years coaching</b>	10	12	7	6	8.75
<b>Coaching hours per week</b>	3	6.5	2.5	6	4.5
<b>No. year playing</b>	13	12	10	10	11.25
<b>Other Coaching Qualifications</b>	FA Youth Award module 1 & 2, Futsal level 1 Basketball & Handball level 1 FA level 1 & 2	Futsal Level 1, Handball Level 1 and a Tennis qualification FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, FA level 1 & 2	FA Youth Award module 1 & 2, Futsal level 1, Prozone 1-3, FA level 1 & 2	
<b>University degree</b>	BSc in Coaching and Sports Performance.	BSc coaching degree, currently studying an MSc in Football Coaching	None	BSc coaching degree, currently studying an MSc in Football Coaching	
<b>Coaching Context</b>	Open Age Semi-Professional	Open Age Semi-Professional	Grassroots U15's	Academy U11's	

### *Data Collection*

Participant observation was considered the best approach to gain an understanding of the coaches' knowledge in practice; therefore, it was employed as the primary method of data collection. Participant observation is commonly used in sports-based ethnographic studies and has emerged from anthropology and embraced as a qualitative approach within the social sciences (Alder & Alder, 1994; Gratton et al., 2004; Denzin & Lincoln, 2000; 2011; Sparkes & Smith, 2014). Participant observation allowed the researcher to investigate and learn from the coaches' actions and behaviours and assisted the researcher to gain a more complete view of coaches' learning experiences and application of tactical knowledge in practice (Patton, 1990; Gratton et al., 2004; Long 2007; Silk et al., 2005; Denzin et al., 2011; Naidoo, 2015). Moreover, it allowed the researcher to experience the social interactions between the coach and the players so that their actions and behaviours could be analysed and interpreted through observing subjects in their natural setting on several occasions during the football season (Patton, 1990; Smith, 2003; Gratton et al., 2004; Sparkes & Smith, 2014).

The nature of observation is described as a continuum from insider to outsider although the majority of field research is often somewhere in between the extremes. The role of the researcher in the study can be described as an overt insider to the group. The researcher knew the coaching domain and research investigation was known by the groups. Although the groups were aware of the researcher, he had no membership or relationship to any of the groups (Dandelion, 1995; Creswell, 1998; Hammersley & Atkinson, 2007; Sparkes & Smith, 2014).

The observations occurred between March 2019 and May 2019 after each coach had completed Block 3 and before Block 4 of the Level 3 course. This period was selected as it aligned with the final in situ observation of each coach. The observed sessions took place in the coach's own context and on their preferred date and time. To support the observation process and provide a greater depth of analysis, each session was recorded using a digital camera (Panasonic HC-V770). The digital camera was placed in multiple locations so that it captured the area of the pitch each coach was working in. Each coach wore a wireless microphone (Sennheiser, SK100 G4) and the researcher wore a headset throughout the observation to listen to the coach's dialogue with the players. In addition, the

researcher made several field notes during each of the coaching sessions to support the writing-up process. Field notes formed an essential activity as they allowed the researcher to write down some critical moments and episodes of enquiry to be analysed (Ghaye et al., 2000; Hammersley et al., 2007 Sparkes et al., 2014).

### *Data Analysis*

The use of technology allowed the researcher to review each coaching session on several occasions and incorporate the field notes obtained from the live observations. The researcher chose the term “episode” to describe a moment when a coach demonstrated knowledge around technical or tactical concepts of the game. The first stage involved coding each session, using a modified systematic observation method, and clipping coaching episodes of technical and tactical knowledge (Cushion, Harvey, Muir & Nelson, 2012; Bloom, Allain & Gillbert, 2017). To clip each episode, an analysis software tool (NacSports) was used to create a playlist of episodes. Knowledge episodes were demonstrated during behaviour categories such as feedback, questioning, demonstration, instruction, praise, modelling and talking or thinking aloud (Ford, Yates & Williams, 2010; Franks, Hodges & More, 2001; Cushion & Jones, 2001; Smith & Cushion, 2006; Whitehead et al., 2016). The second stage was to systematically categorise the type of information provided by each coach, using content analysis. Coding key concepts as they occurred during the observation and applying a deductive analysis approach. The concepts are drawn from the conceptual model and framework (see Chapter 3, Figure 3.7 and 3.8). The concepts served as a set of guidelines to observe, record and analyse the coaching episodes categorised based on six main themes; the moments of the game, the principles of play, style(s) of play, system(s) of play, and strategies and tactics. Chapter 3,

Table 3.2 illustrates the concepts, behavioural descriptions and how they relate to the Level 3 assessment guidelines (Braun et al., 2006; Burnard et al., 2008; Sparkes et al., 2014). The third stage explored trends within the data grounded from the observations, recordings and content analysis. To analyse the data a case study approach was deemed the most appropriate method.

### *Case studies*

A case study approach can be regarded as a naturalistic design rather than an experimental design and is an established method of enquiry used across several disciplines (Crowe et al., 2011; Yin, 2003; 2009; Miles & Huberman, 1994; Veal & Darcey, 2014; Stake, 1995). The work of Stake (1995) has been influential in case studies becoming significant within scientific enquiry through distinguishing different types of case study approaches. Yin (2009) highlights how case studies are used to understand and explain everyday events that occur in specific contexts. A case study can undertake several forms and may incorporate several cases; however, some authors suggest case studies usually explore a single event or specific phenomenon in its natural setting over a sustained period (Veal et al., 2014; Crowe et al., 2011; Yin 2003; 2009; Stake 1995; Gerring, 2007).

Case studies do not usually encompass participant observations; however, Jorgensen (2015) suggests participant observation findings are largely presented in the form of case studies and follow a similar approach (Jorgensen, 2015; Becker, 1968). In this study, the researcher was interested in the context of what the coaches said or demonstrated in terms of tactical knowledge concerning the specific technical and tactical knowledge rather than the types of coded behaviour. Therefore, to explore trends within the data, cross-case studies were employed. The four cross-case studies provide an intensive authentic and interpreted description and analysis of what transpired within each of the coaching sessions concerning the coaches' tactical knowledge in practice. The cross-case study narratives discussed the key themes, explanations, actions, and behaviours that had been analysed (Merriam, 2009; Pickard, 2013; Ponelis, 2015; Yin, 2007; Ghauri, 2004; Miles et al., 1994; Gerring, 2007).

Gerring (2007) suggests when dealing with multiple case studies the emphasis changes from an individual case to a sample of cases defined as a cross-case study (Gerring, 2007). Four case studies were created from the examined observations and recordings for each of the coaching sessions. The case studies developed a meaningful understanding of what the coaches did in the session and explored how they operated within their given context.

When carrying out analysis using a case study approach, several authors, particularly Yin (2007), advocate a staged process. The first stage of the case study process involved building narratives of the participant observation by reviewing, in chronological order of the session, the video clips with the researcher's field notes. The process started very descriptively and simplistically; it involved watching each episode and making notes to generate discussion and further understand the coaches' procedural and conditional knowledge (Bernard 1988; Ghauri et al., 2002; Miles et al., 1994; Yin 1997; 2003; 2007; Ghauri, 2004; Hammersley et al., 2007; Denzin et al., 2011).

The second stage of the process involved content analysis, coding key themes as they occurred in time during the observation, and applying a deductive analysis approach. The deductive approach formed part of a new case study narrative, which was classified by the six key concepts developed through the conceptual model and framework. The new case study narrative had the key themes, explanations, actions, and behaviours, which were analysed and underpinned with theory generated from classifications (see Chapter 8) (Ghauri, 2004; Miles et al., 1994; Hammersley & Atkinson, 2007; Denzin & Lincoln, 2011).

The cross-case studies were then compared, contrasted, and analysed to determine the differences in knowledge displayed by each coach at the same point on the Level 3 course. The distinct case studies enabled a specific examination of the real-life phenomenon of learning and explored different types of procedural and conditional knowledge displayed in terms of tactical knowledge. Furthermore, it provided insights into the coaches' specific development of technical and tactical game knowledge (Harvey et al., 2013; Potrac et al., 2002; Smith & Cushion, 2006; Yin, 2007; Ghauri, 2004; Miles et al., 1994; Gerring, 2007).

## **Results and Discussion**

The best way to understand what and how coaches learn is to observe and monitor them in their natural environment. Therefore, the study explored coaches' declarative, procedural and conditional tactical knowledge in practice. The observations occurred between Block 3 and Block 4 of the Level 3 course, aligning with the time frame of the final in situ observation.

Four cross-case studies permitted the researcher to describe and explain the session context and draw out the different levels and concepts of tactical knowledge displayed (i.e. moments of the game, principles of play, styles of play, systems of play, strategies and tactics).

### *Moments of the Game*

All coaches demonstrated moments of the game knowledge, with all sessions illustrating a clear emphasis relating to a specific moment. All coaches delivered an in possession attacking moment rather than out of possession or transition, although two coaches referred to the other moments of the game. In addition, not all coaches referenced a specific sub-moment of the game or area of the pitch, however, when observing the sessions, it was evident each coach focused on at least one specific sub-moment.

Roy specifically referenced the attacking moment of the game (in-possession) and went into greater depth highlighting the focus of the session, playing in the final third. This illustrated his understanding of the sub-moments of the game as well as his declarative knowledge development. Equally, Kenny displayed moment and sub-moment declarative knowledge of the game that focused on in-possession and attacking play in the final third. In addition, he displayed further sub-moment knowledge by only concentrating on the central area and right channel of the pitch. Therefore, this underlined Kenny had developed declarative and procedural knowledge since the start of the course.

Steven's session focused on an in possession moment, specifically switching play. Although he did not specify a sub-moment as the key area of focus, the emphasis was on the central midfield players' role and responsibility of playing through the middle third of the pitch, a sub-moment of the game. Although there was no sub-moment declarative knowledge displayed he showed his procedural knowledge development with the session including both a moment and sub-moment focus.

David illustrated moments of the game knowledge with a clear focus to retain or penetrate which he reinforced throughout the session. He did not state an overall sub-moment, although through his interventions he displayed declarative and procedural sub-moments knowledge. For example, he identified when playing out from the back in the defensive third, the team did not set up how he

wanted. Therefore, he intervened at the next opportunity: *“Can you show me where you would be from a goal kick?”* In response, the players moved to different strategic positions on the pitch. One player was still not in the preferred position, so he followed up with another question: *“Where is the halfway line, Alex? [Go] as high as you can”*. The players received minimal information regarding their positions but were able to adjust to the correct position within the sub-moment, highlighting that the specific sub-moment had previously been coached.

Overall, all coaches displayed procedural moments and sub-moments of the game knowledge throughout the sessions. Not all coaches illustrated declarative sub-moments knowledge, however, it was evident all sessions were focused on a sub-moment. Findings suggest that all coaches had developed sufficient knowledge to plan and deliver sessions focused on moments and sub-moments of the game (Wade, 1967; 1996; Hewitt et al., 2016; The FA, 2016; Fernandez-Navarro et al., 2016).

#### *Principles of play*

All coaches revealed declarative attacking principles of play knowledge, specifically creating space, movement and support play. However, not all were able to display consistent procedural and conditional knowledge in practice. Moreover, two coaches (Steven and David) displayed procedural and conditional defending principles (i.e. cover and balance) knowledge although the sessions’ focused on attacking play. Both observed that a loss of possession could lead to a transition in play, therefore they intervened to stop the threat of a counter-attack (Wade, 1996; The FA, 2016; Ward et al., 2011; Costa et al., 2009; Piltz et al., 2013; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; Price et al., 2019; 2020).

Steven illustrated procedural and conditional principles of play knowledge on several occasions and within the first few episodes. The first significant episode which showed this knowledge involved the central midfielders (CM) position to support the ball to switch the play: *“Jake try and make sure if they go out wide there [to the right winger] I want you to sit in here [centre of the pitch on the edge of the centre circle] because they can bounce the ball off you or if you can feed the ball long try and switch the play ok?”*

This was just one example of several throughout that illustrated support play attacking principle conditional knowledge. Furthermore, the specifics of how he wanted the team to switch the play through the CM as the primary player. He further demonstrated conditional attacking principles knowledge concerning support play, creating space and movement, intervening with prompts or little reminders. In addition, he displayed procedural and conditional defending principles knowledge in terms of both cover and balance, highlighting the development of principles of play knowledge.

Kenny displayed inconsistent procedural attacking principles knowledge. At the start of the session, he focused too heavily upon the player on the ball or receiving. The narrow focus did not allow him to detect players taking up incorrect positions, which negatively impacted other players'. As a result, the team were unable to apply the creating space principle, which on several occasions caused a loss of possession. Research suggests less experienced coaches may often be unable to perceive the whole picture and be drawn to less relevant cues (Vergeer et al., 2009; Kaya, 2014; Price et al., 2019; 2020; Nash et al., 2006; Wright et al., 2007; Stoszkowska et al., 2015).

Nevertheless, as the session progressed, Kenny started to coach away from the ball and observe the positions of certain players. With this he started to intervene, for example, he asked the right-midfield (RM) player: "*Can you hug the touchline to stretch the play?*" while emphasising the height principle by asking the striker to stay high. This demonstrated some procedural attacking principles knowledge, specifically creating space through width and height. However, a prominent example of Kenny's inconsistent procedural and conditional attacking principles knowledge revolved around a coaching point with the striker: "*Bobby I know you're playing centrally and that's fine. You're looking to score, but if possible, if you can see the space towards the corner flag, yeah try and make that run that will hopefully take a few defenders with you*". The intervention illustrated his lack of attacking principles declarative and procedural knowledge. Furthermore, it contradicted the earlier strategy and tactics employed with his desired style of play. Overall, Kenny demonstrated some



progress in his knowledge development of the attacking principles, however, he had not established sufficient declarative and procedural knowledge, which impacted other tactical knowledge concepts.

Roy, illustrated conditional attacking principles knowledge, specifically movement, creating space and creativity. Early on in the session he did not show explicit knowledge, for example, Roy intervened to highlight the players' movement into the final third: *"What I want to see is the movement in [the end zone] after the pass has gone okay? So the run's happening, then the pass goes, then we are connecting"*. The early interventions were missing the knowledge around when, how and why players should make the runs. However, as the session progressed he began to encourage players to create space and emphasised players' movement into the end zone, specifying the types and timing of runs. In addition, he reinforced the triggers the players were required to consider when attempting to make supporting runs, illustrating attacking principles conditional knowledge. He showed further procedural and conditional attacking principles knowledge development through his interventions, coaching support play, creating space and movement.

David displayed consistent conditional attacking principles knowledge throughout the session and on several occasions, showed advanced tactical knowledge. Although appearing simple in context, the example below illustrated his advanced tactical knowledge of the game:

**David:** *"Remember in possession, how many lanes?"*

**Players:** *"5"*

**David** *"How many lanes out of possession?"*

**Players:** *"3"*

The pitch is considered as five channels that have emerged over recent years associated with the concept defined as 'Half-spaces' (See figure 3.12) usually associated with Level 4 coaches (Lebzygold, 2017; Herold et al., 2019). Through strategic positioning of players across the five channels, the team in possession can play in-between the lines and units of the opposition. This enables the attacking team to distort the defending team's units and organise their system in an

attempt to exploit space. The above example illustrated David's conditional knowledge through his ability to take the concept and apply it in simple enough terms for players aged 11 to understand and, allow them to begin to think strategically. In addition, David demonstrated defensive principles (cover and balance) and transition conditional knowledge by intervening to ask the centre back if he would leave the opposition centre forward unopposed. This showed he was not just focused on the session aim but also the realism of the practice and to prevent the opposition striker from a direct route to goal if possession was lost.

The principles of play are viewed as the fundamental foundation for building attacking and defensive team play. Principles of play are essential concepts for coaches to understand as they underpin the development of tactical knowledge concepts. Therefore, coaches at this stage of the course would be expected to have developed significant knowledge and understanding of the principles and consistently displayed procedural and conditional knowledge during practice. All coaches had developed declarative and procedural principles of play knowledge, however, only three displayed consistent conditional knowledge during observed sessions (Wade, 1996; The FA, 2016; Price et al., 2019; 2020; Lago-Ballesteros et al., 2010; Tenga et al., 2011; Ward et al., 2011; Côté et al., 2009; Stoszkowski et al., 2016; Hewitt et al., 2016; Fernandez-Navarro et al., 2016).

### *Styles of play*

None of the coaches defined a specific style of play, which was unexpected considering 'How we play' is a significant focus of the Level 3 course. However, through observing the coaches' instructions and desired tactics in the session, it was apparent each coach had a desired style of play (Travassos et al., 2013; Bangsbo et al., 2000; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016; Redwood-Brown, 2008; Reep et al., 1968; Tenga et al., 2003; Hughes et al., 2005a; Lago, 2009; Fernandez-Navarro et al., 2018).

Steven did not reveal a specific style of play, but he displayed a possession-based approach. Throughout the session, he provided technical and tactical information that encouraged players to retain possession or recycle the ball in an attempt to maintain possession. On several occasions, he

displayed procedural and conditional styles of play knowledge by intervening to discuss player on ball decisions or movement when possession was lost, or if there was a better decision or option for consideration.

Likewise, Roy did not define his style of play, however, at the start of the session, it was unclear if he had developed the declarative or procedural knowledge of the concept. An example to support this came when Roy observed players dropping back to play in the defensive third to create depth in the play. He consequently intervened in the practice and stated: *“I don’t really want you playing in there because if they win it in there then the game is dead, but just get it out. I want to see the runs in”*. The initial thought was a lack of declarative and procedural attacking principles and style of play knowledge. However, as the session progressed the instructions given and associated strategies and tactics aligned with a direct style of play. In addition, Roy’s instructions and desired behaviours to play into the striker early continued to illustrate a direct style that he imposed throughout. On several occasions, he demonstrated his preferred style, illustrating styles of play conditional knowledge which he had developed throughout the course (Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016; Redwood-Brown, 2008; Price et al., 2019; 2020).

David exhibited conditional style of play knowledge throughout the session. His desired approach portrayed a mixed style of play in possession, which was portrayed by several of his interventions, for example:

**David:** *“If we cannot penetrate straight away, what do we need to do?”*

**Players:** *“Keep possession”*

**David:** *“Yes, keep possession, backwards and sideways”*.

David asked questions after observing the players lose possession by trying to force passes forward. He encouraged the players to take ownership of when they could penetrate early, attack more directly, or when to retain the ball and build up the play. David showed he was able to develop the

players' awareness so they could make better strategic decisions for their current situation, based on the teams' style of play.

Kenny demonstrated declarative and procedural styles of play knowledge at the beginning of the session. His approach was possession-based that involved building up the play in the middle and final thirds. However, he then imposed a direct approach, changing the strategy and tactics despite achieving success with the possession-based approach. Nonetheless, unlike David, Kenny's mixed approach came from a lack of declarative and procedural knowledge of how he wanted to play rather than extensive knowledge. The change in a style related to earlier instructions discussed with the striker, this revealed an absence of procedural attacking principles knowledge. This had a negative impact on the understanding of how he wanted to achieve his style of play. Consequently, he had not developed adequate declarative and procedural knowledge for this stage of the course.

An effective style of play for a coach considers both their team strengths and weaknesses alongside an awareness of the style of the opposition. Three of the coaches revealed clear knowledge development in regards to styles of play. Two coaches early in the session illustrated a clear style of play that was maintained throughout. Whereas Roy did not define a style of play until midway through the session. The players would have benefited from establishing the style earlier in the session so that desired strategies and tactics could be understood and achieved.

