

Vygotsky in Practice: Applying Vygotskian notions to improve coach education  
in rugby union.

By

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## **Abstract**

Tentative inroads have been made in advocating Vygotskian learning theory as a theoretical lens to view and shape sports coaching and coach education (Potrac, Nelson, Groom and Greenough, 2016; Jones, Thomas, Nunes and Filho, 2018). Despite Vygotsky's ideas being promoted within education, limited literature exists within sports coaching and coach education that provides empirical evidence of its benefits (Vinson and Parker, 2019; Pritchard, 2019). Regardless of research confirming that social interaction is the principal source of knowledge development (Nelson and Cushion, 2006), there is limited evidence of this in practice, with coach education arguably addressing the agendas of the provider and coach developer before the coach (Stodter and Cushion, 2019). However, some research has addressed alternative approaches that privileges social interaction and recognises learning as a non-linear social process (Paquette and Trudel, 2018). Furthermore, pedagogical approaches to coaching such as game-centred approaches (GCA) that support non-linearity in learning have been promoted (Light, 2013).

The aim of this study was to show how I, a coach educator, used Vygotskian notions to improve rugby coaches' conceptual understanding of game principles and how to apply them in practice. The study involved a group of six student rugby coaches. Using action research, coaches delivered a 10-week rugby programme to a class of year 5 children, informed by Vygotskian notions and GCA. Data was collected on coach learning through observation of their ability to deliver through GCA, a reflective log detailing my reflections as coach educator and a series of focus groups with the coaches. Data was analysed using a combination of deductive and inductive thematic analysis (Braun and Clark, 2006). Findings highlighted the use of language, importance of the more capable other, embedding learning in context and providing time to internalise ideas as being key within the learning process. The study contributes to the developing body of empirical evidence that seeks to promote Vygotskian pedagogy as a credible theoretical lens, whilst recognising the complexities of sports coaching.

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## **Contents**

Declarations	i
Abstract	ii
Acknowledgements	iii
List of Tables	7
List of Figures	7
List of Appendices	7
<b>Chapter One: Introduction</b>	<b>1</b>
1.1 Rationale and Context of Study	1
1.2 Aim	4
1.3 Objectives	4
<b>Chapter Two: Literature Review</b>	<b>5</b>
2.1 Introduction	5
2.2 Vygotskian Notions	5
2.2.1 Cultural-Historical Theory	6
2.2.2 Mediation	8
2.2.3 Zone of Proximal Development (ZPD)	12
2.2.4 Concept Formation	17
2.3 Coach Education	19
2.4 Game Centred Approaches (GCA)	22
2.4.1 Historical Context	22
2.4.2 Vygotskian notions and GCA	23
<b>Chapter Three: Methodology</b>	<b>28</b>
3.1 Ontological and epistemological position	28
3.2 Action Research	29
3.3 Ethical Procedures	31
3.4 Participants	33
3.5 Data Collection	35
3.5.1 Observations	35

3.5.2	Reflections	36
3.5.3	Focus Groups	36
3.6	Action Research Procedures	37
3.6.1	Organisation of the pupils and sessions	37
3.6.2	Pre-Intervention	38
3.6.3	Week by Week Procedures	38
3.7	Making a claim to knowledge	41
3.8	Data Analysis	42
3.9	Judging quality in action research	43
<b>Chapter Four: Results and Discussion</b>		43
4.1	Introduction	45
4.2	How I used the Vygotskian notion of concept formation to develop coaches' understanding of rugby	45
4.2.1	The concepts that were developed	47
4.2.2	How the coaches' understanding of rugby principles were developed	48
4.2.2.1	Developing collaboration to enhance coach learning in developing coaches' understanding of rugby	48
4.2.2.2	Discussion of developing collaboration to enhance coach learning in developing coaches understanding of rugby	53
4.2.2.3	Using questioning to facilitate coach learning in developing their understanding of rugby	55
4.2.2.4	Discussion of using questioning to facilitate coach learning	58
4.2.2.5	Differentiation to meet coaches individual learning needs in developing conceptual understanding of rugby	59
4.2.2.6	Discussion of differentiation to meet the coaches learning needs	62
4.3	Improving the coaches' pedagogy to deliver GCA to the pupils	63
4.3.1	How did the coaches improve their social interaction with the children?	64
4.3.1.1	The coaches applied use of questioning	64
4.3.1.2	Discussion of the coaches' ability to question in practice	67
4.3.1.3	Use of Language	68
4.3.1.4	Discussion for use of language	72

4.3.2 How the coaches created a good learning environment	74
4.3.2.1 Applying rugby principles within the game context	74
4.3.2.2 Discussion of applying rugby principles within the game context	78
4.3.2.3 Developing the coaches' ability to address children's misconceptions of rugby concepts	81
4.3.2.4 Discussion of developing the coaches' ability to address children's misconceptions of the rugby concepts	84
<b>Chapter Five: Conclusion</b>	87
5.1 Introduction	87
5.2 Aim and Objectives	87
5.3 Summary of findings and implications for practice	88
5.4 Limitations of the study	93
5.5 Recommendations for future research	95
5.6 My reflection on the process	92
References	97

## **List of Tables**

Table 1: Summary of coaches' experience.....	34
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## **List of Figures**

Figure 1: Data Analysis Map.....	46
Figure 2: The coaches recording of their knowledge and understanding of rugby.....	47

## **List of Appendices**

Appendix 1: Data Analysis Definitions.....	112
Appendix 2: Example Reflection.....	114
Appendix 3: Example Observation.....	118
Appendix 4: Week by Week Action Research Procedures .....	121
Appendix 5: Information Sheet for the School.....	128
Appendix 6: Consent Form for Head Teacher.....	129
Appendix 7: Information Sheet for Coaches.....	130
Appendix 8: Consent Form for Coaches .....	133

## **Chapter One: Introduction**

### **1.1 Rationale and Context of Study**

Recent years has seen a growing interest in social-cultural perspectives on coach and player learning that reject views of coaching as a linear, knowledge transmission process (Light, Evans, Harvey and Hassanin, 2015). Informed by educational, learning and social theories, these perspectives seek to understand and recognise coaching, coach development and player learning as a non-linear, social process (Cassidy, Jones and Potrac, 2004; Evans, 2012; Potrac and Jones, 1999; Jones and Thomas, 2015). Within the domain of complex team games where the people, learning and performance are inseparable from the immediate and wider, dynamic, physical and socio-cultural context (Light et al., 2015), there is a growing recognition of advocating non-linear approaches to coaching that addresses player learning, with game-centred approaches (GCA) advocated (Potrac, Brewer, Jones, Armour and Holt, 2000; Bunker and Thorpe, 1982; Den Duyn, 1997; Mitchell, Oslin and Griffin, 2006). Although there seems to be a willingness to adopt pedagogical approaches that address the non-linearity and complexity of team games, there is little guidance for those wishing to do so (Vinson and Parker, 2019). Therefore, greater attention and exploration needs to be paid to underpinning theory and its application that addresses the non-linearity of learning in both the pedagogy of coaching and coach education, as currently, traditional methods dominate coaching practice, whilst coach education continues to be taught on didactic lines (Jones and Turner, 2006; Cassidy, Jones and Potrac, 2009; Maclellan, Callary and Young, 2018).

Nelson, Groom and Potrac (2016) outlined a number of theoretical perspectives and their potential within sports coaching to address the non-linearity of learning, with Lev Vygotsky being a prominent theorist introduced. Vygotsky's work has been applied extensively in education (Daniels, 2001; Karpov, 2014; Moll, 2014) and child development (Smidt, 2009); however, there has been limited application of his work in sports coaching and none specifically within coach education. Tentative theoretical inroads have been made into Vygotsky's potential application into sports coaching (Potrac and Cassidy, 2006; Potrac, Nelson, Greenough and Groom, 2016; Jones, Thomas, Nunes and Filho 2018) with recent work by Vinson and Parker (2019) and an empirical study by Pritchard (2019) attempting to provide applied research as to how some of Vygotsky's notions can be implemented in sport coaching.