Kenny displayed the least developed style of play knowledge and changed from one approach to another without a clear rationale for the change, which showed his lack of knowledge of the concept (Reep et al., 1968; Tenga et al., 2003; Lago, 2009; Fernandez-Navarro et al., 2018; Hewitt et al., 2016; Wade, 1967; Gréhaigine et al., 1995; 1999; Bouthier, 1988; Yiannakos et al., 2006; Price, et al., 2020; Travassos et al., 2013; The FA, 2016; Redwood-Brown, 2008).

### *Systems of Play*

All coaches demonstrated declarative system of play knowledge. Three coaches highlighted their preferred system of play at the beginning of the session, which set the scene for the players.

However, Roy did not establish a definitive system until midway through the session. It once more would have been beneficial for the players, if he had linked the system and style of play earlier in the session. Despite this, he displayed declarative knowledge of his preferred system.

Steven and Roy employed a 1-4-3-3 system, while Kenny preferred a 1-4-5-1. The preferred systems employed were favoured systems used by Premier League teams during the 2018-19 season (Bialkowski et al., 2016; Wilson, 2010; Optasportspro, 2019; Memmert et al., 2019). David working in the 9 vs 9 formats of the game did not have an 11 vs 11 system. However, his chosen 1-2-3-3 revealed a declarative and procedural system of play knowledge based on this game format. In addition, all coaches set up the opposition in a preferred system of play when it came to the game related practice. This showed that the coaches were aware of how the opposition system and style of play can challenge, affect and impact their approach to the game (Reep et al., 1968; Tenga et al., 2003; Hughes et al., 2009; Prince et al., 2020).

Moreover, coaches displayed declarative and procedural systems of play knowledge in terms of in possession, however, none of the coaches demonstrated how their system would change from in possession to out-of-possession. All coaches referred to a static formation classification and did not distinguish if the system changed. Furthermore, none of the coaches differentiated if the system changed based upon the ball location across different sub-moments, displaying a lack of declarative knowledge.

Only David revealed some procedural knowledge of how the system changed across the different sub-moments. Recent studies have explored how systems are not stable and often change across the different game moments and sub-moments, reflecting the dynamical nature of football. The generalisation of systems being static does not take into consideration the differences when a team is in-possession as opposed to out-of-possession, which will see players' roles and responsibilities change significantly within the different moments (Wu et al., 2019; Machado et al., 2017; MüllerBudack et al., 2019; Bialkowski et al., 2016; Wilson, 2010).

In terms of working with units, all coaches displayed procedural knowledge of working with the primary player and units. All coaches worked with the primary and secondary players when intervening displaying declarative, procedural and condition knowledge. However, only Roy and Steven coached full team units.

Roy on several occasions demonstrated conditional knowledge when working with units, for example, he coached the front 3 (no.7, 9 &11) and the 2 supporting midfield units (no.8 & 10). The primary focus is highlighted in the following quote: *“The ball’s zipping in [to the no.9]. My 10 and my 8 just stood and watched. When that pass is going in when you see Gibbs [no. 9], open up. You’re moving on to support straight away. As soon as you see that ball going in, you’re going in to support. I don’t want you standing off”*. Roy by connecting the attacking principles, style of play, and appropriate strategy and tactics of when and where to play into the striker, alongside showing the wide players (No.7 & 11) where to move, how to create space and support the play displayed his conditional knowledge of working with units and working with two groups of units.

Steven’s knowledge of working with units was illustrated through a pattern of play he set up with the players; *“Ritchie out to Tom, then Tom will come back this time to JP. When the ball comes out to you (RCM) here mate, I want to see if you can, after the switch across, slide it in for the winger to come onto so in between the channel can we get in behind them”*.

Steven showed exactly how he wanted the team to play and how he wanted the units to combine and work together to create an opening. This demonstrated his conditional working with the unit’s knowledge.

Both examples above revealed they had developed the knowledge to coach units within in a system of play, consequently displaying procedural conditional knowledge of the concept (Gréhaigne et al., 1997; McGarry et al., 2002; Garganta, 2009; Price et al., 2019; 2020; The FA, 2016).

## *Strategy and Tactics*

All coaches demonstrated declarative strategy and tactic knowledge which aligned to their desired style and system of play. Three coaches showed their procedural knowledge, which had a significant impact on the players' actions and behaviours. The coaches predetermined strategy and tactics were built around the principles of play influenced how the team, primary units, secondary units and individual players all interacted to form tactical decisions within the sessions (Yiannakos et al., 2006; Carling et al., 2007; Hewitt et al., 2016; Tamarit, 2015; Delgado-Bordonau et al., 2016; Fernandez-Navarro et al., 2016; Garganta, 2009; Grehaigne et al., 1995; 1997; Rein et al., 2016).

Steven modelled his tactics, the CM moved the ball from the centre of the pitch out to the LW, before switching back to the CM, followed by another pass out wide to allow the RW to attack. Once the players were able to achieve this tactic, he then worked on the movement and timing of the RW's run: *"McGrath, JP will travel with the ball. Can you then come from out wide and try and cut in? Because he is going to slide you in between the FB and CB"* [which had been created during the switch in the play]. Steven's strategies and tactics disorganised the opposition by creating space for the wingers to exploit, using players within the units demonstrated an understanding of the attacking principles and advanced knowledge of tactical concepts.

Roy displayed procedural and conditional knowledge by illustrating his desired style of play that involved hitting the striker (no.9) early linking how players should support the play, for example; *"What we are looking to do is hit the frontman, hitting the 9 as he has got his back to goal on the defensive line. Can we drop it back into the 10 and can our wide players [No.7 and 11] run in?"* He focused on working with how he wanted the striker (no.9) as the primary player and the supporting midfield players (No.10 and No.8) and wingers (No.7 and No.11) to combine. This exemplified Roy's understanding of applying appropriate strategies and tactics which relate to the team's style of play

Only Kenny displayed inconsistent strategies and tactics knowledge and on several occasions, they did not align with his chosen style of play. In addition, David and Steven displayed further

knowledge through the implementation of opposition strategies and tactics during the session so that it replicated a more realistic game situation.

Unless a coach has established declarative, procedural and conditional principles of play knowledge it can be challenging to align appropriate strategies and tactics with their preferred style and system of play. Without this, it can often lead to inconsistent behaviours and a lack of clarity of information provided to players (Wade, 1996; 1967; Travassos et al., 2013; Bangsbo et al., 2000; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016; Redwood-Brown, 2008).

In terms of overall Level 3 competency, all coaches required further development of knowledge on systems of play in the different moments of the game. David, Roy and Steven were on track to be deemed competent, however, based on the observation, Kenny would not be deemed competent. He had not developed sufficient declarative and procedural knowledge on several concepts especially the principles of play which then impacted other concepts of tactical knowledge.

In terms of the coaches' backgrounds and profiles, findings suggest that coaching hours, coaching domain and education could have had an impact upon the coaches' knowledge development. The coach who displayed the least developed knowledge had the least across all three areas. It is difficult for a coach to develop procedural and conditional tactical knowledge without spending extensive time coaching. Kenny coached the least amount of hours per week compared to the other coaches. This meant at this stage of the course he had spent less time on the pitch delivering the tactical concepts in practice. It is difficult for a coach to develop procedural and conditional tactical knowledge without spending extensive time coaching.

Furthermore, in comparison to the other three coaches, Kenny coached an under 15's grassroots team as opposed to Roy and Steven who coached at semi-professional level and David at Academy level despite him working at 9 vs 9 formats of the game. The coaching domain could have an impact on the coaches' knowledge development. David in an academy setting would be working with Level 3 and 4 coaches which could allow him to learn and develop his knowledge. Similarly, Roy and Steven at a semi-professional level would be exposed to players with developed tactical



knowledge of several of the concepts, alongside both worked with a level 3 coach. Kenny in contrast worked with grass-roots players with less tactical knowledge alongside his co-coach lacked knowledge and experience.

The final difference between Kenny and the other coaches was that the other three coaches all had studied a University coaching degree programme while Kenny's highest level of qualification was Level 3. Therefore, the other three coaches through the education may have developed additional declarative knowledge and been more familiar with several of the concepts of tactical knowledge. However, as illustrated in study 1 this was not likely to be a significant factor.

Finally, age, number of years coaching and number of playing years had no significance on the coaches' knowledge within the present study. David who had the least in all three categories displayed the greatest depth of tactical knowledge overall (Blackett et al., 2017; Stodter et al., 2017).

## **Chapter Summary**

The study explored coaches' tactical knowledge in practice between Block 3 and Block 4 of the Level 3 course. The key findings related to six key concepts of tactical knowledge concerning the conceptual framework and model: the moments of the game, principles of play, styles of play, systems of play (including working with units), and strategies and tactics.

The findings suggest that the coaches with more advanced tactical knowledge demonstrated more episodes of procedural and conditional principles of play knowledge during practice. A coach requires sufficient principles of play knowledge to be able to link to styles and systems of play with the appropriate strategies and tactics across each moment and sub-moment of the game (Wade, 1996; Hewitt et al., 2016; FA Education 2016; Price et al., 2019; 2020; Nash et al., 2006; Côté et al., 2009; Stoszkowski et al., 2016; Price et al., 2019; 2020).

In addition, coaches are at the same stage of the Level 3 course, however, the knowledge displayed in practice emphasised they are at different stages in their tactical knowledge development. Coaches with more advanced knowledge were able to display more consistent episodes of conditional tactical

knowledge during practice. In contrast, coaches with less developed knowledge illustrated fewer episodes of both procedural and conditional tactical knowledge.

Finally, the number of hours of coaching per week, the coaching domain, and the educational background of the coach could be factors in the present study. The coaches working at the academy and semi-professional level displayed more conditional knowledge and spent more time coaching on the pitch. (Nash et al., 2006; Price et al., 2019; 2020; Vergeer et al., 2009; Kaya, 2014; Wright et al., 2008; Stoszkowska et al., 2015).

### *Limitations*

Further consideration of the study was the lack of similar or previous research on the a) novice and intermediate coaches in football and b) tactical knowledge of coaches at this level. Although some recent studies have started to explore how coaches develop knowledge and what knowledge they require, there is limited research on tactical knowledge or how novice coaches develop their knowledge as they progress to an intermediate level. However, this was identified as an important opportunity for the researcher to explore gaps within the current literature and present findings for further studies.

As discussed in Chapter 5 limitations, it would have been advantageous for participants to engage in both focus groups and participant observation. This would have allowed the researcher to observe and analyse coaches' baseline declarative and procedural knowledge in practice, thus comparing their knowledge developed over time (Sparkes & Smith, 2014).

### **Meta-Reflection 2**

*In developing knowledge of the different paradigms and establishing an understanding of ontological and epistemology with underpinning beliefs, I felt that I was in a good place moving into study two. I completed the writing of methodology and methods sections alongside ethical approval and commenced with the study. Through a pragmatic approach employing participant observation was the most apt approach to collect the data. Also, recording sessions proved advantageous as it*

*allowed the sessions to be reviewed on several occasions to facilitate the analysis of the coaches' actions and behaviours.*

*As eluded to earlier in meta-reflection 1, too much reading at times sent me down the wrong path. I still had not mastered the art of reflexivity and continued to wear the hat of a researcher and was unable to balance crossing fields. In the data analysis stage, I once more got caught in the trap of being solely focused from a researcher's perspective. I was focused on a mixed-method approach which I was drawn to upon recommendations within the literature. The first part involved systematic observation applying themes from the conceptual framework coding coaching behaviours and placing the data in tables and graphs and exploring statistical approaches to present the data. Secondly, through a deductive approach began to categorise the coaches' actions under themes. Critically reflective on the write-up stage the work had become very descriptive with too much focus on the data, which a) did not tell the story or answer the research question or b) would add to or impact practice. Following a review with the research team, the data analysis section was amended accordingly. My endeavours had not gone to waste. The clipped videos which I termed episodes, which critical incidences within the session when the coach had or had not displayed tactical knowledge. The clips allowed me to review each clip and transcribe the coaches' actions, demonstrations or explanations in terms of technical and tactical knowledge. Once all the episodes were coded against the framework concepts through a deductive approach the next decision was to decide how best to present the data.*

*Many consideration of the best approach to present the findings was explored (i.e. IPA, case studies) however, the best approach considered to present the data was through cross-case studies. The coded clips were then put together in chronological order to tell the story of how each coaching session unfolded and how the coaches showed their tactical knowledge in practice.*

*I felt this approach was important to illustrate the differences and similarities between the coaches at this stage of their development but also demonstrate how as the sessions progressed the coaches' displayed different episodes of knowledge. Furthermore, from a reflexive perspective,*

*reflexivity, allowed the researcher to add in their personal experiences and knowledge to support the data and provide a theoretical standpoint which shaped the methodological approaches and formed a vital part of the write-up linked to the framework and model. It allowed the researcher to add context and meaning for the reader as in some parts within the data what the participants were explaining or demonstrating did not give full explanations, meaning the context could be lost. The approach at certain times became important when emphasising the different types of knowledge displayed within the practical observations. Moreover, the process became challenging as not only did the study explore how what and when coaches develop knowledge, but it also looked at the researcher as a practitioner and educator. The findings throughout the studies looked to bring about adaptations and changes to my practices in coach education.*

*The profound met-reflection process of re-examining reflections, actions and methods alongside metacognitions across the thesis has supported my development and knowledge as both a practitioner and a researcher. A significant realisation in the research process is that I write for understanding. Whether that be through reading literature or analysing data. I read, write, reflect, analyse, re-write, reflect and synthesise until I fully understand a specific concept. This at times has impacted the word count in several chapters in the thesis which have been required to be refined. Moreover, as I concluded the write up of the final study and revisited several of my reflections such as the position of the chapters within the thesis, it dawned on me that an integral concept throughout the thesis has been the development and adaptation of the Conceptual Framework (CF) and Game Model (GM). Yet I had positioned them as the final chapters. Despite the continuous re-examining and metacognition encounters, deliberating where the framework and model should be positioned within the thesis proved challenging.*

*The framework facilitated the link between practice and theory. It looked to illustrate a clear link between the findings of each study, professional practice and the literature, with some authors suggesting this can often be overlooked by doctoral students conducting research. Furthermore, it had been suggested that studies informed by conceptual frameworks or models exhibit greater critical thinking and meta-reflection skills of doctoral-level researchers.*

*It was not until the write up of study 3 and the continuous meta-reflections I understood where and why the framework and model should be positioned within the thesis. Until this point, they had been positioned and re-positioned throughout the thesis. The conceptual framework and model guided the thesis, as my knowledge developed concepts become more defined and my understanding grew. This further illustrated my personal development and growth towards the concepts within the field of study. I had developed a thorough understanding of the journey I had taken and a clear vision of how the thesis should be constructed to tell the story.*

*The framework and model have evolved and been refined throughout the thesis, based upon findings across each study. Meta-reflections through reflecting, re-examining, analyse and synthesis on the design of the framework and model have been imperative, as illustrated in Chapter 3. The framework and model have served as an essential instrument to guide and support the research questions and analyse the data via providing a theoretical overview of the research process underpinned by the literature. The framework and model needed to be introduced in Chapter 3 following the literature review section outlining the importance of the framework and model to the thesis. This chapter discussed the background to the design and development of the model and the adaptation of the new Game Model and adapted Conceptual Framework. Furthermore, it illustrated the importance of all the studies in the thesis. Chapter 3 needed to outline how the researcher came to the design and development of the conceptual model and framework and explain the cycles the model and framework went through in which the final version is presented the final study.*

*The framework and model supported the thesis aim to analyse coaches' tactical knowledge and game understanding and looked to help solve the gap in coaches' tactical knowledge development. The framework changed from an instrument to collect and analyse data around tactical knowledge to a tool that may serve as useful in supporting coaches to develop tactical knowledge. The framework and model played two significant roles; firstly, it provided a sound theoretical explanation of what the researcher intends to explore and secondly, it should hopefully give the reader clarity and confidence in what the researcher was looking to explore and how they achieved it.*

*Chapter 3 in the thesis now explored both the detail behind the development and design of a GM approach, alongside illustrating how the model can support the development of tactical knowledge and game understanding of football coaches. The chapter explored each concept of the model and framework supported by appropriate literature. The final versions of the model have been revised based on the findings across the three studies exploring coaches' tactical knowledge and now sat in Chapter 8. I had not been explicit in my writing concerning the framework and model even though it had played a significant factor in the whole thesis from selecting the appropriate methods to analyse the data. Therefore, the framework and GM could not sit at the end, it was required to be split between two different chapters. Critically reflecting on the model's practicality and suitability drawn from some key findings from the three studies the module was therefore adapted. It was vital to Chapter 3 to illustrate the importance of the model and framework to the overall thesis, but also imperative in the final chapter to demonstrate the final model.*

*Furthermore, the model was applied and considered with postgraduate students, studying an MSc in Football Coaching and Analysis. The coaches had a range of coaching experiences and knowledge and were asked to build a Game Model. After multiple discussions and feedback with the coaching students, it was decided to amend some of the terminologies. In addition, through reflecting on the chapter a significant element that would serve useful for coaches and education alike is an example of how a coach would start to develop a model for practice. A step-by-step guide of the process was required to demonstrate and inform coaches how each stage is built and developed for the model to be applied in practice.*

*Re-examining and analysing the chapter with the guide in place meant the chapter had become more beneficial to practising coaches, not just academics or educators. It would now allow coaches to take the guide and put their ideas, ideology and visions of the game down on paper to review their tactical knowledge and build their knowledge and understanding in the creation of a clear game model to help reduce the uncertainty for players and allow coaches to operationalise their styles and systems of play on the team to improve the teams' tactical cohesion and improve practice.*

## **Chapter 7 (Study 3): The use of an intervention strategy to support the development of Coaches' tactical knowledge.**

### **Introduction**

The review of the literature (Chapter 2) suggests that existing research has not provided adequate attention to the concept of tactical knowledge or how coaches develop this knowledge. Furthermore, there is a lack of empirical evidence in team sports supporting the application of metacognition, exploring how and when coaches develop their strategic understanding of gameplay and tactical knowledge. The field is still a very much underexplored area of research within the coaching literature (McPherson et al., 2004; 2007; Dail, 2014; MacIntyre et al., 2014; Price et al., 2019; 2020; Kinnerk et al., 2018; O'Connor et al., 2018).

Several authors discuss the different types of knowledge development in terms of declarative, procedural, and conditional knowledge (see Chapter 2) (Veenman et al., 2006; Nash et al., 2006; Price et al., 2019; 2020; McPherson et al., 2004; 2007). Declarative knowledge is an individual's awareness of what to do and affects their cognition; this includes task, strategy, variables, or people. Procedural knowledge relates to the process taken to select the most appropriate skill or tactical action in a specific context (i.e., the tactical awareness is to select the most appropriate tactical action for a particular moment in the game). The final component, conditional knowledge, is knowing when, why, where, and how to apply declarative and procedural knowledge in practice. Within coaching, this would be an awareness of knowing when, where, why, and how to apply different strategies and tactics in action. In addition, it is being able to provide players with the knowledge to apply the most appropriate strategies and tactics at the correct moment (MacIntyre et al., 2014; Werthner et al., 2006; Cushion et al., 2003; Thomas et al., 1994; Price et al., 2019; 2020; McPherson et al., 2004; 2007; McPherson, 1994).

As of June 2019, circa 900 coaches studying the Level 3 course were deemed not yet competent (NYC) and have not completed the course from the 2017/18 or 2018/19 season (FA Education, 2019). With this, all Level 3 courses were suspended until March 2020 to allow coach

educators to focus on supporting coaches to develop their tactical knowledge and practical skills to complete the course (FA Education, 2019). Moreover, during the last five years as a coach educator and an academic lecturer, a trend has been observed of coaches displaying a lack of tactical knowledge. This trend has been observed when both delivering coach education courses (i.e., Level 2 and 3) and on undergraduate coaching degree programmes. Likewise, this view has been shared and discussed amongst coach educators alike. Emerging coaches seem able to discuss different tactical concepts and apply football jargon, however, many lack the underlining declarative and procedural knowledge of the different tactical concepts. In addition, findings from study 1 (Chapter 5) also revealed a variation in coaches' baseline tactical knowledge at the start of a Level 3 course. Thus, this has impacted the development and application of conditional knowledge in practice.

Within the researcher's local County FA, as of September 2020, only 60% of learners had completed the course. The main issue with the coaches deemed NYC within the researchers' County FA was their lack of tactical knowledge, specifically conditional knowledge in practice. Several coach educators argue that the current courses do not contain enough sport-specific knowledge or spend enough time and/or depth focussing on tactical knowledge such as the concepts highlighted in the conceptual framework and model (see Chapter 3 and Chapter 8). Subsequently, this, in turn, has had a negative impact on the success rates of the Level 3 course over the last few years in England.

To support coaches develop tactical knowledge on the Level 3 course, the researcher proposed the design and construction of a Game Model (GM), which may serve as an effective approach to enhance coaches' knowledge. As discussed previously, the Delgado-Bordonau et al., (2012; 2018) GM may be too advanced for less experienced coaches. In addition, the range of terminology applied to discuss tactical knowledge concepts does not reflect terms applied across the game (i.e., grassroots, professional game, coach education) or academic literature. Subsequently, it may be challenging for coaches to access the required information to develop their tactical knowledge.



Chapter 3 illustrated six key concepts of the adapted GM and framework. The chapter illustrated how coaches may apply the framework to construct a GM by exploring each concept of the model in depth to support their tactical knowledge development. Findings across studies 1 and 2 required the researcher to add in additional concepts which are explored within this chapter. The adapted GM permitted the coach to break down the game into the different moments (i.e., in possession, out of possession, the transition from defence to attack, and transition from attack to defence) and sub-moments (i.e., defensive third, midfield third, attacking third, left channel, right channel and central channel) by focusing on smaller manageable moments. It also encouraged the coach to focus on the application of strategies and tactics based on their chosen style and system of play in each of the specific moments and sub-moments of the game, applying the applicable principles of play (Wade; 1967; 1996; Lago-Ballesteros et al., 2010; Tenga et al., 2011; The FA, 2016; Hewitt et al., 2016; Delgado-Bordonau et al., 2012; 2018; Tamarit, 2015; Tee et al., 2018; Price, et al., 2019; 2020).

Current research suggests that to gain a better understanding of coaches' behaviours and actions in practice, further research is required with the use of Technology-Enhanced Learning (TEL). TEL is becoming increasingly widespread within the coaching environment as it can aid coaches' development through supporting reflective practice, and metacognition to bridge cognitive dissonance (Cushion et al., 2018; Cope et al., 2017; Stodter et al., 2020). In addition, research has revealed that using video clips can provide an opportunity for reflection which in turn brings about a behaviour change (Partington et al., 2015). To support coaches to reflect, video Stimulated Recall (SR) was applied to capture the change of declarative, procedural, and conditional knowledge over a sustained period (Stodter & Cushion, 2020; Cope, Partington & Harvey (2017).

Alongside the GM and SR approach, a pedagogical object learning approach was applied in the form of a Subbuteo set or tactics board. Within Study 1, this pedagogical object learning approach was applied that engaged and energised the learner and served as a useful tool to extract and capture coaches' tactical knowledge that they could not articulate. The use of Subbuteo figures as the key object encouraged participants to demonstrate their tactical knowledge and understanding. Each

participant had 11 Subbuteo players, allowing them to display their application of tactical knowledge through demonstrating their system and style of play with specific strategies and tactics (Reading, 2008; Chatterjee, 2010; Chatterjee & Hannan 2015). The Subbuteo set or tactics board acted as a key mechanism for the coach to display and recreate situations observed and recorded in practice through the SR process. The combination of object learning and the SR process allowed the coach to bring the GM to life and supported the reflection process. Furthermore, it supported his development of observation, cognition, and decision-making skills in practice. The coach was able to construct new knowledge and meanings, developing his understanding through the interactions created via the object learning and SR process. Subsequently, this brought a change to his tactical knowledge in demonstrating conditional knowledge in practice. Furthermore, it permitted the researcher to strive and capture the change of declarative, procedural and conditional knowledge over a sustained period (Stodter et al., 2020; Cope et al., 2017; Chatterjee et al., 2015; Reading, 2008; 2020; Price et al., 2019;2020; Ozturk, 2017; McPherson et al., 2004; 2007; Dail, 2014; MacIntyre et al., 2014; Price et al., 2019; 2020; Kinnerk et al., 2018; O'Connor et al., 2018).

Therefore, the present study explored the application of an intervention strategy as a support mechanism to develop the conditional tactical knowledge of a Level 3 coach deemed NYC during the 2018/19 course. The intervention strategy comprised of the development of a GM and a conceptual framework, Stimulated Recall (SR) in conjunction with a pedagogical object learning approach.

## **Methods**

Participant observation, stimulated recall and object learning were the most suitable approaches to examine the development of football coaches' tactical knowledge and gameplay over a sustained period as they applied the Game Model and Conceptual Framework.

### *Participants*

Coaches were included based on their participation in both studies 1 and 2. From the previous study, two coaches successfully passed the Level 3 course, therefore two coaches deemed not yet competent (NYC) were selected for the study (Patton, 2015; O'Donoghue, 2010; Gratton & Jones,

2005). Due to Steven's lack of confidence with his Game Model, he decided to delay the start of the intervention strategy until the New Year (2020), however, the Covid-19 pandemic led to the cancellation of his observations in March 2019. After a discussion with the research team, it was decided that the study would continue with one coach (Kenny) as an individual longitudinal study.

Ethical approval was granted by Liverpool John Moores University Research Ethics Committee in January 2019 **19/SPS/003** and March 2019 **19/SPS/021**. Participants were informed of the procedures employed before providing written consent, and relative gatekeepers were informed and permission granted.

#### *Data collection*

To develop a thorough understanding of when and how football coaches develop tactical knowledge, several qualitative data approaches have been employed. The use of multiple data sources is viewed as good practice to ensure internal validity through data triangulation (Starkes, 1995; Lincoln & Guba, 1985; Patton, 1990; Smith, 2003; Gratton & Jones, 2004; Veal et al., 2014; Crowe et al., 2011). Therefore, the study followed a three-stage process in the form of an intervention strategy; Game Model (GM), participant observation, video-stimulated recall with object learning to collect the data (see figure 7.1) (Patton, 1990; Smith, 2003; Gratton et al., 2004; O'Reilly, 2012; Sparkes et al., 2014; Cope et al, 2017; Stodter & Cushion, 2020; Yin, 2003; 2009; Veal et al., 2014).

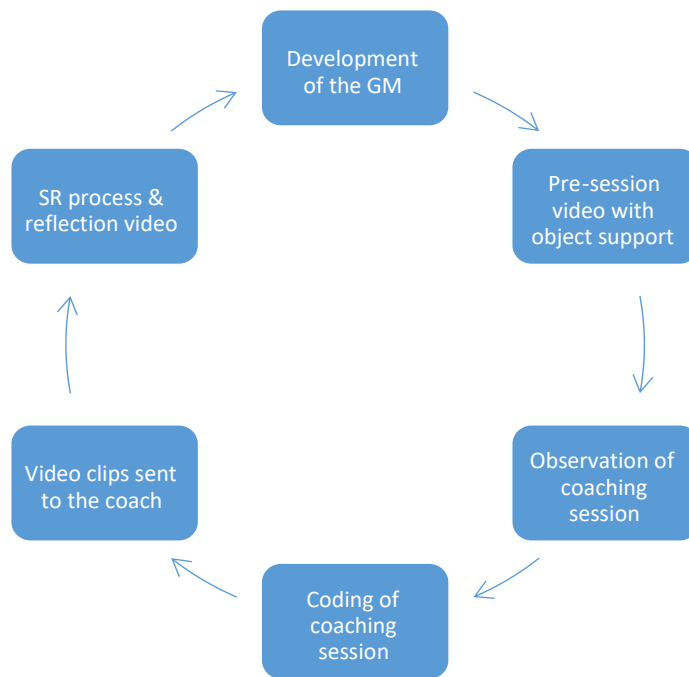
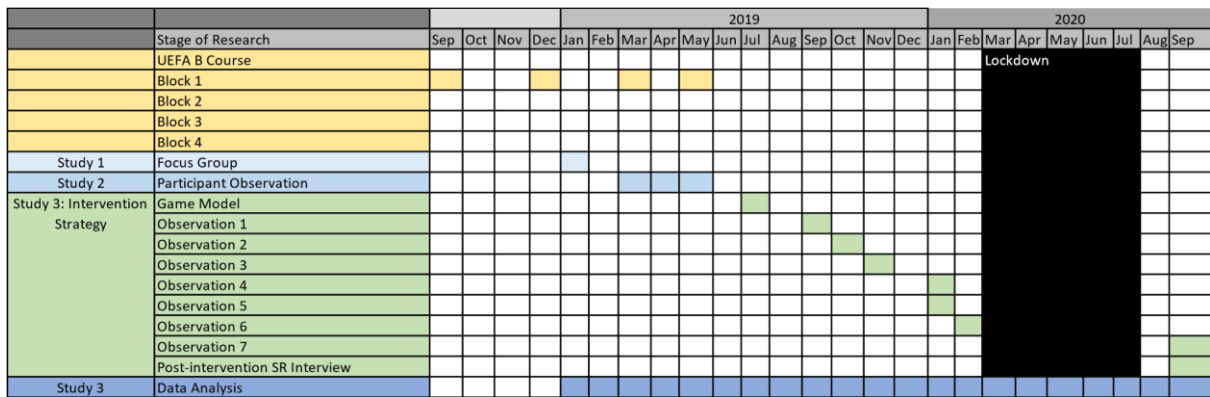


Figure 7.1. The data collection process in Study 3.

The researcher reflected and reviewed the process after each stage before moving on to the next stage. This involved an action research approach that allowed the researcher to interchange or cross-fields between practitioner and researcher to support the coach’s development of tactical knowledge (Mills, 2000; McNiff, 2002; Bourdieu & Wacquant, 1992; Thorpe et al., 2011; Townsend et al., 2020).

Figure 7.2 illustrates the data collection points. It is to be noted that the data collection points within this study started in June 2019 at the start of the intervention strategy. However, pre-data collection from Studies 1 and 2 was included to show the journey the coach had taken from the start of the Level 3 course until he completed the course. At this point, the intervention strategy stopped, and no further data was collected (for further information, please refer to Chapters 5 and 6).



**Figure 7.2.** Gantt chart illustrating data collection points throughout the study.

*Stage One: Game Model design*

Stage one involved a meeting between the researcher and the coach (Kenny) to discuss the Game Model intervention strategy. Kenny was asked to consider concepts of the conceptual framework when creating his GM (see Chapter 3). The conceptual framework in Chapter 3 illustrates the stages a coach is required to go through to construct their model. The concepts have several questions under the headings ‘key considerations’ and ‘further considerations’ (see Chapter 3) for the coach to consider. At this stage, the researcher had a dual role as a researcher and educator when supporting Kenny to develop his GM. Once he felt ready to proceed, he was asked to contact the researcher to arrange the first observation, which started stage two of the data collection.

At this stage, the researcher was required to be aware of crossing fields (Thorpe, Barbour & Bruce, 2011; Olive & Thorpe, 2011). The fields within reflexivity can be described as the social space or context in which the researcher finds themselves to hold a dual role as a researcher and practitioner. Within the current thesis, the author can be identified as both a researcher and coach educator (Bourdieu et al., 1992; Thorpe et al., 2011; Townsend et al., 2020). Moreover, at certain points in the data collection stage, it was vital the researcher stayed objective and formed the sole role of the researcher. Conversely, the findings from the data collection then allowed the researcher to examine themselves through the lens of a coach educator and practitioner through the action research approach, and to support Kenny with his tactical knowledge development.

### *Stage Two: Participant Observation*

Participant observation alongside other methods of data collection was applied. The participant observation process followed a similar process to the second study, allowing the observer to investigate and learn from the coaches' actions and behaviours over a sustained period. Observing the coaching session as a method of data collection helped the observer gain a more complete view of coaches' learning experiences and development of tactical conditional knowledge in practice (Patton, 1990, Long 2007; Silk, Andrews & Mason, 2005; Price et al., 2019; 2020).

Participant observation allowed the observer to investigate and learn from the coach's actions and behaviours. Moreover, it allowed the researcher to experience the social interactions between the coach and the players so that their actions and behaviours could be analysed and interpreted through observing the coach's application of tactical knowledge (Alder & Alder, 1994; Gratton et al., 2004; Denzin & Lincoln, 2000; 2011; Sparkes & Smith, 2014). Observing the coaching session as a method of data collection helped the observer gain a more complete view of participants' learning experiences and application of conditional knowledge in practice (Patton, 1990, Long 2007; Silk, Andrews & Mason, 2005; Price et al., 2019; 2020). The nature of observation is described as being on a continuum from insider to outsider although the majority of field research is often somewhere in between the extremes. The role of the researcher in both studies can be described as an overt insider to the group. The researcher knew the coaching context, and the research investigation was known by the groups. Although the groups were aware of the researcher, he had no membership or relationship to the groups (Dandelion, 1995; Creswell, 1998; Hammersley & Atkinson, 2007; Sparkes & Smith, 2014).

To support the participant observation process and provide a greater depth of analysis, each session was recorded using a digital camera (Panasonic HC-V770). Participant observations occurred in Kenny's coaching context and were arranged around his preferred dates and times between September 2019 and September 2020. Kenny wore a wireless microphone (Sennheiser, SK100 G4)

and was recorded using a digital camera (Panasonic HC-V770) during seven, 60-minute coaching sessions. The digital camera was placed in multiple locations so that it captured the area of the pitch

Kenny was working in. The observer wore a headset throughout the observation to listen to Kenny's dialogue. An additional five observations occurred, two games and three training sessions but the researcher just observed Kenny, without any dialogue or discussion around the session outcomes or pre-knowledge of the sessions. The purpose of the un-recorded observations was to observe Kenny's progress without the camera being present.

During the participant observation process, the researcher made many field notes during each of the coaching sessions (including the un-recorded sessions) to support the writing-up process. Field notes formed an essential activity as they allowed the researcher to write down some critical moments and episodes of enquiry to be analysed and formed part of the stimulated recall process in stage three (Ghaye et al., 2000; Hammersley et al., 2007; Sparkes et al., 2014).

Before recorded sessions, Kenny was asked to supply the researcher with a coaching session plan of the moment of the game and session topic, alongside a short video using a tactics board. The object-based learning pedagogical approach using the tactics board allowed Kenny to demonstrate how he wanted his team to play within that moment, and the individual player and unit strategies and tactics employed (Chatterjee et al., 2015; Wade, 1996; Hewitt et al., 2016).

### *Stage Three: Stimulated recall*

The third stage of the data collection process applied video-stimulated recall (SR). Stodter and Cushion (2020) and Cope, Partington, and Harvey (2017) highlight the limited number of studies that explore the specific knowledge requirements coaches develop, and how knowledge changes over time. The SR interviews within the study captured the change of declarative, procedural, and conditional knowledge over a sustained period, and the development of Kenny's observational skills, cognition, and decision-making skills in practice (Stodter & Cushion, 2020; Cope et al., 2017).

Recent studies have utilised video clips of coaching behaviours and practice as part of a stimulated recall method to gain insight into the rationale behind the observed behaviours while providing additional meaning based on the contextual situation (Bloom, Allain & Gillbert, 2017). Although some studies have provided an insight into the benefits of TEL, the implementation of technology such as video feedback is still at an early stage and an underdeveloped research area in coaching (Cushion & Townsend, 2018; Wright et al., 2014; Butterworth et al., 2014; Groom et al., 2011). Moreover, Partington et al. (2015) suggested that using video clips can provide an opportunity for reflection, which in turn results in coach behaviour change.

The use of technology allowed the researcher to retrospectively review the coaching session, using a NacSports analysis software tool to a) code incidents; and b) clip scenarios for video stimulated recall reviews with the coach post-session (Bloom, Allain & Gillbert, 2017). Exploring the coach's interpretations of their observed behaviours and actions or asking questions upon observed tactical elements of the game allows a greater understanding of the complex process of coaching practice. For the stimulated recall video feedback, the coach reviewed edited clips to identify and analyse tactical concepts. A tactics board was present to allow the coach and the researcher to demonstrate solutions or set scenarios for the coach to demonstrate his knowledge (Partington & Cushion 2013; Cushion & Townsend, 2018).

Due to the flexibility of SR, the process was designed and adapted accordingly to achieve the study aim (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier, Cordon, Thienot & Fournier, 2011). SR approach was chosen rather than other contemporary methods such as 'Think Aloud' protocols, as the coach within the current study may have limited self-awareness and ability to verbalise thoughts during practice without interfering or impacting on their coaching practice (Lyle, 2003; Whitehead, Cropley, Huntley, Miles, Quayle & Knowles, 2016; Stodter et al., 2020). After each coaching session, the researcher reviewed the video recording and edited 30-second video clips of five to seven critical incidents based on the coach's chosen topic and planned tactical outcomes. The clips were categorised into three distinct areas of enquiry a) the coach intervened with



a specific coaching point and gave technical and tactical information, which was correct, b) the coach intervened with a specific coaching point but gave incorrect information or partially correct information or c) the coach did not identify or missed an opportunity to intervene. Furthermore, each category involved the coach applying some form of tactical knowledge such as principles of play, individual player or unit instructions, or specifics around the strategies and tactics concerning the coach's chosen style and system of play. The field notes played an essential aspect as they allowed the researcher to record the particular incidents to review so that SR clips could be used to support the coach.

Within seven days of the observed coaching session and before the coaches' next coaching session, the researcher arranged a specific time and venue to meet with the coach (Kenny) and go through the video clips (Stodter et al., 2020; Gilbert & Trudel, 1999; 2001; Cushion et al., 2018). The initial process involved Kenny and the researcher observing the clips together on a laptop with a tactics board of 22 magnetic players to assist in recreating situations that had arisen. The researcher played each clip to the coach and invited the coach to recall the incident within the session. The researcher asked the coach to explain what they observed or what happened in the clip. The follow-up questions involved asking the coach to compare how they wanted their team to play out and what happened within the video clip (Lyle, 2003). They were then asked to recreate the specific moment on the tactics board and explain what they wanted to happen based on strategies and tactics associated with their preferred system and style of play. Although the researcher asked several pre-prepared questions, follow-up questions were asked based on the coach's responses. The tactics board allowed the coach and researcher to demonstrate solutions or set scenarios for Kenny to demonstrate his knowledge (Partington et al., 2013; Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011).