Further research is therefore needed to address how Vygotskian notions can be used to inform coaching practice and coach education.

Vygotsky suggested many different notions in his work. One such notion, which would seem particularly relevant to learning in complex team games settings, focuses on concept formation for developing coach and player understanding of the game. Concept formation, is underpinned by the theoretical viewpoint of effective learning as a socially and culturally mediated process by more experienced individuals, known as 'more capable others' (MCO) (Potrac and Cassidy, 2006). The benefit for coaches in understanding and applying Vygotskian notions such as concept formation lies in the idea of building on learners everyday understanding of sport they have developed over time through unstructured environments, before providing structure to everyday thinking and problem solving (Karpov, 2003). From a coach education perspective, engaging and educating coaches in theoretical concepts such as GCA, would enable them to evolve their everyday understanding of key concepts, to develop knowledge of what Vygotsky termed scientific concepts, making knowledge and understanding transferable between contexts (Vygotsky, 1987). Hereby, coaching practitioners will be able to increase their theoretical knowledge base, rather than purely relying on experiential knowledge. This greater understanding and application of theoretical ideas would enable coaches to develop athletes understanding of their sport, which, according to Gréhaigne and Godbout (2005) must be a 'non-negotiable' of coaching practice. It underpins and develops athletes knowledge of strategy and tactics, thus making them more aware of the decisions they are making (Gréhaigne and Godbout, 2005).

As a result, focussing on the abstract, as advocated by Vygotsky (1987), which in a rugby sense could mean space, width and depth, could help develop and inform players decision-making capabilities. In the development of scientific concepts, Vygotsky argued that everyday concepts lay the foundations for learning scientific concepts, emphasising that scientific concepts must be learnt in familiar contexts; otherwise, they become disembodied from practice (Vygotsky, 1987). Therefore, encasing the coaching of rugby within games and GCA would potentially enable coaches to build on players everyday understanding of rugby and embed the learning experience within a familiar and relevant context, as Vygotsky recommends. Furthermore, coaching within games would allow players to experience a multitude of situations enabling them to draw on varied experiences facilitating the transfer

across different contexts, again, as Vygotsky suggests. Having a deep understanding of the scientific concepts and principles of the game themselves is, therefore, key to coaches' success through GCA and it is therefore vital that coach education addresses this.

Vygotsky's focus on the MCO draws attention to the role of the coach and coach educator in the learning process. How a MCO demonstrates and explains ideas, values, strategies, and speech patterns for example, influences greatly what the learner internalises and learns from (Jones et al., 2018; Jones and Ronglan, 2017; Jones and Thomas, 2015). The lack of concrete strategies advocated by Vygotsky enables practitioners to experiment with their interpretation of collaborative learning; affording the opportunity to investigate collaborative approaches to learning and the interaction between coach and athlete, and between coach educator and coach.

Previous coach education addressed the application of GCA in rugby union through a NGB Level 2 coaching award (Reid and Harvey, 2014). The course was heavily criticised for its lack of support for the coaches in adopting GCA as part of their coaching practice. The course was slated for its didactic nature, with the educators' lack of knowledge and understanding of GCA resulting in a lack of clarity in the content being delivered. In addition, the course was delivered away from the context of the coaches delivery which consequently did not provide the coaches the opportunity to deconstruct and reconstruct their own coaching practice. These wide-ranging criticisms emphasises the need to rethink how coach education is delivered to avoid these shortcomings. As a result, and by adopting a Vygotskian approach to coach education, this study ensured coaches were supported in transforming their practice. Social interaction was privileged between the coach educator and coaches, clarity was ensured regarding theoretical input shared from the coach educator to the coaches, whilst prioritising time for the coaches to internalise new knowledge and then apply it in a relevant context were all features of this study.