The SR process went through several stages and as Kenny became more familiar with the process, the approach adapted accordingly. There had been a five-week gap in-between the first and second coaching observation and a three-week gap between the first SR intervention and the second coaching observation. The intention was to carry out an observation every four to six weeks and carry

out the SR process within one week of the recorded session. The aim of the 7-day time frame between the observed session and SR process was to minimise Kenny's cognitive deterioration of the session (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011). However, due to Kenny's and the researcher's availability, the time required to upload the footage, and code the clips using NacSports impacted upon the timeframe between the first session and SR interview. Through critically reflecting (*see meta-reflection section below*) on the SR applied in the first intervention strategy, an adapted approach was applied for the second intervention.

The next observed session was coded and clipped within a 7-day time frame and sent through to Kenny with additional questions to allow him to review each clip in his preferred private location. Kenny reviewed each clip in chronological order and described exactly what happened within each clip, applying a think-aloud approach through audio recording his thoughts using voice notes or a camera. Once he had described each incident, Kenny compared and contrasted what happened in the clip with what he planned in his pre-session video. The pre-session video replicated his desired strategies and tactics within the sub-moment of the game. To support Kenny's explanations, he was encouraged to make use of a tactics board (object learning) to demonstrate his observations and tactical knowledge within the associated clip. If Kenny required any further prompting on his reflections or strayed away from what happened within the clip, a follow-up question would be sent via email, text, or voice note to trigger the reflection and keep him focused upon the specific clip.

The final SR interview followed a more traditional approach in the form of face-to-face dialogue. The format asked several set questions from the observation period alongside reviewing several clips for an open discussion on some key areas identified within the observations (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011).

### *Data Analysis*

A case study approach was applied to examine findings from the participant observations and stimulated recall reflections and analyse Kenny's change in knowledge. Case study approaches can be regarded as a naturalistic design rather than an experimental design and is an established method

of enquiry used across several disciplines (Crowe et al., 2011; Yin, 2003; 2009; Miles & Huberman, 1994; Veal & Darcey, 2014; Stake, 1995). The work of Stake (1995) has been influential in case studies becoming significant within scientific enquiry through distinguishing different types of case study approaches. Yin (2009) highlights how case studies are used to understand and explain everyday events that occur in specific contexts. A case study can undertake several forms and may incorporate several cases, however, some authors suggest case studies usually explore a single event or specific phenomenon in its natural setting over a sustained period (Veal et al., 2014; Crowe et al., 2011; Yin 2003; 2009; Stake 1995; Gerring, 2007). While case studies do not usually encompass the method of participant observations, Jorgensen (2015) suggests the findings of participant observation are essentially presented in the form of case studies and follow a similar approach. Therefore, a case study approach was applied to generate a detailed account and in-depth understanding of when, what, and how a coach develops their tactical knowledge through the duration of studying a professional qualification in their real-life coaching environment (Crowe et al., 2011; Yin, 2003; 2007; Veal et al., 2014; Hammersley et al., 2007; Denzin et al., 2011; Jorgensen, 2014; Becker, 1968). This approach allowed the researcher to review and change the data collection methods as discussed in the SR reflection section. Therefore, this allowed theory to develop alongside the data collection, which led to additional lines of enquiry embedded within the analysis (Ghauri et al., 2002; Grønhaug 1985; Gratton et al., 2005; Hammersley et al., 2007; Denzin et al., 2011).

Analysing case studies can be a difficult process and should not simply be storytelling. The data is required to be authentic and interpreted in relation to the context and theory behind the study. The data collection and analysis is required to be interrelated during the duration of research, and analysis should not be a process at the end of the collection period. Moreover, this approach allowed the researcher to review, change, and amend the data collection methods. This allowed theory to develop alongside the data collection which led to additional lines of enquiry embedded within the analysis (Ghauri & Grønhaug 2002; Gratton et al., 2005; Hammersley et al., 2007; Denzin et al., 2011; Silverman, 1989).

The first stage of the case study process involved building narratives of the participant observation and SR process, embedded with the researcher's field notes in chronological order from the start of the course until the end of the intervention strategy. The process was very descriptive and simplistic; it involved transcribing all voice notes, recordings, and discussions to try and understand what, how, and if the coach's knowledge had changed over time. This process is particularly important within longitudinal studies over a sustained period. The data was transcribed verbatim producing one narrative transcript. For validity, on several occasions, the researcher sent the participant transcribed narratives to clarify the interpretation and sense check that it was an accurate account of what happened (Bernard 1988; Ghauri et al., 2002; Miles et al., 1994; Yin 1997; 2003; 2007; Ghauri, 2004; Hammersley et al., 2007; Denzin et al., 2011; Patton, 1990; Sparkes et al., 2014).

The second stage of the process involved content analysis, coding key themes as they occurred in time during the observation, using deductive analysis. The deductive approach formed part of a new case study narrative that was classified into seven key concepts; moments of the game, principles of play, style(s) of play, system(s) of play, sub-moments of the game, strategies, and tactics. The new case study narrative had key themes, explanations, actions, and behaviours that were analysed and underpinned with theory generated from the GM and conceptual framework (see Chapter 3) (Braun et al., 2006; Burnard et al., 2008; Sparkes et al., 2014; Ghauri, 2004; Miles et al., 1994; Hammersley et al., 2007; Denzin et al., 2011).

Several authors suggest that the second stage of analysis should be a shift from a chronological process to a more conceptual process. However, it was felt that highlighting the impact and change of knowledge in chronological order was more appropriate but have the deductive themes within each moment to interpret the data and research question. The categorised coded themes and examples started to demonstrate trends, relationships, and key findings within the data. Furthermore, they demonstrated the key changes and gaps in knowledge (Ghauri 1983; 2004; Yin, 2007; Hammersley et al., 2007; Denzin et al., 2011; Veal et al., 2014; Miles et al., 1994).

Some of the key themes identified several key questions for the post-intervention strategy to examine if the findings aligned with Kenny's opinions. An integral part of the analysis process was cross-checking for commonality and consistencies across the different timed events within the case study and final SR interview, but also to compare the incidents within each event (Ghauri 1983; 2004; Yin, 2007; Hammersley et al., 2007; Denzin et al., 2011).

## **Results**

The study explored the impact of applying a Game Model (GM) in combination with stimulated recall (SR) and a pedagogical object learning approach to capture the development of the coaches' declarative, procedural, and conditional tactical knowledge.

## **Case Study**

### *Prior Knowledge*

Study 1 revealed Kenny's absence of moments of the game declarative and procedural knowledge. Kenny also displayed marginal principles of play declarative and procedural knowledge when questioned, however, his demonstrations (with the Subbuteo) illustrated some knowledge of the attacking (i.e., width) and defending (i.e., compactness, pressure and cover) principles. While he did not apply the correct terminology, his explanation showed some understanding of both the attacking and defending principles. In addition, Kenny illustrated some principles of play procedural knowledge, when showing the team's organisation and strategy to defend against an opponent playing out from the back. Although Kenny was unable to define the principles, he displayed some basic attacking and defending principles procedural knowledge. In terms of system of play, one notable aspect of his procedural knowledge was how he emphasised how his team's system of play changed between in or out of possession. Furthermore, he discussed how the ball's location on the pitch could influence the system so adaptations were required.

The first study highlighted Kenny's lack of declarative knowledge of several concepts when questioned, however, when demonstrating specific knowledge such as strategies and tactics in

different moments of the game he displayed some procedural knowledge through the specific actions displayed.

However, the majority of Kenny's knowledge displayed appeared to be reactive to the opposition, with him not yet capable of explaining his own tactical decisions and actions. The second study illustrated some changes in Kenny's tactical knowledge. He showed some declarative knowledge around the moments and sub-moments of the game through the session plan provided. While Kenny had developed some declarative knowledge of the different moments on paper, he had not developed this knowledge in practice as he was unable at this point on the course to apply different skills or strategies within the given moment of the game. Kenny's lack of procedural knowledge hindered the opportunity to demonstrate conditional knowledge. What Kenny attempted to coach with his correctly identified primary and secondary players (centre-forward and right-winger) did not factor in the ball location on the pitch. The tactics he wanted to employ related to a different moment of the game. This led to some indifferent coaching which confused the players, with Kenny coaching what he had in his head rather than what was happening on the pitch within the relevant moment and sub-moments.

The observation revealed some developed knowledge in terms of the principles of play in both his declarative and procedural knowledge. In addition, Kenny displayed some attacking principles procedural knowledge such as coaching the right-winger (no.7) to provide the width and create space when the team is attacking, support play when coaching the centre-forward to occupy the two central defenders, and creating height in the attack for centre-midfielder to exploit the space. These two examples emphasised both some level of declarative and procedural knowledge, however, the conditional aspect of knowledge was missing within the session as often the information provided was given retrospectively and was not concurrent when the incident occurred.

Following on from Block 4 of the Level 3 course, Kenny was deemed not yet competent, requiring further support and guidance to advance his knowledge, develop his coaching skills and complete the course.

*Intervention strategy: 1<sup>st</sup> July 2019*

The intervention strategy started after Kenny had been deemed not yet competent. The initial stage was a discussion about the Game Model (GM) and the supporting conceptual framework between the researcher and Kenny (see chapter 3).

*23<sup>rd</sup> September 2019*

With the offseason running across July and early August, it gave Kenny time to build his GM for the new season. Before the first observation, Kenny sent through his GM examples and began to consider some concepts:

*“I am thinking of playing out from the back from a goal kick. This I have not worked on, so with the new law change this season, this would be a good introduction to them. Looking to split the CB’s inside the box, have the FB’s wide and have the CDM drop deep as to support. Preferably I would like the FB’s to play down the line then back into the central area”.*

Kenny had demonstrated positive changes in his declarative and procedural knowledge since his last observation on the courses. He illustrated declarative knowledge concerning the new goal kick law and some procedural tactical knowledge about his new style of play (a more possession-based approach) and strategy to play out from the back. In addition, Kenny focused on how he wanted to play rather than react to the opposition, as identified in the first study. Through constructing the GM, Kenny had started to consider the tactical concepts in more depth and how the concepts interlinked. The GM illustrated more focus upon his style of play in and out of possession, the preferred system of play with several strategies and tactics on how to execute the playing style. In addition, he started to consider his coaching domain, an under 15’s team in division four of the local league. Kenny only began coaching the team in the 2018/19 season. Initially, he chose a 1-4-5-1 system of play in an attempt to reduce the goals the team had conceded.

Kenny decided to change to a 1-4-3-3 system for the 2019/20 season, having significantly reduced conceded goals. He highlighted how the set-up was quite defensive, however, when the team

gained possession, he wanted his wide players to push up high and wide to create a 1-4-3-3 system when attacking. This system change in the different moments of the game revealed his systems of play declarative and procedural knowledge development.

*23<sup>rd</sup> September 2019*

The first observation focused on an in possession moment, which was playing out from a goal kick in the defensive third (sub-moment). Through the GM construction, Kenny continued to highlight his declarative knowledge of different moments by showing how he planned to focus on only one specific moment within each session.

The rationale for the focus of the session playing out from a goal kick is linked with Kenny's new style of play which focused on a more possession-based approach rather than the direct approach employed previously. Figure 7.3 shows a diagram from the coaching session plan provided for the session.



**Figure 7.3.** *Diagram from the coaching session plan for the session on 23<sup>rd</sup> September 2019.*

Kenny had started to consider how the team would play in possession. Moreover, he began to understand 'why' he wanted to play this way adding justification for the change in the style of play. Furthermore, the plan illustrated the system of play he wanted to employ in possession which was a 1-4-3-3, with each position labelled within the plan. Both these changes allowed the team to become more attacking when in possession. During the observation, it became apparent there had been a shift



in Kenny's tactical knowledge compared to previous observations. The first few coaching interventions illustrated this knowledge through the application of several attacking principles and relevant tactics: *“John where could we get now? Yeah, get as wide as possible, wide [and] as high as possible yeah. Look at the space you're in here yet they've not even come [towards you] you're actually stretching their midfield unit massively OK. So if you could be in this position from the goal kick yeah massive amounts of space OK so just stay out high and wide”*.

This displayed a change in his actions and behaviour; Kenny coached in relation to what had happened in the exact moment. He demonstrated how and why he wanted his team to play out from the back, recreating situations while giving players specific tactical detail and justification. This revealed how he had developed his declarative and procedural knowledge of several attacking principles. Kenny demonstrated many instances of how his tactical knowledge had developed since previously being observed, especially style(s) of play and the appropriate strategies and tactics to achieve this. Whilst Kenny had demonstrated some positive change in his knowledge, there were still several instances where he had either missed the player's incorrect actions, coached an incident that went against the principles of play, or how he wanted to play. In addition, Kenny often only coached one player in isolation, rather than primary and secondary players together or how units work together to achieve the desired tactics. The observation revealed several concepts which required further development, especially around the principle of depth in the new style of play.

*8<sup>th</sup> October 2019*

The first SR interview, two weeks after the first session, involved Kenny reviewing several video clips before explaining and/or demonstrating on the tactics board what he observed. The first clip related to the left-backs starting position, a situation Kenny did not rectify but occurred on several occasions (Figure 7.4).



**Figure 7.4.** *Left Back's start position in relation to the moment of the game.*

From watching the clip, Kenny shared his observations in the example below: *“He is still not out wide with that ball he played, then he has played it to John’s feet. Obviously, he is going to be receiving under pressure. If he could have stayed out wide there, the guy could have clipped it obviously to the wide channel because he would have been in space but he has come in because the ball has been down this side. So, I mean I could ask him to come in and get back out again”. “I don’t really think that pass was back on there. Maybe he could have gone back to the CB. Initially the problem is the starting position; he is too in, he should be out wide”.*

Kenny had started to develop his principles of play declarative and procedural knowledge, however, he was unable to see the situation in real-time and intervene during the session. Kenny’s session aim was on an attacking moment of the game, however, on several occasions when the team regained possession, he coached the team to apply defensive principles: *“The centre back’s there as that ball’s moving forward. Can we get out to the edge of the box there?” “Trying to play a high line OK, so when we’ve got the ball, was it, Trent, you put Mo in. Just recreate that, so as you put Mo in boys as that ball is getting played into, Mo, you two [CB’s] are in charge of this back four-unit OK?”. “So as soon as he plays it forward, you want to push out. You got that Alan? Obviously as well and on the left-back right back out to the edge of the box”.*

Kenny still lacked principles of play procedural knowledge as this situation reoccurred on several occasions, and had a negative impact on the team attempting to play out from the back. At

first, Kenny did not see the issues when instructing the back four-unit to push up as he felt it was something the team needed to work on and develop. After a few moments of reflection and questions posed by the researcher, he started to realise he was not focusing on the aim of the session. Although Kenny seemed to agree what he coached did not support the team playing out, he still struggled to accept what he coached was incorrect within that moment. However, after Kenny observed the next two clips, he realised he had given the incorrect information to players within that moment, identifying what he had coached negatively affected the play: *“Because I have asked the 2 CB’s to push out, he has played that dangerous ball. He has played a dangerous ball really because I have asked them to push up to the line where he could have been an option”*.

By coaching the back four-unit to move up the pitch and hold a tight line within the current situation, he had overlooked a key area of support play by not considering the depth principle. On both occasions following his intervention, the team lost possession, due to the back four-unit stepping up and condensing pitch space for the midfield player on the ball. Kenny’s principles of play declarative and procedural knowledge had developed in some areas, however, he had not fully developed knowledge of support play. Kenny focused on the players in advance of the ball, overlooking the players supporting the play behind the ball.

In terms of tactics, Kenny did not illustrate any alternative tactics when the opposition pressed his team, causing them problems to play out from the back. On several occasions, Kenny was unable to identify and rectify the issues due to a lack of procedural knowledge, however, with the session plan he detailed an alternative solution (declarative knowledge). By reviewing additional clips and using the tactics board to recreate the incidents, Kenny explored why the depth support principle is critical to play out from the back in a possession-based approach. With Kenny going through alternative solutions on the tactics board, he appeared to grasp the concept and show some procedural knowledge around support play behind the ball: *“The depth, so if he drops back to get the pass off him”*. *“I have got depth now”*. *[CB to support the player on the ball to play backwards]*. *“In that defensive third obviously out of possession they’re trying to win the ball. As soon as they get the ball back there then have to be options anywhere in that third. They’re not trying to go forward, they’re*

*just trying to move the ball forward. He is going backwards as he has to go back to go forward or playback. So it's the depth that I need to be coaching there." "Ok, so definitely depth is something that I need to work on in that session. In possession obviously now what do I want the RB to do, or the primary player closest to the ball? What I have come in and coached was his only option because I haven't coached the shape enough from the transition".*

Kenny showed a change in support play knowledge as he identified the importance of creating depth behind the player on the ball if passing options going forward are not available.

Furthermore, Kenny developed additional tactics to play out and overcome the opposition's defensive approach by linking units and how player positions affects the next player during the moment and tactics.

*29<sup>th</sup> October 2019*

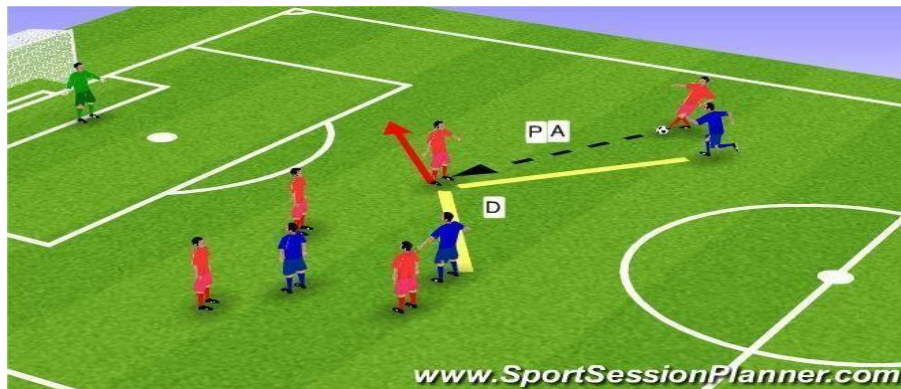
Before the second observation, Kenny sent through a session plan accompanied by some short video clips using the tactics board to demonstrate the specific strategies and tactics based on his style and system of play. The first clip showed the team's overall system of play across the whole pitch rather than just the players in the specific moment and sub-moment of the game, although he was advised to concentrate on the key units and players involved within the specific moment and submoments. Nevertheless, in the second clip he acknowledged the session would focus on the primary units within the sub-moment: *"Ok, so the GK would start with the ball taking the goal-kick. He would hit [pass the ball] to the RCB ok, then RCB would then hit the RB with a pass. After he has made that pass, he would make a support run towards the player with the ball. The CDM would definitely come towards the ball and show and be an option. And then the LCB, he would come across centrally to the edge of the box. The LB, I was looking for him just to come back and just tuck in to probably to that area there [just outside and in line with the 18-yard box] so that was sort of the shape that I wanted last week from a goal-kick going out to the right. The RB there has got a number of options; he can play it back to the right CB, he can hit the CDM, he can play it down the line preferable to the RW if he is on, he can hit the AM., and He can drop into the CF. If he is under*

*pressure. He has got that option as well to hit the RCB then over to the LCB and hopefully we can get the ball attacking down the left-side from that shape that hopefully is being created from the goal-kick”.*

Kenny’s developed moments and sub-moments of the game knowledge allowed him to explain the teams’ approach to playing out from the back with a clear strategy and appropriate associated tactics with each scenario during the sub-sub-moments of the game. In addition, Kenny displayed developed attacking principles declarative and procedural knowledge related to supporting play and creating space. Moreover, Kenny integrated the depth principle from the previous observation by securing team passing options through height and width but now also creating depth in the attack. He illustrated how the back four-unit would provide depth to support the play, a concept he struggled with during the first SR intervention. There was a clear change in declarative and procedural knowledge related to support and creating space concepts of the attacking principles. During the observed session, Kenny showed more focus on the session topic and application of the attacking principles. Kenny demonstrated his declarative and procedural knowledge had improved in terms of the attacking principles and on several occasions which resulted in some conditional knowledge through his application and justification to the players in terms of support play and creating space. Although Kenny missed a couple of incidents during the session, his overall knowledge had improved from the first session.

*7<sup>th</sup> November 2019*

Before Kenny received the video clips from the second observation, he sent through some of his reflections from the session shown in figure 7.5. His reflections highlighted how, on some occasions, he over-coached the depth principle in an attempt to demonstrate his knowledge: *“I stopped the play and asked LCB to drop back and give depth and to receive the pass deep from LB. No need to create depth here, as the angle of the pass is on and the distance from any pressure is quite far.”*



**Figure 7.5.** Diagram of reflection point (D- distance PA- passing angle).

Kenny's reflections showed a change in his support and creating space principles procedural knowledge, compared to the last observation. He was able to justify why and when players needed to support the ball. Furthermore, he displayed some incidents of support play and creating space conditional knowledge. The reflections Kenny sent through in response to each video clip showed he had developed a greater grasp of the attacking principles. This, in turn, had a positive impact on him establishing more defined and specific strategies and tactics linked to his style of play across each moment and sub-moment. For example: *“So the first thing I noticed is the LB position. There it is obviously not high and wide enough ok so I need to work on that. His first touch as well, it has taken him back towards goal, back towards the pressure when there is clearly space in front for him to drive into so he could have opened up his body and drove down the line there”*.

Within the session, Kenny did not pick up upon the initial technical and tactical errors on the ball, which led to the loss of possession, only intervening on the incorrect pass. However, observing the video clips back, Kenny identified the incorrect starting position of the LB alongside the player's poor first touch. Another example that further supports how reflecting on the clips allowed Kenny to start to compare and contrast what happened in the clips with how he wanted the team to be positioned is evidenced here: *“Goes back to the keeper here, I am looking for the LCB to split as soon*

*as he [GK] gets the ball and the LB to split as well. I can see the RCB is starting to split and I can see the RB, well I'm hoping, is going to try and get high and wide as well once the GK has secured the ball. So, there was a gap there for the GK between the opposing two players, a split pass, so he has found the CDM which is fine. Again, I think the LB could be high and wide a little bit more. The LCB obviously could have split as well a little bit to give a bit more depth but overall the GK made a good split pass there to the CDM and we began to move the ball forward and yet it finished off there. Just one point on there, I do see the RB and LB come in centrally a lot and it is not really how I want to play. I don't really want to see the LB and RB in the centre of the field in line with the CB's position so again they're coming inside the pitch a bit too far for me. So again I would need to work on the LB and RB position in relation to the way I play and the video I sent on the tactics board a while back ago".*

Kenny's development of declarative strategies, tactics and players' specific positioning knowledge within the moment and sub-moment signified his developed knowledge of the principles of play and style of play. Moreover, he became critical of some players not in the desired position despite the team having played out successfully. The SR clips started to show the development of his tactical knowledge and observational skills because he started to focus on the players and actions off the ball. Having fewer players in the sub-moment of the game allowed him to focus upon how he wanted the team to play.

The tactics board was a valuable tool within the SR process as it allowed him to reflect and illustrate what he wanted to achieve and consolidate what had happened. Within SR reflections, Kenny demonstrated a significant change in his tactical declarative and procedural knowledge. Within the five-week timeframe with the support of applying a GM approach, he had developed his knowledge of the moments, sub-moments, and sub-sub-moments of the game alongside associated principles of play. Furthermore, Kenny identified his style of play and applied some strategies and tactics linked to his style of play within the moments and sub-moments of the game.

There was a significant difference in Kenny's knowledge between the first and second SR processes. Within a short space of time, he had developed his declarative and procedural knowledge of the moments of the game, alongside providing clarity about the desired player behaviours he desired within each moment and sub-moment of the game. Through SR videos, he compared and contrasted what he wanted to happen to the actions performed by the players. However, within some practice instances, he lacked conditional knowledge and was unable to identify player actions that did not align with the desired tactical behaviours. The most significant change during the second intervention was Kenny's knowledge of the attacking principles. Kenny had developed declarative and procedural knowledge of the depth principle, which allowed him to address several issues with both the CB's and FB's at different times within the session. The principles of play are fundamental to game understanding; until a coach has developed this knowledge, it is challenging for a coach to decide on the appropriate strategy and tactics.

*28th November 2019*

Observation three and SR highlighted the clear development of Kenny's declarative and procedural knowledge of the moments and sub-moment of the game, system of play, and style of play. Furthermore, it highlighted the continued development of principles of play conditional knowledge.

Kenny had started to explore different sub-moments of the game, specifically the attacking third. During the pre-session videos and within the session, he continued to show his developed understanding of the attacking principles of play and clear team tactics required in the attacking third. Kenny's knowledge within the pre-session videos demonstrated how he split the sub-moments further into sub-sub-moments of the game and explained the tactics employed when attacking the right and left channels: *"Pattern and play here starting with the number 10, the left attacking midfielder. Looking at the defensive unit here [of the opposition], the RB again is going to be key in this movement on his decision. If the right-back stays where he is, the left-winger is going to be in a space to receive the ball down the left channel and we can start the attack from there". "What I am looking*



*for is for the 10 to recognise this with my two attacking midfielders. I know they can as if the right-back has marked the left-winger too closely, the pass behind the right-back is on straight away for the left winger to get in behind. So that is just working on the left attacking midfielder and left-winger. Just two different options there depending on what the right-back does".*

This illustrates the layers of procedural knowledge Kenny had started to develop and build upon since the start of the intervention, with a specific focus on the sub-moments of the game and definitive strategies and tactics. Kenny demonstrated how he would coach the left side after explaining the tactics down the right side and splitting the game down into sub-sub-moments. In addition, he gave players the option to decide on the appropriate pass depending on the actions of the opposition players.

*8th January 2020*

At observation four, Kenny continued to exhibit sustained declarative knowledge around key tactical knowledge concepts, continuing to add additional layers of procedural knowledge into his demonstration, explanations and reflections. Once more, the fourth session focused upon an attacking sub-moment and the additional sub-sub-moments. He explained the team's overall system of play before specifically focusing on the player and units within the sub-moment. A key example of the additional layer was how he added thoughts about the opposition: *"Attacking in high and wide areas I have got it set up here on the tactics board. I will just go through my formation: it's a GK 4-3-3- against a team GK 4-4-2"*.

The third session only focused on his system of play (1-4-3-3) without considering the opponents' system, however now he started to explore how the team would employ the appropriate strategies and tactics against a team playing a specific way. Moreover, Kenny displayed some conditional knowledge as he was able to justify different actions required to combat the actions and behaviours of the opposition when using his approach.

Kenny revealed his tactical knowledge through several interventions, making some good attacking principles coaching points about his desired strategies and tactics, linked to his style and

system of play. In addition, within his SR reflection, he justified his approach to stepping in and coaching a particular moment with the centre forward (No.9) in terms of support play with the other players: *"When the cross comes in, LW hits a good cross into the near post area. The CF happened to be Ian at the time. He controls the ball, he takes a touch and he has now got his back to goal so he had no time to turn. He probably could have laid the AM off, but he tried to turn or do something and he just lost possession". "So, I said it was a great run to get across the CB and he received the ball but once he started going away from the goal he was trapped by the CB. I just said simply put it back to the LW". "Just play it back to the LW and then spin-off maybe back post or centrally because that winger is still going to put the ball into the dangerous area. So I just said in that moment try and do the simple thing. If you can't turn and shoot or lay it back for anyone just play it back to where it came from and it came from the LW. So that was a point for my CF, the primary player".*

This highlighted his conditional knowledge in terms of the attacking principles and support play and creating space and ability to work with the primary player (CF No.9) and supporting secondary players to retain possession.

In terms of detail and terminology, Kenny used more appropriate terminology and showed more depth and detail in his justifications and explanations. Overall, he demonstrated more clarity in strategies and tactics employed, players' actions, and the players' roles and responsibilities within the team's style of play. The first four observations revealed several critical incidents that illustrated a significant change in his moments of the game, sub-moments, principles of play, strategies, and tactics knowledge. However, within the next couple of observations, the rapid change in knowledge had plateaued. Nevertheless, what Kenny had started to demonstrate is more consistent knowledge across a number of the game model main concepts within the practice.

During the fourth SR interview, Kenny was asked how he was finding the SR process; *"The videos helped massively to see what I had missed during the session". "It helped out, especially to show which players are out of position with how I want to play. When I did the session again, I was waiting for the FB's to come inside in possession and then obviously I went in and*

*coached them. For me, as a coach, I was looking a lot less at the ball on Tuesday and just drilled into watching the centre-backs and full-backs in and out of possession”.*

The SR process had become a useful tool for Kenny as it allowed him to focus clearly upon specific moments of the game and the preferred strategies and tactics. He had become more critical in his observations and reflections. As Kenny’s knowledge developed, he became clearer and more concise with his interventions.

*28th January 2020*

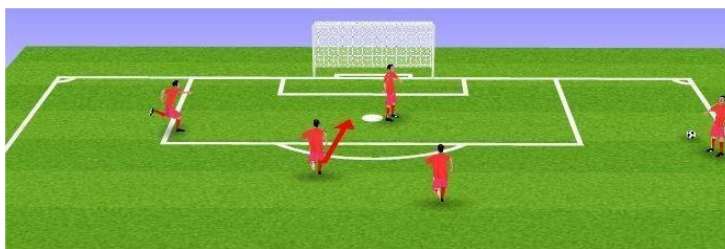
Since the beginning of January, Kenny had begun to send through weekly pre-session videos, session plans, and also post-session reflections of incidents of his own accord. Kenny had now established a connection between his GM, what the team had worked on in training, and if the players had executed the desired strategies and tactics within the game. For example, *"Match-day reflection video: just a couple of points I want to make from Sunday's game away to Orford. Their formation was 1-4-4-2. The formation we played was 1-4-3-3, so the last couple of weeks we have been working on attacking from wide areas".*

This reflection video quote showed how he had analysed the opposition's system of play and worked on the team’s strategy and tactics in preparation for the game. Furthermore, Kenny set up a scenario for the team in training to play against a 1-4-4-2 system, within a specific sub-moment and subsubmoments (playing in wide areas). This developed knowledge permitted Kenny to reflect on the different situations that occurred during the game and analyse the players’ actions to the desired strategies and tactics. His developed declarative and procedural tactical knowledge across several of the concepts allowed him to create different game scenarios in training.

Kenny continued to develop his observational skills within the specific moments and submoments of the game: *"The right-winger (RW) had the ball and the right-back (RB) made a good overlapping run. The RW put the RB in down the line and the RB just put it into that area. It got cleared by the defender, it went ahead of the striker (S). The Left winger (LW) was coming in the*

*back post as it just got cleared. What I did notice was the two attacking midfielders (AM) weren't getting up so none of them were getting into the box. It was just the S and LW".*

Figures 7.6 and 7.7 and supporting quotes taken from the session plan showed how Kenny was able to distinguish the players' positions and actions in specific sub-moments of the game which he had developed within previous training sessions and deemed them correct or incorrect.



**Figure 7.6.** Example 1



**Figure 7.7.** Example 2

*"As soon as the 7 has received the pass, this should trigger the 10 to start getting in centrally into the box". "The 7 is now just about to cross the ball. This should trigger the 9 to make a near-post run or a central goalmouth run depending on where he thinks the best possible space is to attack into. Timing of the run is important as he doesn't want to make this run early and wait as long as possible to have more of a chance to reach the ball first from any defenders marking him".*

Despite Kenny's accelerated development of declarative and procedural knowledge of the moments, principles of play, systems, styles, strategies, and tactics over the last few months, there have still been some lapses in practice. Although within some of the sub-moments of the game he has started to develop conditional knowledge, with other topics or newer concepts there is still some

disconnect between what he wanted and what actually happened during practice. However, it is also important to mention that learning is not a linear process, and at times it can be expected for intermediate coaches to have some relapses in knowledge, even within successful periods of knowledge development.

*4th February 2020*

In contrast to the start of the intervention, Kenny's knowledge has developed. Through applying the game model, he has segmented the game down into the sub-moments and subsubmoments of the game and his associated strategy and tactics within each moment. Although Kenny had not worked on the support and movement of the attacking players identified from last week's game, it was encouraging to see his continued focus upon this sub-moment of the game and follow up on his observation before the next game discussing with the two attacking midfield players how he wanted them to attack and support the ball. *"On Sunday, I spoke to the 10 and 8 before the game about last week's match and just went through on a miniature tactics board about trying to react quickly to get into the box if the CF or winger gets close to the by-line and looks like they will cross the ball in". "Jordan said he would make this run just before the delivery of the cross. I just informed him it may be a bit late to get in then and to try to make this run earlier, well before he is about to cross, maybe when he's receiving the ball".*

Through the use of a tactics board, Kenny was able to demonstrate how he wanted both the attacking midfielders to make an attacking run to support the ball. For Kenny to apply this approach with the players showed his confidence and belief in his knowledge developed and more specifically how and when he wanted the players to support the ball. Moreover, he further justified his explanation by describing why the player would have to make an earlier run than the player suggested. Although Kenny did not work on two key players during the observation, he was able to demonstrate his continued development of declarative and procedural knowledge around his team's style of play, strategy, and tactics. Furthermore, continuing to show his knowledge and understanding of players within the particular sub-moments. He had continued to show much more consistency with

what and how in practice and also identify the player's decisions and actions in games. To further develop, he needs to identify in both practices and games the situations as they occur to impact the players' actions.

*26th February 2020*

Kenny sent through an interesting post-match day reflection from the cup game in which his team lost 3-2 but discussed how he had changed the system during the game. *"We went 1-0 up quite early on from Ian scoring back post from a corner. We hit the bar and had a goal ruled out for offside, had chances to make it 2-0 but never took them. It was the first time that we have changed the formation during a game with 10mins to go from a 1-4-3-3 to 1-4-4-2".* While Kenny had changed his preferred system of play during the course, this was the first time he had decided to change his system of play during a game to affect the outcome of the game. The decision came around due to the time left in the game and the score line:

*"I liked how taking out the 6 and then going with two up front didn't really disrupt the shape much, and from crosses out wide, there were now 2 strikers attacking the cross, which is how we got the 2nd goal". "I wouldn't necessarily now change to a 1-4-4-2 but it looks like quite a good adjustment to make sometimes during a game, just to get more players into the box from crosses".*

Moreover, Kenny was able to justify changes made to the team's system of play for the final 10 minutes of the game to try and get an equaliser in the game. He discussed what he liked about the change and how it allowed him to keep two strikers up the field, however, stating how he would not change to a new system of play at present.

*Tuesday 17<sup>th</sup> March 2020*

The next observation was planned for Tuesday 17<sup>th</sup> March, however, due to the Covid-19 pandemic all coaching ceased and the intervention strategy paused until August once the Football

Association had given the green light for grassroots football to commence. The researcher contacted Kenny in mid-August, but Kenny asked for a couple of weeks to get back onto the grass coaching before arranging the next observation as he had not coached since March and felt out of practice.

*Tuesday 25<sup>th</sup> August 2020*

The researcher was concerned that Kenny's declarative and procedural knowledge would have regressed due to the long break from coaching. However, Kenny sent through several pre and post-session clips from the first few sessions since lockdown, and the level of detail and how he wanted the team to play was not only consistent but he had added more advanced knowledge around several tactical concepts. In the first post-session reflection, Kenny highlighted his system of play during the transition from defence to attack moment, which was a new topic for him. The choice of topic demonstrated his developed knowledge across the different moments of the game, and new confidence in his approach. The session focused on the primary and secondary players involved in the session, demonstrated continued knowledge of the principles of play, and his application of strategies and tactics linked to his desired style of play.

*"What I did was I stopped it once the right-back was receiving the ball and the right-winger was central again. He was not getting out wide as soon as the right-back was receiving the ball. So what I did was I just went in and I explained and said as soon as the right-back has got the ball, I'm looking for you to be as far wide as possible on the touchline to be able to get onto the lofted pass over the top".*

Again, Kenny had a clear idea of how he wanted to play within the moment of the game and gave tactical instructions for players to perform. His preserved knowledge was further observed when he identified the right-wing did not apply the width attacking principle by creating space for the rightback to play the ball.

9<sup>th</sup> September 2020

Kenny sent a reflection video, using the tactics board to highlight the moment of the game (topic) and primary players. He had another section with the title of the attacking principles in which he highlighted four out of the five attacking principles. Moreover, next to each of the principles he had the players' numbers and their roles within the specific moment: *“What I noticed was when the RB was getting high and wide, the other LB was actually mirroring it so they were both getting high and wide so it was good to see the LB recognise what the RB was doing. So, the RB has given me width there as he had received the ball. The secondary player RW was making an in-to-out run, getting out wide, looking across the line staying well onside. He is a fast player so his speed is obviously going to be key for him to penetrate or exploit the space in behind down that right channel”*.

Kenny's knowledge in action was observed as he clearly allocated players to the desired tactics and the actions and behaviours required. More significantly, it demonstrated Kenny's clear declarative and procedural knowledge of the attacking principles and how these principles are employed within his style of play. Moreover, session clips demonstrated a deeper understanding of multiple key areas of Level 3. His observation skills had improved and within each moment, he understood what was required of the players to achieve his strategies and tactics. It would appear that through lock-down, Kenny had consolidated his knowledge and had a chance to reflect on the key areas of the GM and develop his tactical knowledge of the game.

15<sup>th</sup> of September 2020

The excerpt below was taken from the pre-observation video, illustrating the clear transformation of Kenny's overall tactical knowledge that he developed over the last 12 months: *“Primary player CF no.9, secondary player LAM no.10. So again, on the transition, as soon as the GK has got the ball the two FB's should be splitting. They have been working on this so hopefully, they will be doing this tomorrow night. The GK is going to throw the ball to the RB as soon as the RB has received the ball. The right-winger is getting high and wide so is the left-winger. At this moment,*



*what I am looking to happen is the no.2 [RB] to travel with the ball. Then, the no.9 is going to show for the ball. He is going to drop in, in-between the lines. He is going to receive the ball off the no.2. He is going to control it and shield the ball if he is under pressure. Then he is going to lay it off to the no.10. He [no.9] is going to spin centrally forward. Then no.10 is going to receive the ball. Hopefully, it is going to be on his preferred foot, which is his left. I think it's far easier to try and hit the diagonal either over the top for the winger to get in or even better along the floor for the winger to get in [rightwinger]”.*

The specific technical and tactical detail Kenny highlighted during the moment and sub-moment of the game showed his tactical declarative and procedural knowledge development. There was a significant change in the use of terminology to explain specific tactics with an enhanced level of detail to the players. The specific tactics, knowledge, and terminology used when explaining how he wanted the striker (no.9) to play displayed an advanced knowledge: *“The no.9 is going to show for the ball. He is going to drop in in-between the line. He is going to receive the ball off the no.2. Then he is going to control it, shield the ball if he is under pressure and then he is going to lay it off to the no.10 and he is going to spin centrally forward”.*

He had started to apply football-specific jargon and terminology such as players ‘splitting’, ‘travelling’ with the ball, ‘shielding’ the ball, and ‘in between the lines’. Sometimes, when coaches use football ‘jargon’, it is picked up from other coaches and media platforms without an actual understanding of the meaning or application (procedural knowledge). However, Kenny demonstrated a clear understanding and application of the specific tactic. The level of detail in the tactical explanation observed further illustrated his progressive knowledge and understanding in practice. The development of knowledge was further verified when Kenny recreated a scenario that happened in the practice involving the no.9 and highlighted how the striker had dropped in-between the lines to show for the ball: *“Fantastic play CF no.9, dropping in showing for the ball. I like that bit of movement there. You got the ball, you turned sharply, and you laid-off”.*

Moreover, a significant moment occurred when his knowledge was demonstrated in dialogue with the other coach (John).

**John** *“Only a thought, I don’t want to interrupt”.*

**Kenny** *“Go on, tell me”.*

**John** *“How about switch Max, as he will be holding his position better?”*

**Kenny** *“Well, I will just stick with Max because he is the 9 today. I’m working with him. If I just suddenly change him out wide, I mean it’s just going to confuse him”.*

**John** *“Well, yes, but it’s just he is playing like a midfielder isn’t he?”*

**Kenny** *“Well he is dropping in, isn’t he? He is coming short for the ball, so that’s fine”.* This moment was significant because, in earlier observations when discussing incidents, Kenny would often take on board John’s advice or recommendations. John was seen as more senior by both the players and Kenny, however, Kenny delivered most of the sessions. The relationship replicated John as the manager, who picked the team, and Kenny the coach, who delivered all the sessions.

Moreover, with this incident, there seemed a power shift due to Kenny’s advanced tactical knowledge of the game. John did not understand what Kenny was trying to achieve or understand the principle of the striker playing in-between two units to try and disrupt the opposition defence. Kenny demonstrated his conditional knowledge and stood by his chosen tactical decision of how he wanted the striker to play in that specific moment of the game.

## **Discussion**

### *Principles of play*

The most significant change in Kenny’s tactical knowledge related to principles of play. This change was observed by the researcher and Kenny during the post-stimulated-recall interview. When asked what the most important change was in his tactical knowledge, he replied: *“When I understood attacking principles and defensive principles and read up on them. Understanding principles. The*

*most important thing is understanding the principles of play and just knowing exactly what they are. I mean, I've heard of them. I thought I knew, but I am actually understanding them now”.*

Furthermore, Kenny acknowledged at beginning of the course he thought he knew the principles of play but soon recognised his lack of knowledge. The second observation and SR interview illustrated the most prevalent change in his attacking principles declarative and procedural knowledge. Before the second observation, Kenny was asked to send through a session plan focusing upon one specific moment and sub-moment of the game. This was followed by short videos demonstrating his specific strategies and tactics of how he wanted the team to play through the use of a tactics board implementing object learning (Reading, 2008; Chatterjee, 2010 Chatterjee et al., 2015).

Through the tactics board explanation, Kenny illustrated a greater understanding of the attacking principles of support play and creating space. He focused on creating passing options through pitch height and width but also depth in the attack provided by the positions of the back four unit. The depth principle is a concept he lacked knowledge of within the first SR, thus highlighting a change of attacking principles declarative and procedural knowledge of support and creating space (Wade, 1996; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016; Price et al., 2019; 2020; Nash et al., 2006).

The change in principles of play knowledge had a positive impact on the development of his strategic and tactical knowledge. Kenny was able to state all the attacking principles of play when questioned in the post-intervention interview, further confirming his developed declarative knowledge. By the end of the intervention strategy, Kenny was able to link both the attacking and defensive principles of play to the different moments and sub-moments of the game and demonstrated conditional knowledge in practice. The changes in principles of play declarative and procedural knowledge were evident throughout the study, even more so within the intervention time frame. Furthermore, at the post-intervention interview, he felt that understanding the principles of play was imperative in improving his overall tactical knowledge. This evidence suggests that to learn

the different tactical concepts of the game, the staged approach in the GM and conceptual framework acts as a positive approach. Moreover, until a coach has developed sufficient knowledge of the principles of play, it is difficult for them to decide on the appropriate preferred style of play and chosen system. Furthermore, the success of the coach's strategies and tactics with their team is directly related to their understanding of applying the principles of play (Price et al., 2019; 2020; Wade, 1967; 1996; The FA, 2016; Hewitt et al., 2016; Delgado-Bordonau, et al., 2012; Tee et al., 2018; Gréhaigne et al., 1995; 1999; Bouthier, 1988; Yiannakos et al., 2006; Carling et al., 2007).

### *Systems of play*

Kenny stated that he was unaware of a number of the topics, especially in terms of units, primary players, and secondary players at the start of the course: *"I know others on the course were asking, 'can we have more information on primary and secondary players'. [I don't know] whether I was in the same boat as anyone else on the course, but it was just completely new to me. I don't even think there's anything explaining it online or anything"*.

Kenny highlighted how he was not the only person lacking knowledge of the primary and secondary players. Additionally, Kenny felt alongside understanding the principles of play, the Eureka moment in his knowledge development was the ability to identify the primary and secondary players in each specific moment of the game. Kenny also identified the understanding of how styles and systems of play entwine as another significant area of knowledge development on the course: *"Having a focus on exactly how I want to play, I had an idea but sort of dissecting exactly what you want to do in possession and out of possession with my formation changing from 4-1-4-1 to a 1-4-3-3. I just think, again, I had an idea how to play it, but I never just went and just focused absolutely on transitions like the fullbacks and wingers from in possessions to out of possession coming in and out"*.

The extract supports findings relating to Kenny's change in knowledge about how he wanted to play in each of the moments and sub-moments of the game. Kenny highlighted he initially employed a 4-5-1 system of play out of possession, which turned into a 4-3-3 when in possession.

However, the 4-141 system had emerged through his research and was followed by him adapting the system to meet the players' characteristics. This meant that out of possession, the team employed a 4-1-4-1, but in possession changed to a 1-4-3-3 or depending on the sub-moment of the game to a 1-4-1-5 (Wu et al., 2019; Machado et al., 2017; Müller-Budack et al., 2019; Bialkowski et al., 2016; Wilson, 2010; Bangsbo & Peitersen, 2000).

### *Styles of play*

The change in system aligned with his preferred style of play: *“The style of play was a sort of fast, direct, organised attack - the northern European style”*. Kenny had read up on several styles of play such as tikka taka and long ball but decided upon a fast, direct style, which involved getting the ball in behind or in the channels based upon a German style of play that he felt suited his players. However, with the new goal-kick law change and the improvement in his team, he decided upon a more possession-based approach (Bate, 1988; Hughes et al., 2005a; Redwood-Brown, 2008; Ruiz-Ruiz et al., 2013; Tenga, et al., 2010; Travassos et al., 2013; Hewitt et al., 2016; Fernandez-Navarro et al., 2018; 2016; The FA, 2016).

Within the intervention process, once Kenny understood the attacking principles, he started to develop his knowledge around how principles, styles, and systems of play, strategies, and tactics in relation to the primary and secondary players within the specific moments all interlinked.

*“I thought the principles of play, attacking and defending, are about how your style fits in with the principles and then the primary and secondary players. I think that was the one that jumped out where it was just so hard to understand”*.

Once Kenny started to understand the principles of play, this cascaded into the development of the other tactical concepts. He started to illustrate this around the second observation, when linking styles to the principles of play, he showed how he wanted to play within each moment and sub-moment. In addition, he identified and understood which primary unit to work with, and the primary and secondary players in each sub-moment. This was seen as a significant moment that facilitated his development of tactical knowledge. This was further reflected by Kenny; *“I think once you nail down*

*exactly how you want to play, it just becomes a lot easier - once you start understanding all the attacking and defensive principles. It's just you can word it better. You understand it better. You know the players are getting the message."*

Kenny emphasised that once he understood exactly how he wanted to play, it was easier to get the information across to players. Subsequently, players started to process the information, which led to an improvement in the team's performance. The players had started to develop principles of play knowledge via Kenny's chosen strategies and tactics, which focused upon the importance of when in possession, the team making the pitch wide, and out of possession, making the pitch narrow and compact. The actions and behaviours of the players were also observed by the researcher during training and games (Delgado-Bordonau et al., 2012; Giske et al., 2015; Richards et al., 2017; Price et al., 2019; 2020).

A prominent example of Kenny's systems and styles of play knowledge development occurred through a match day reflection: *"We went 1-0 up quite early on from Ian scoring from the back post from a corner. We hit the bar and had a goal ruled out for offside. We had chances to make it 2-0 but never took them. It was the first time that we have changed the formation during a game with 10 minutes to go from a 1-4-3-3 to 1-4-4-2" (26th February 2020).*

Although Kenny changed his preferred system of play during the course, this was the first time he had decided to change his system of play during a game, to affect the outcome of the game. The decision came about due to the time left in the game and the score line: *"I liked how taking out the 6 and then going with two upfront didn't really disrupt the shape much, and from crosses out wide, there were now 2 strikers attacking the cross, which is how we got the 2nd goal". "I wouldn't necessarily now change to a 1-4-4-2 but it looks like quite a good adjustment to make sometimes during a game, just to get more players into the box from crosses" (26th February 2020).*

Kenny showed his knowledge by justifying the changes made to the team's system of play for the final 10 minutes of the game in an attempt to equalise. He discussed the merits of the change, concluding how the change allowed the team to keep two strikers up the field both in and out of

possession. However, he stated at present he would not change to a new system of play (Price et al., 2019; 2020; Hewitt et al., 2016; Bouthier, 1988; Yiannakos et al., 2006; Carling et al., 2007; Grehaigne et al., 1999).

From the first observation, Kenny revealed a key action was to develop his tactical knowledge of the game. With this, he started to study and explore a range of different sources such as books, online sources, playing football-related video games, all of which allowed him to expand his knowledge and explore systems of play. As aligned to the literature, authors suggest coaches are deemed to construct knowledge through a range of both informal and non-formal learning platforms (Nash et al., 2006; Cushion, 2011; Gilbert et al., 2009; Stoszkowska et al., 2015).

The first three observations demonstrated Kenny's accelerated development of his moments, principles, systems and styles of play declarative and procedural knowledge, however, between observations three and four there had been some lapses in practice. Although within some of the submoments of the game he started to develop conditional knowledge with other topics or newer concepts, there was still some disconnect between what he wanted to happen and what was happening in practice. Moreover, as learning is not a linear process, at times it would be expected for intermediate coaches to have some bumps along the way even within successful periods of knowledge development (Veenman et al., 2006; 2014; Nash et al., 2006; Price et al., 2019; 2020; McPherson et al., 2004; 2007; Kreber et al., 2000).

Whilst acknowledging that he knew the course would not be easy, Kenny stated that he found the Level 3 journey a more challenging experience than he initially thought. At times he felt it was very difficult, consuming, and full-on, and as a result of this, he struggled. However, he felt that his tactical knowledge and game understanding had significantly developed and improved over the two years completing the course (Anderson, 1982; Kreber et al., 2000; Nelson et al., 2013; Nash et al., 2006; Côté et al., 2009; Stoszkowski et al., 2016; Price et al., 2019; 2020).

### *Game Model*

Another key finding highlighted the significant impact of the GM on Kenny's tactical knowledge development: *"Well, I think that's the key. When you break it down and drill into something [sub-moments] specifically and then you move on to the next one and then after five or six of them it all links into how you want to play. So I've got to say, I thought it was really good that game model that you sent me, it really helped"*.

The GM allowed Kenny to break the game into sub-moments and sub-sub-moments, and focus specifically on how he wanted his team to play in each moment and the player's tactics and strategies required. Furthermore, the process assisted Kenny to identify which unit to work with and who the primary and secondary players were within the sub-moments. This change in knowledge correlated with the start of the intervention strategy and when he started to create his GM (Hewitt et al., 2016; Fernandez-Navarro et al., 2016; 2018; Delgado-Bordonau et al., 2012, 2016; Tamarit, 2015; Tee et al., 2018). Moreover, as the intervention strategy progressed, Kenny displayed a greater understanding across each sub-moment of the game. The GM allowed him to deconstruct the game into more manageable moments, before demonstrating the knowledge to build the moments back up into 11 vs 11 games. He was now able to focus on aspects away from the ball, providing further tactical actions for other player positions and units within the current sub-moment and subsequently understand how the moments linked together (Price et al., 2019; 2020; Wade, 1967; 1996; The FA, 2016; Hewitt et al., 2016; Delgado-Bordonau et al., 2012).

### *Intervention Strategy*

Kenny felt that the SR had a significant impact on his development as a coach in the last year. Kenny felt using technology to film the sessions helped him to reflect and develop as a coach as he had never seen himself coach before. Moreover, he found the process enjoyable, in particular sending videos to the researcher demonstrating on the tactics boards how he wanted the team to play. He further enjoyed analysing the clips from the session sent through from the researcher and reflecting



and comparing them to his earlier clips (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011; Wolcott, 1995).

The SR became an instrumental tool for Kenny, as it permitted him to focus upon preferred strategies and tactics within specific moments of the game. He had become more critical in his observations and analysis skills, which led to clearer and more concise reflections as his knowledge developed. Moreover, after the fourth observation (January 2019), Kenny's confidence had grown; he started to send through weekly pre-session videos, session plans, and post-session reflections of incidents of his own accord. In addition, he started to focus on matches, sending through his reflections and demonstrating incidents he had identified within the game that became the focus of the next practice session. The SR process had, therefore, shifted from researcher-led to coach-led.

Kenny's declarative, procedural, and conditional knowledge significantly changed throughout the course but more considerably over the intervention strategy time frame. Kenny, supported by the development of his game model had developed his knowledge of how he wanted to play in each moment of the game, he developed specific strategies and tactics for each sub-moment and integrated his desired style and system of play. Moreover, Kenny felt that the biggest change of knowledge occurred over the last 6 months, but believed it was not until a year into the course he started to grasp the concepts (Brunning et al., 2004; Reynolds, 1992; MacIntyre et al., 2014; Cushion et al., 2003; McPherson, 1994; Price et al., 2019; 2020).

## **Chapter Summary**

The study explored whether an adapted Game Model might serve as a useful conceptual framework for the development of intermediate football coaches' tactical knowledge and game understanding. Findings suggest that the GM had a noteworthy impact on the coach's knowledge in this longitudinal case study. The paramount change in tactical knowledge occurred after the start of the intervention strategy and once the coach had started to construct the GM. The GM model allowed the coach to break the game down into more manageable components. This allowed him to focus specifically on selected strategies and tactics and how he wanted to play across the different moments

of the game, which in turn had a positive impact upon the team's performance (Delgado-Bordonau et al., 2012, 2018; Tamarit, 2015; Tee et al., 2018; Giske et al., 2015; Richards et al., 2017).

Furthermore, findings suggest the intervention strategy had a positive impact on the coach's development. The SR process with the use of technology and object learning allowed the coach to reflect and analyse their practice and compare what he wanted to happen against what happened in practice (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011; Wolcott, 1995).

Finally, the findings of the current study suggest the most significant change and impact upon the coach's tactical knowledge were understanding the principles of play. A coach needs to be able to demonstrate both declarative and procedural knowledge and apply the principles in practice to show conditional knowledge. Moreover, this change in knowledge had a significant impact on the development of the other tactical knowledge components. The findings highlight that once the coach understood the principles of play, he was then able to link the principles to his style and system of play, which in turn enabled him to develop his desired strategies and tactics within each moment and sub-moment of the game (Wade, 1996; Hewitt, et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2017; Price et al., 2019; 2020; Gréhaigne et al., 1995; 1999; Yiannakos et al., 2006; Carling et al., 2007).

### **Meta-Reflection 3**

*Throughout the study, engaging in both critical reflection and reflexivity gave insight into my interpretations made throughout the study and also key feelings during the process. Transcribing the participant observations and SR process was once again very time consuming and a challenging process and involved trying to explain what the coach demonstrated or explained at times due to the brief descriptions given. The data collections methods produced circa 100,000 words across the intervention strategy. From a reflexive position, I had to endeavour to explain exactly what the coach demonstrated with their actions and explanations but also how this related to the principles of the game. Furthermore, my interpretations were based on observations and wording by the coach and*

*anything I was unsure with I asked for clarification rather than just making judgement. Analysing the data after each event served well in the analysis process, however, with gaps in between the analysis and final write up it was important to revisit study notes, reflections and the video clips in sections that required further clarity or to recall incidents. An area of reflexivity I continued to find challenging was the process of crossing fields. As with studies one and two, I was too focused as a researcher in the first SR interview and following protocols and process-driven.*

*Through critically reflecting on the SR process applied in the first intervention strategy, an adapted approach was applied for the second intervention. Firstly, although the first SR intervention took place in a private room at the coaching venue arranged by Kenny, it was felt that Kenny may have felt under pressure from being observed or overheard by the other coaches, players, or the parents. Furthermore, due to Kenny's level of experience, it was felt by the researcher that asking the questions in the environment may have added pressure to the process when being put on the spot. With this, it was felt an adaptation to the process would allow Kenny to feel under less pressure and focus more on the clips in his own space and time and also speed up the process. The adapted process had been introduced before the second coaching session through a phone conversation between Kenny and the researcher. Nevertheless, it was felt that a short guide with a step-by-step process would benefit Kenny in the reflection process. A further consideration that supported the amended process of the SR process was down to the location.*

*Further meta-reflection on the SR process, the role of the researcher was to be an active listener, however, at times within SR 1, the coach switched between the active listener and coach educator to support and guide Kenny as he seemed to freeze through either lack of knowledge or the pressure he felt within the situation and location. Moreover, I wanted to create a process I could apply in the real world and that other coach educators and mentors could employ to support coaches' development and also something that the coaches could do. The first SR process was too timeintensive and delayed the process alongside not being practical. From this point forward within the study I was now able to strike a balance between researchers and coach educators.*

*The SR process is something I continued to do in practice as a coach educator away from the study and continue to apply. The use of recording the coach served well and support the coaching process. Even the recording of small chunks on a mobile phone has served useful for the coaches I have supported and mentored. The approach has even permitted coaches to be recorded by fellow coaches or parents and served as a key reflection tool. It has further allowed coaches to send through clips that have been recorded for them to illustrate their progress, ask for support on specific areas of practice or gain general feedback on their coaching practice.*

## Chapter 8: General Discussion

### *Purpose of the Research*

Modern coaching pedagogies advocate the proposition that variable, random and gamerelated approaches result in greater accuracy and consistency of skills as opposed to traditional methods of deliberate and constant practices (Williams et al., 2005; Passos et al., 2008; Davids et al., 2001; 2010; Christensen, 2009; Renshaw et al., 2018; Lee et al., 1985; Light et al., 2010; 2015; Pill, 2016). However, for game-based approaches to be an effective method of practice, it is paramount for coaches to have sufficient tactical knowledge of the game (i.e., moments of the game, principles of play, styles and systems of play). Furthermore, they are required to understand the significant impact and challenges that space, time and organisation pose on a team's strategies and tactics across the different moments and sub-moments of the game (Gréhaigne et al., 1997; O'Donoghue, 2008; Garganta, 2009; Wade, 1967; 1996; Delgado-Bordonau, et al., 2012; Hewitt et al., 2016).

Although previous research has explored how and what knowledge coaches require, the majority of studies in the field have explored the novice vs expert paradigm. There is still a considerable lack of studies around how novice and intermediate level coaches' best develop their knowledge. Moreover, despite the increased interest in coaching practice, concepts of sport-specific knowledge are an underexplored area of research that requires further investigation, as existing research has not given adequate attention to what tactical knowledge football coaches require and how coaches develop tactical knowledge. The importance of developing extensive tactical knowledge is considered a significant factor for coaches on their journey from novice to elite (Galanter et al., 2005; Lyle, 2005; Vergeer & Lyle, 2009; Kaya, 2014; Stoszkowskia et al., 2015; Walker et al., 2018; Nash et al., 2006; Wright et al., 2007; MacDonald et al., 2008; Stodter et al., 2017).

Therefore, the overall aim of the thesis was to analyse, support and develop football coaches' tactical knowledge in practice, exploring what, how and when novice/intermediate football coaches develop their tactical knowledge. Furthermore, it aimed to explore if a conceptual model and

framework could act as a support mechanism to aid tactical knowledge development of football coaches.

The overarching purpose was achieved by working on the following four definitive objectives: 1) The development of a conceptual framework and model to advance tactical knowledge; 2) An investigation into the baseline tactical knowledge of coaches at the start of a Level 3 course; 3) The analysis of coaches' tactical conditional knowledge in practice; 4) The use of an intervention strategy to support the development of coaches' tactical knowledge.

The findings in this chapter will be presented as follows: 1) The key findings of the thesis in relation to existing literature and current knowledge; 2) Limitations and future research opportunities; 3) The key findings concerning the impact on practice.

## **Key Findings**

### *Tactical Knowledge*

The key findings from the thesis suggest the moments of the game and principles of play are the most significant concepts of tactical knowledge. Coaches are required to demonstrate and apply both declarative and procedural knowledge of the moments of the game and associated principles of play in order to display conditional knowledge in practice. Findings illustrated that coaches who displayed more advanced knowledge of the moments of the game and principles of play were able to demonstrate greater knowledge of the other concepts of tactical knowledge. Hence once a coach understands these two key concepts, they are more capable of applying the principles of play to appropriate styles and systems of play, which in turn enables coaches to develop desired strategies and tactics across each moment and sub-moment of the game (Wade, 1996; Hewitt, et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2017; Price et al., 2019; 2020; Gréhaigne et al., 1995; 1999; Yiannakos et al., 2006; Carling et al., 2007).

### *Baseline Knowledge*

Findings from Study 1 illustrated that the majority of coaches were unable to define key terminology used within the literature and coach education to discuss key concepts of tactical knowledge when questioned. However, all coaches were able to exhibit the application of several tactical concepts of the game when demonstrating how to apply the principles of play, systems and styles of play in the moments of the game. Although coaches were able to display the application of the attacking and defending principles, they revealed a lack of declarative knowledge when attempting to define the principles of play (Nash et al., 2006; Yiannakos et al., 2006; Carling et al., 2007; Tamarit, 2015; Delgado-Bordonau et al., 2012; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016). This variability further illustrated that not having universal terminology or language across different practice settings and academia impacts coaches' knowledge development and understanding of the terms. Hence one of the aims of the conceptual framework and Game Model in chapter 2 was to align the concepts under the tactical knowledge umbrella to support knowledge development.

A second key finding of the study highlighted that at the start of the course, coaches described having one style of play and only considered one moment of the game. The majority of coaches described having an attacking style of play such as direct or possession based. The coaches argued the importance of being able to adapt playing styles depending upon several game situations, however, all but one of the coaches had a fixed approach towards their playing style and associated strategies and tactics employed (Wade, 1996; Piltz et al., 2013; Clemente et al., 2014; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; The FA, 2016).

Similarly, coaches showed a clear understanding of their preferred system of play, however, all but one of the coaches still referred to a chosen system as a one-dimensional static classification, with little or no appreciation of how systems of play change depending on whether the team is in or out of possession. They had not developed the tactical knowledge or the observational skills to identify how styles and systems of play may change across the different

moments and sub-moments of the game. Further research is required to explore systems and styles of play to aid coaches and analysts to detect how systems change within the moments of the game and present how systems change when the ball is in different areas of the pitch (sub-moments). In addition, more guidance is required to support their knowledge development, observational and analytical skills to recognise how styles of play, strategies and tactics may have to be adapted to a) suit the players' characteristics within their team, or b) adapt to the opposition's tactics and strategies (Delgado-Bordonau et al., 2012; Bialkowski et al., 2016; Wu et al., 2019; Machado et al., 2017; Müller-Budack et al., 2019; Fernandez-Navarro et al., 2016; Hewitt et al., 2016; The FA, 2016).

In terms of the coaches' backgrounds and profiles, findings showed no difference between coaches in the first Study. The knowledge displayed was sporadic; a coach would show more knowledge on one concept but less on another, and coaches did not display similar knowledge across all concepts. Educational background, age, context and number of years playing did not have any impact upon the knowledge displayed by the coaches. However, the coach with the least number of years coaching, joint youngest and had not been selected for the Level 3 course, demonstrated more advanced knowledge across all concepts. The findings illustrated that despite coaches having similar knowledge and education, coaches not selected for the Level 3 course only differed in terms of age and the number of years coaching. An area for further enquiry, therefore, would be to establish if age and the number of years of coaching are more significant factors to measure someone's suitability for the course, rather than the level of knowledge, playing and coaching experience, and educational background.

Finally, from a coach education perspective, more focus on developing coaches' declarative and procedural knowledge of the moments of the game and the associated principles of play is required. These two fundamental concepts have a significant impact upon the coaches' overall tactical knowledge and the other key concepts such as styles, systems, strategies and tactics (Wade,



1967, Price et al., 2019; 2020; Bangsbo et al., 2002; Piltz et al., Launder, 2013; Clemente et al., 2014; Fernandez-Navarro et al., 2016).

### *Tactical Knowledge in Practice*

The findings from Study 2, observing coaches in practice between Block 3 and 4 of the course, demonstrated coaches with more advanced tactical knowledge displayed more episodes of procedural and conditional tactical knowledge in practice. This revealed that, although coaches were at the same stage of the Level 3 course, the knowledge displayed in practice indicated how knowledge development and learning is non-linear with coaches on different trajectories in their tactical knowledge development. Furthermore, the study revealed that although coaches had developed some competent declarative and procedural knowledge of the principles of play, in theory, not all coaches displayed consistent levels of procedural and conditional knowledge of the principles in practice, with some inconsistencies of when and why to intervene.

All coaches displayed competent levels of attacking principles declarative and procedural knowledge, with all demonstrating their procedural knowledge in practice on several occasions when coaching creating space, movement and support play. However, only three of the coaches displayed a consistent level of procedural and conditional knowledge around the attacking principles in practice, demonstrating when and why to intervene. In addition, two coaches illustrated more advanced principles of play knowledge by considering and displaying conditional knowledge of the defensive principles (Wade, 1967; 1996; Côté et al., 2009; Stoszowski et al., 2016; Price et al., 2019; 2020; The FA, 2016; Hewitt et al., 2016; Fernandez-Navarro et al., 2016; Bangsbo, 2000; Costa et al., 2009; Piltz et al., 2013; Nash et al., 2006).

Moreover, it would be expected at this stage of the course (between Block 3 and Block 4) that coaches would have developed significant knowledge and understanding around the principles of play and could display conditional knowledge in practice. Further findings suggest the number of coaching hours per week and the coaching context had an impact on the coaches' tactical knowledge development. The coach displaying the least advanced tactical knowledge coached the least number

of hours and at a lower level (grassroots). In contrast, the other coaches in the study coached at the semi-professional or Academy level. The coaching domain could have an impact on the coaches' tactical knowledge development. Within an academy setting, a coach would be coaching alongside Level 3 and 4 coaches that could facilitate some knowledge transfer through observation and feedback supporting the coach to learn and develop their knowledge. In addition, at a semi-professional level they could be exposed to players with developed tactical knowledge of several of the concepts, alongside working with another Level 3 coach (Blackett et al., 2017; Stodter et al., 2017; Nash et al., 2006; Price et al., 2019; 2020; Vergeer et al., 2009; Kaya, 2014; Wright et al., 2008; Stoszkowska et al., 2015).

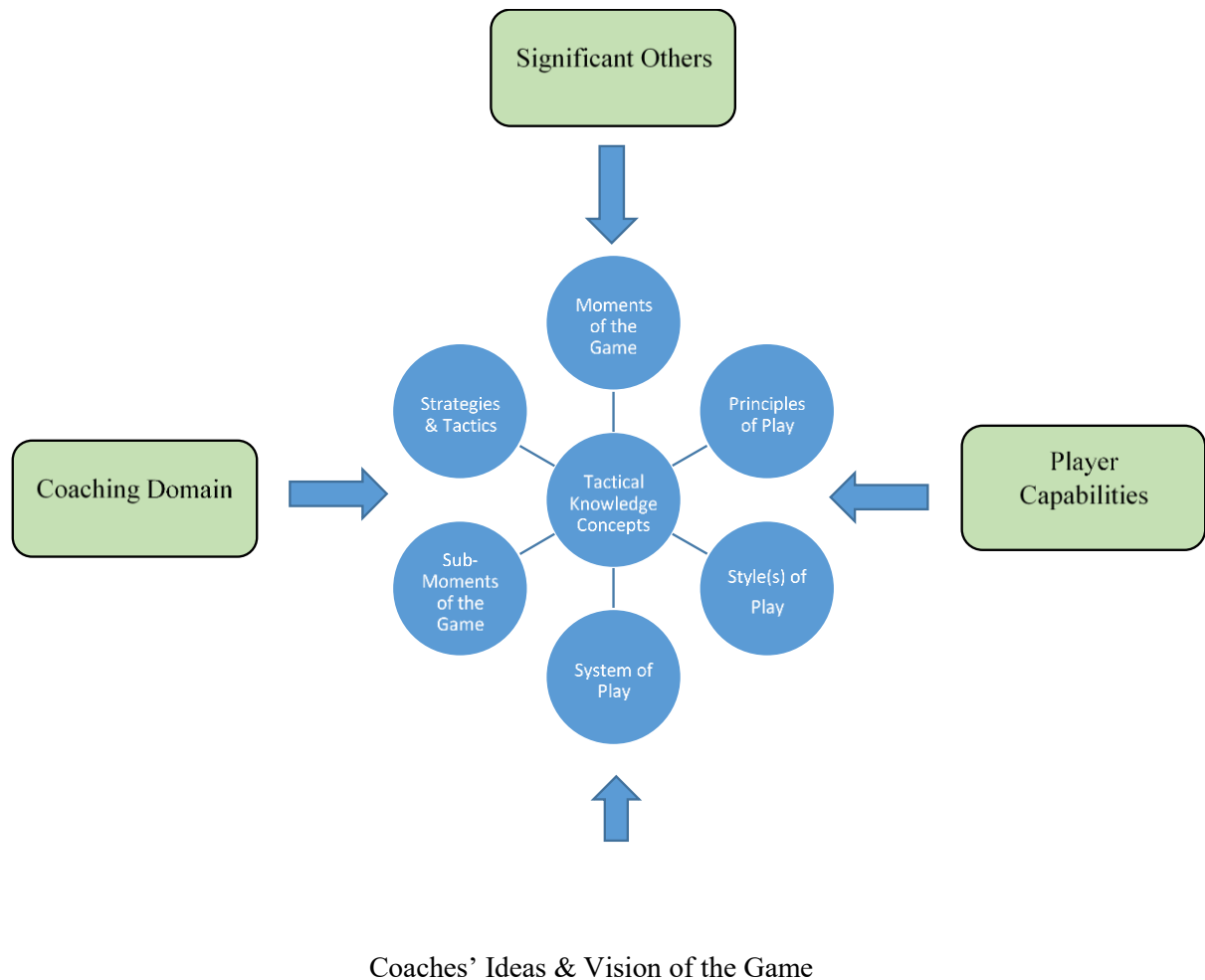
A final finding revealed that despite the stage of the course, none of the coaches differentiated changes in the system of play during different moments of the game, with all coaches still referring to an overall static formation classification (Wu et al., 2019; Machado et al., 2017; Müller-Budack et al., 2019; Bialkowski et al., 2016; Wilson, 2010).

### *The Game Model*

The findings suggest that the development of a Game Model (GM) had a significant impact on the coach's tactical knowledge development. The greatest change in tactical knowledge occurred once the intervention strategy had begun and the coach started to construct the GM. The GM allowed the coach to break the game down into more manageable concepts, permitting the coach to focus specifically on desired strategies and tactics across the different moments and sub-moments of the game. Moreover, findings illustrated that once the coach understood exactly how he wanted the team to play, it became easier to communicate information to the players. Subsequently, players started to process this information, which consequently led to an improvement in team performance.

Figure 8.1 illustrates the final version of the Game Model following the three studies. The creation of a clear GM allowed a coach to operationalise their team's styles and systems of play, which reduced player uncertainty and improved tactical cohesion. Furthermore, it helped players

understand their roles and responsibilities during appropriately designed game-related practices focusing on different moments and sub-moments of the game (Martins, 2003; Frade, 2004; DelgadoBordonau et al., 2012; Tamarit, 2015; Tee et al., 2018; Giske et al., 2015; Price et al., 2019; 2020; Richards et al., 2012; 2017).



**Figure 8.1.** Concepts of a Game Model (adapted from Delgado-Bordonau & Mendez-Villanueva, 2012).

The coach had worked through each stage of the conceptual framework shown in Table 8.1 and as the intervention strategy progressed in Study 3, he displayed a greater understanding across each of the concepts. For example, the coach started to specifically focus on the primary units and players within the sub-moments of the game showing how he wanted the team to play, with the desired strategies and tactics aligned to the style and system of play.

**Table 8.1** Conceptual Framework: How to build a Game Model, stages, key considerations and further considerations.

<b>Game Model Components</b>	<b>Key Considerations</b>	<b>External considerations</b>
<b>Coaches' Ideas &amp; Vision of the Game</b>	Form an integral part in the designing of a GM. How do you view and what are your ideas of the game? How would you want your team to play? What is your preferred type of player?	Beliefs, preferred principles, systems of play and styles of play  Coaching Domain, Player Capabilities and Significant others
<b>Stage 1: Moments of Game</b>  In possession – attacking in open play Transition from defence to attack Set plays - free-kicks, thrown-ins and corner kicks. Out of possession - defending in an organised Transition from attack to defence (dis-organised) Defending set plays - free-kicks, thrown-ins and corner kicks.	How do you want your team to play in each of the moments of the game? How does your system of play change in each moment of the game? Who are the key players and units in each moment of the game? How do the principles of play link to each moment of the game?	Game circumstances - home advantage, type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition  Opposition – strategy & tactics, the system of play, player characteristics, areas of strength and weakness.  Coaching Domain, Player Capabilities and Significant others
<b>Stage 2: Principles of Play</b>  Attacking Principles of Play Penetration, Support, Creating, Space, Movement, Creativity  Defending Principles of Play Press Delay Compactness Balance Control / Restraint	What is your understanding of the principles of play? How do you apply attacking principles of play?          How do you apply defending principles of play?	

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Defence to Attack Transition Principles of Play

Transition speed

Strategy to win the ball back

Strategy to launch the attack

Balance of the team

Attack to Defence Transition Principles of Play

Transition Speed

Prevent Immediate Forward Action

Willingness to Recover/Explosive Running

Denying/Preventing Quick Ball Speed

Increase the Number of Passes

Swift Solutions (win/delay)

Intercepts/Spoils/Tackles

How do you apply the principles of transition?

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**Stage 3: Style of play**

Possession based, build-up play, playing through the thirds, playing direct, maintenance, total football, Tika-Taka, playing in wide areas (crossing), counter-attacking, fast tempo, sustained threat, progress and penetration, high press, mid press, low press defending deep and forcing play, counter-pressing, low block.

What is your preferred style(s) of play in possession? (Possession-based, direct, counter-attacking etc.)

Why?

Do you employ this style of play with your current team? If so, how?

What is your preferred style(s) of play out of possession? (High press, defending deep etc.)

Do you employ this style of play with your current team? If so, how?

Do you have other preferred styles of play?

Consider the game circumstances and opposition, how will they affect your style(s) of play?

Coaching Domain - winning vs development

Players' characteristics & capabilities

Significant others

Game circumstances - home advantage, type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition

Significant others

Opposition – strategy & tactics, the system of play, player characteristics, areas of strength and weakness.

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<p><b>Stage 4. System of Play</b>  <b>1-4-4-2, 1-3-5-2, 1-4-3-3, 1-4-2-3-1, 1-3-4-3, 1-2-3-2-3, 1-3-2-3-2, 1-4-5-1, 1-4-6-0, 1-3-2-5, 1-2-3-5.</b></p>	<p>What is your preferred system of play?  What are your preferred player characteristics for each position?  Do you have the players to play this system of play?  Does your system of play change whether you are in possession or out of possession? Why? How?  Does your system of play fit with your preferred style of play? Why?  Consider the game circumstances and opposition, how will they affect your system(s) of play?</p>	<p>Create player profiles for each position with key roles, responsibilities and specific attributes.</p> <p>Coaching Domain - winning vs development  Players' characteristics &amp; capabilities  Significant others</p> <p>Game circumstances - home advantage, type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition</p> <p>Opposition - strategy &amp; tactics, the system of play, player characteristics, areas of strength and weakness.</p>
<p><b>Stage 5: Sub-Moments of the Game</b> (Pitch location)</p> <p><b>Thirds</b>  Defensive third  Midfield third  Attacking third</p> <p><b>Channels</b>  Left Chanel  Right Chanel  Central Chanel</p>	<p>How do you want your team to play in each of the moments and sub-moments of the game?  How does your system of play change in each moment and sub-moment of the game?  Who are the key players and units in each sub-moment of the game?  How do the units and player position change in each sub-moment in relation to the overall system?  How do the strategies and tactics change in each sub-moment of the game?</p> <p>Does your approach change in the different sub-moments of the game?</p>	<p>Coaching Domain - winning vs development  Players' characteristics &amp; capabilities  Significant others</p> <p>Game circumstances - home advantage, type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition</p> <p>Opposition – Strategy &amp; tactics, the system of play, player characteristics, areas of strength and weakness.</p>

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**Stage 6: Strategies & Tactics**

**Strategies** Retain & Build, Progress & Penetrate, Counter Attack, Defensive, Midfield, Attacking third. Wide, Central areas, Specific Players.

Round, Through, Into, Onto, Beyond. Zonal or man-to-man marking.

**Tactics** - Overlaps, underlaps, interchanging positions, crosses, dribbling, combination play, switching play, through balls, combination play, dribbling, inverted wingers, false 9 and hold up play.

What strategies and tactics do you use with your players to achieve your attacking style of play?

What strategies and tactics do you use with your players to achieve your defending style(s) of play?

How do the strategies and tactics change in each moment & sub-moment of the game?

How do your strategies change in each of the moments & sub-moments of the game? Why do they change?

How do the units and player position change in each sub-moment in relation to the overall system?

Linked to the Principles of Play

Coaching Domain - winning vs development  
Players' characteristics & capabilities  
Significant others

Game circumstances- home advantage, type of match, score-line, time left in the game, a player sent off, player injury, weather or pitch condition

Opposition – strategy & tactics, the system of play, player characteristics, areas of strength and weakness.

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**External Factors: Coaching Domain, Player Characteristics Capabilities and Significant others**

**Coaching Domain:** Professional Game, Academy, Grassroots  
Semi-Professional, Foundation Phase, Youth Development Phase  
Professional Development Phase, Male / Female.

**Player Capabilities:** Technical, tactical, psychological, physiological and sociological skills

**Significant others:** The head coach, managers, other coaches, players, parents, sports science or medical support, the board and fans.

What domain do you coach at?

What is the club's or team's purpose?

What are the club's aims?

What are your aims?

What impact do significant others have on your GM?

How does your game model fit into the coaching domain and consider the players' capabilities? (i.e. style, system, strategies and tactics)

What are the players' characteristics and strengths?

What are the limitations?

What factors can you not implement?

Create profiles of the players in your team.

Profile your players for the things that they are good at and the things they find difficult or need developing (across the 4 corners)

Compare and contrast your players with the roles and responsibilities of how you want to play.





The conceptual framework, “How to build a Game Model” facilitated the coach to deconstruct the game into more manageable moments, before demonstrating the knowledge to build the moments back up into a full 11 vs 11 game. With this, he was now able to work more effectively away from the ball, observing the positions and behaviours of other players and units in the different sub-moments across the pitch. The GM and conceptual framework had supported the coach to develop their declarative, procedural and conditional tactical knowledge of the game through exploring and reflecting on the different concepts of the model and applying them in practice (Price et al., 2019; 2020; Wade, 1967; 1996; The FA, 2016; Hewitt et al., 2016; Delgado-Bordonau et al., 2012; Giske et al., 2015; Richards et al., 2012; 2017; Tee et al., 2018).

### *Stimulated Recall*

Findings propose that the stimulated recall (SR) process had a noteworthy impact on the coach’s tactical knowledge development. The SR process, with the use of technology and tactics board (object learning), allowed the coach to reflect, analyse and refine their practice. The SR process had become an instrumental tool as it permitted the coach to focus upon preferred strategies and tactics within the specific moments of the game. It allowed the coach to become more critical in the observation process and develop greater analytical skills. This led to clearer and more concise reflections as knowledge developed. For example, the coach began to send through their reflections from the session before receiving the footage for the SR process. Moreover, as the coach’s knowledge developed and confidence grew, they began to send through weekly pre-session videos, session plans, and post-session reflections of incidents of his own accord. This showed the SR process had, therefore, shifted from a researcher-led to a coach-led process (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011; Wolcott, 1995).

A final finding of the thesis supports findings from previous research suggesting that coaches are deemed to construct knowledge through a range of both informal and non-formal learning platforms such as books, online sources, playing football-related video games, watching matches and

observing other coaches alongside course content (Vosniadou et al., 2003; Nash et al., 2006; Cushion, 2011; Gilbert et al 2009; Stoszowska et al., 2015).

### **Study considerations**

As with many studies, several limitations or considerations can be reached, with the current Thesis without exception. The researcher aimed to carry out the focus groups before the start of the Level 3 course for the 2018/19 season to explore coaches' tactical knowledge. However, due to no uniformed approach across County Football Associations (CFAs), start dates for the Level 3 courses varied, with Block 1 delivered by some CFAs in August and early September 2019. In addition, the ethical approval process was longer than expected, which meant the research could not take place until approval. With this, the majority of CFAs had now delivered UEFA B Block 1 of learning, which meant changing the focus slightly to "*at the start of their level 3 journey*", with all focus groups carried out after Block 1 of the UEFA B. However, this did not have a significant impact on the study as Block 1 is an introduction to a number of the key topics, which are then covered in more depth as coaches' progress through the other 3 Blocks across 9 months of the course.

Further consideration of the study was the lack of similar or previous research on the a) novice and intermediate coaches in football, b) tactical knowledge, and c) tactical knowledge of coaches at this level. Although some recent studies have started to explore how coaches develop knowledge and what knowledge they require, there is limited research on tactical knowledge or how novice coaches develop their knowledge as they progress to an intermediate level. However, this was identified as an important opportunity for the researcher to explore gaps within the current literature and present findings for further studies.

The findings from the current thesis have a significant value to the researcher's practice as a coach educator and may also be compared with other coach educators. However, given the nature of the studies within the thesis and the small sample size of coaches across studies, the researcher is not drawn into an overall generalisation of the thesis findings, with generalisation another limitation.

However, this was not a limitation within the thesis as the research pragmatic paradigm gave the researcher a greater depth into understanding how coaches develop tactical knowledge that then informed practice (Smith, 2018).

The thesis carried out a comprehensive investigation into a small group of football coaches' tactical knowledge, rather than an extensive group, studying on a Level 3 coaching qualification. The six coaches in the thesis studied the Level 3 qualification across five different County Football Associations (CFA) in the North West of England. The marker of quality research is the impact that the findings can have within a chosen field of study or specific context settings (Smith, 2018). The findings from the thesis highlighted some vital areas of practice that required attention to support the coaches' knowledge development. Furthermore, this had a significant impact on the researcher as a coach educator and brought about a change in delivery on the Level 3 course. These findings gave some generalisability across courses in England and may also be compared with other coach educators as the issues identified were similar across five CFA Level 3 courses based on the coaches within the thesis.

Any Level 3 course across the country may attract coaches with different backgrounds, knowledge and experiences than the sample within the current thesis. Therefore, the cohort may not accurately represent the characteristics of other groups of coaches undertaking the qualification. However, some of the findings may provide evidence towards certain types of generalisation, such as the level of expected tactical knowledge novice and intermediate coaches have at the start of the course, or the tactical knowledge displayed in practice by coaches throughout. This may allow comparisons to be drawn, however, the researcher encourages coach educators, educators and coaches to reflect upon the findings across the studies and consider how the conclusions are transferable to their coaching context when developing tactical knowledge (Smith, 2018; Chenail 2010).

Further consideration of this research relates to the methods across the first two studies. Through the meta-reflection process, it would have been advantageous for participants to engage in both focus groups and participant observation across the first two studies. This could have proved

beneficial in assessing their declarative, procedural and conditional knowledge in terms of coaches' baseline knowledge and change in knowledge over time, especially in a practical setting. In addition, it could have been beneficial to expand the sample size for the longitudinal study to include more participants to observe the change in knowledge (Sparkes & Smith, 2014).

### **Implications for practice**

The findings illustrated several practical considerations to take forward into future delivery of coach education courses, alongside practice as a coach educator and lecturer.

#### *Coach Education*

With the studies running parallel to the delivery of the 2018/19 course, it was difficult to make fundamental changes to the course delivery. However, findings highlighted some vital areas which required attention to support the learners on the course.

Sharing findings with other coach educators delivering on the course, coupled with their observations of coaches, it became evident that the moments of the game and the principles of play were required to be revisited to support the majority of learners before the next course block. A workshop was designed and delivered to ensure all learners had a competent level of attacking, defending and transition moments of the game, and associated principles of play declarative and procedural knowledge. Furthermore, it was felt that more emphasis should be placed upon supporting coaches with their project with a particular focus upon their GM or model of performance. The researcher delivered a workshop on how to build a GM that allowed coaches to reflect and explore some of the key concepts from the conceptual framework.

With circa 900 coaches still to complete the Level 3 for 2017/18 and 2018/19 and the suspension of the course until March 2020, the findings from the thesis helped to confirm but also provide new insights into different approaches which could be applied within the delivery of the Level 3 course during the 2019/20 football season. The key recommendations would support the

researcher's local County Football Association (CFA) and be implemented for 2019/20 with the plan to share the findings with the FA and other counties following a pilot.

Findings were presented to coach educators and coach development officers at the CFA at the end of the 2018/19 season. After several discussions, amendments were made to the delivery of the course for the following season.

First, coach educators received the applicants' biographies pre-course from the CFA to assess backgrounds, playing and coaching experience, education and levels of coaching, as findings from the thesis suggested that some coaches had not been selected without a thorough check into their backgrounds and were possibly excluded due to age and number of years coaching.

Second, before starting Block 1 for the 2019/20 course, candidates were asked to complete several pre-course tasks devised from the concepts within the conceptual framework and GM. The conceptual framework was divided into smaller, manageable tasks to help coaches develop, explore or extend their tactical knowledge and begin the process of developing a GM before the course. The tasks guided and supported coaches to consider each of the concepts from the model. Once each coach completed a task, they were asked to email the task in before the next task would be set, allowing coaches to work at their own pace. This approach enhanced the planning and delivery process for effective learning, through gaining insight into the coaches' technical and tactical knowledge baseline knowledge before the course. Furthermore, the information provided by the coaches across each task permitted the coach educators to group coaches based upon gaps in their knowledge around the different concepts. This then allowed the coach educators to differentiate the delivery of Block 1 of the course and apply a learner-centred approach based upon the coaches' needs, rather than a general approach. The tasks from the framework became a live working document for coaches, with them updating sections based on gaining additional knowledge throughout the course.

The third recommendation proposed was to extend the length of the course from 9 months to 14 months. Extending the course would allow learners more time to complete the course and allow

the three in-situ visits to be more spaced out and differentiate the learning journey for each coach based upon their needs. For many coaches, the first visit after Block 1 came too early in terms of their practical delivery as shown within the findings from the first study, which highlighted the contrast in coaches' baseline tactical knowledge.

Although the pre-course tasks and the planning for learning attempted to develop coaches' levels of declarative tactical knowledge, not all coaches would be able to apply it in practice. It is an unreal expectation to consider coaches to be at the same level in their practical delivery, especially if they are only coaching 2 to 3 hours per week. Therefore, in an attempt to remove the pressure on coaches, extending the course allows in-situ visits to be carried out at different points in the learner's journey and more importantly when they felt ready for a visit. Furthermore, extending the course allowed learners more time to complete their project, which included 30 session plans, games and reflective logs as some coaches' teams did not play 30 games within the 9-month time frame.

#### *Coach observations*

The adapted stimulated recall and object learning are two intervention strategies that have been adopted and continually applied to support coaches in practice. The initial SR process required modification to become more practical and an instrument that could be applied within the real-world coaching setting by coach educators and coaches to support the reflection process. For the SR process to be effective and impact on coaches' development in practice, it required a quick turnaround ideally before the next session or game to minimise cognitive deterioration from the delivered session (Cushion et al., 2018; Lyle, 2003; Cope et al., 2017; Stodter et al., 2020; Bernier et al., 2011).

Therefore, before each observation, coaches are asked to provide a session plan and are encouraged to make use of a tactics board or other objects to demonstrate their preferred tactical behaviours of the players and units within the session. The pre-observation task has given a greater indication of the session-specific tactical outcome and player behaviours the coach hopes to achieve.

This has allowed observations and feedback to be more focused on the coach's chosen tactical outcomes of the session and support their knowledge development through the reflective process. Moreover, the SR process has not been exclusively applied for tactical knowledge development alone, but also applied to support other areas of coaching practice (i.e., exploring coaching behaviours, interventions and feedback) applying a similar approach.

Finally, the intervention strategy, once shared with fellow coach educators, has been applied within their observations. Feedback provided suggests the SR has permitted coaches to become more critical in their reflections with a more specific focus on the key aspects of practice. In addition, the SR process found coaches to be more engaged in the approach, reflecting and responding in a shorter time frame, which has a positive impact on their knowledge development in practice.

### *Module Development*

A significant impact and development on my practice as a lecturer has been the design and implantation of a new Level 7, 30 credit module 'Applying Football Principles'. The module formed part of the validation process on the new Postgraduate MSc Football Coaching courses at UCFB, which started in September 2020. A key requirement in the development of the course and module was the mapping of learning outcomes to the Framework for Higher Education Qualifications and to the relevant QAA subject benchmark statements. Both set out the expectations and standards of Level 7 programme subject areas. The module was scrutinised at several stages, firstly through the quality team and internal scrutiny panel, and secondly by the validating partner's quality team, before being sent off to be reviewed by two external examiners. One of the selected examiners was required to be an academic from another Higher Education Institution, whilst the other was required to be an industry expert in the field of football coaching. In the final stage, the validation event approved and validated the course and subsequent module. The module is currently being delivered for the first time during the 2020/21 academic year, and also received a commendation from the awarding University for its research informed approach.



The module is based upon several findings of the thesis and incorporates the key concepts of the conceptual framework and GM. The conceptual framework became the curriculum for the module and informed the indicative content and the learning outcomes. The module supports students to develop and expand tactical knowledge and consolidate their underlying declarative and procedural knowledge of the different tactical concepts of the game. This, in turn, impacts the application of conditional knowledge in practice when delivering the different concepts to their players (Nash et al., 2006; Price et al., 2019; 2020).

The module guides students through key concepts of the conceptual framework while supporting them to design a GM encompassing a holistic approach that they can integrate into effective planning for team performance. It further requires students to become critical in the analysis of strategies and tactics applied by teams, examining how teams employ different approaches in the different moments of the game and the associated principles of play.

The first component of the assessment strategy requires students to exhibit their procedural and conditional knowledge in practice by demonstrating a critical understanding of the principles of play in a practical setting. Each student is required to critically justify their selected principles of play, style of play, and desired system of play with the appropriate strategies and tactics for a specific moment of the game. The second component of the assessment strategy is an oral assessment and presentation where students justify their GM approach and critically explore some of the challenges faced in implementing their GM into their coaching environment.

The current group of postgraduate students are in the process of designing a GM for the second assessment. The students are required to present their game module via an oral presentation in July 2021, with the assessment worth 50% of the overall module mark. Once the students have completed the module, feedback will be gauged through the University module evaluation and feedback process. However, after completion of this module, the focus will be given to the content of the module and the concepts within the GM to gain feedback from students on the design and development of a GM. The current group of students have a diverse range of experiences from a first

team coach at an English Football League Championship club to community coaches working within Premier League clubs.

It is hoped the students can give some critical feedback that can enhance both the module and the model going forward, and form part of a study investigating the impact of developing a GM. Informal feedback thus far from coaches on the courses has stated that none of the coaches has ever studied the tactical concepts of the game in such depth in other settings (i.e., coach education, university courses).

### **My development as a researcher**

The first module of the professional doctorate, Professional Planning and Training in Applied Sports and Exercise Science, required critical reflection in the form of a self-audit on one's personal growth and development. Both self-knowledge and self-awareness have been highlighted as two significant factors for personal growth and self-development (Taylor, Werthner, Culver, & Callary, 2015; Whetten & Cameron 2007). The self-audit critically examined personal skills, academic competency and researcher competency against three frameworks.

The first framework assessed personal characteristics, utilising 'The Behavioural Profile' report developed by PDA International (2004). This is commonly utilised within the professional practice field and is a recognised method of assessing behavioural characteristics for the selection, management and development of talent. The second framework explored effective academic performance, applying "The UK Professional Standards Framework for teaching and supporting learning in higher education". The final framework assessed my research skills using Vitae Researcher Development Framework (2010). Vitae is structured in four domains and twelve subdomains, encompassing a range of skills, qualities and techniques.

Through analysing my skills, the reports highlighted two distinct areas requiring self-development, which overlapped across the competency frameworks and assessments. The two areas were academic writing and research skills development.

The Vitae Researcher Development Framework and The UK Professional Standards Framework illustrated the requirement to develop a writing style appropriate for level 8, through the use of appropriate language and applying the correct technical or scientific writing in research for this level. In addition, the behavioural profile report highlighted I often provide more information than is required in an attempt to be complete and accurate (PDA International, 2004).

Critically reflecting upon the findings of the report, frameworks and throughout the write-up of the thesis, I spent numerous hours reading, planning, thinking about problems and situations by gathering as much information as possible. A significant realisation in the research process is that I write for understanding, whether that be through reading literature or analysing data. I read, write, reflect, analyse, re-write, reflect and synthesise until I fully understand a specific concept. This, at times, has impacted the word count in several chapters in the thesis, which have been required to be refined. This quest for perfection and accuracy has often been an area of weakness and slowed the writing process down. Within the four study chapters, I provided more information than was required at times, being too descriptive with a lack of analysis and synthesis. This, at times, impacted the flow of the writing meaning it would have been difficult for the reader to ascertain the key findings of the studies.

However, throughout the professional doctorate, I feel I have developed an effective writing style and the writing skills that allow me to construct an effective argument by being more precise and concise only addressing the key points through communicating more clearly. I found this process initially easier when synthesising the literature review, methods and methodology sections, however, less so when attempting to analyse and synthesise my findings. Furthermore, feedback from the research team played a pivotal role (Gillet & Hammond, 2009). As highlighted earlier in the personal development section, I had become aware that I was required to be more critical and specific when making relevant points. I have been able to develop these skills through reading a wide range of academic journals and published studies, through designing and writing up the four studies and also through receiving constructive feedback and guidance from the supervision team. Developing

academic literacy skills has been a continuous process throughout the professional doctorate and something I need to continue to develop and refine as I look to publish some of the thesis findings (Gillet & Hammond, 2009).

### *Academic Research*

Both the Vitae researcher development framework and professional standards framework illustrated a lack of evidence-informed approaches carrying out academic research, scholarly activity and employing a range of appropriate methods and techniques with confidence. Although I am very active in terms of professional practice, carrying out regular continued professional development in my subject discipline through attending coaching CPD events and coaching conferences, the area required the most development is the research and scholarship activity, which can inform and develop my professional practice and carry more credibility as an academic. Despite over twenty years of coaching experience across academy football and coach education, from an academic perspective, I lack experience in research and scholarly activity in the research world. For my development as a Higher Education academic, it is important to be able to use evidence-informed research to support my professional practice background and a significant reason why I decided to carry out the professional doctorate. Although I have yet to publish, once I have passed the Viva and made amendments to the thesis, I plan to publish the studies with the support of the research team.

Moreover, Chapter 4 explored the different research concepts of ontology, epistemology, methodology and methods applied across the Professional Doctorate thesis. The methodological process is a complex phenomenon, with several underlying philosophical beliefs and paradigms that underpin the research process. It was paramount for a researcher to understand the different paradigms and ascertain the best approaches to collate, analyse, and present the data and research findings with several employed across the thesis. The researcher's philosophy aligned directly with a pragmatic paradigm philosophy, thus the studies within the thesis adopted a pragmatic research paradigm adopting scientific realism and pragmatism as the ontological and epistemological foundation. Moreover, this has also had a positive impact on my academic delivery when delivering

to students upon paradigms, methodologies and methods (Bryant, 2009; Grecic & Grundy, 2016; Giacobbi et al., 2005; Glasgow et al., 2012; Dewey, 2008; James, 1907; Johnson & Onwuegbuzie, 2004). This knowledge development has been explored throughout the meta-reflections of the thesis. (Ritchie & Lewis, 2003; Gratton & Jones, 2005; Morgan, 2007; Sparkes & Smith, 2014 Denzin & Lincoln, 1994, 2000; 2011).

In summary, to further develop as an academic, it is essential to contribute to the body of knowledge in my area of coaching and coach education. To do this, I need to carry out and publish my high-quality research, network and collaborate with others (both internally and externally), and optimise the value and relevance of the research being produced to build my reputation in the coaching field.

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