Therefore, in this study, action research was utilised to develop six-student rugby coaches' application of coaching junior rugby union, encased within GCA, over a 10-week period. The lead researcher (author) acted as the MCO to the coaches by acting as a coach educator and mentor throughout the process whilst applying Vygotskian notions to my own thinking and actions to improve the coaches' learning, as stated in the following aim and objectives.

## **1.2 Aim**

The aim was to show how I, a coach educator, used Vygotskian notions to improve rugby union coaches' conceptual understanding of game principles and how to apply them in their own game-centred coaching practice.

## **1.3 Objectives**

The aim was addressed through three interrelated objectives:

1. To utilise the notion of Vygotsky's concept formation, as a coach educator, to develop coaches' conceptual understanding about the key principles of rugby union.
2. To assist coaches' to develop their pedagogical ability to apply their conceptual understanding of rugby principles within GCA.
3. To analyse and interpret the coaching issues (dilemmas) experienced by myself and the coaches and how they were dealt with through recourse to Vygotskian notions.

Although the aim and objectives of the study are heavily focused on developing coaches' practice, I am not dismissing or forgetting about my own journey as a researcher and coach developer. This study was all encompassing in terms of both coach learning, my own learning and subsequently the children's learning. Therefore, to narrow the focus of the research and to create the biggest opportunity for change it was decided to focus on the coaches' journey for this thesis. However, through illustrating the coaches' improvement and change in practice, I naturally captured how the children's learning evolved and how my learning and actions as the MCO changed and developed in supporting the coaches' ongoing development.

In terms of structure of this thesis, following the introduction a review of literature will be presented. Succeeding this, the methodology, results and discussion will be offered before finally presenting a reflective conclusion which summarises the main points and outlines implications for future coach education and coaching practice.

## **Chapter Two: Literature Review**

### **2.1 Introduction**

The purpose of this chapter is to critically review the literature relevant to this study. Regarding structure, the review is separated into three broad sections: Vygotskian notions, Coach Education and Game Centred Approaches (GCA). Firstly, various Vygotskian notions will be introduced to provide understanding and then related to the sports coaching context, demonstrating how they can be applied in coach education and coaching practice. Next, an overview of coach education will be presented along with its relevance to Vygotsky. Finally, the literature review will critically consider the history of GCA, how Vygotsky's work resonates with this coaching approach and why encasing this study within a GCA supports the application of Vygotskian notions within coaching and coach education.

### **2.2 Vygotskian Notions**

With the increasing awareness and application of social-cultural perspectives within sports coaching that draw on teaching and learning educational literature, the work of Lev Vygotsky holds great potential for sports coaching and coach education. The quality of his academic insights is evidenced by the discussion and application of his work in the 21<sup>st</sup> century despite him passing away in June 1934 at the age of 37 (Smidt, 2009). Although Vygotsky's work focused primarily on children's psychological development, the potential for his work to be applied in sports coaching and coach education is vast and rather under explored, providing rich opportunities for practitioners to interpret and evolve his work (Jones et al, 2018; Vinson and Parker, 2019). The core principles of Vygotsky's work and a Vygotskian approach to teaching and learning is that all learning is social, historical, and cultural in nature, rejecting the views of learning and development that naturists and behaviourists hold. (Potrac et al, 2016; Karpov, 2014). He did not believe that learning was hereditary or based on conditioning. Rather, his academic work emphasised the privileged social interaction and within that the importance of language as a fundamental mediator of learning (Vygotsky, 1978). Building on previous application of Vygotsky's work in sports coaching and coach education (Potrac et al, 2016; Jones et al, 2018), this chapter aims to develop existing literature by critiquing Vygotsky's work and illustrating its potential for application in sports coaching and coach education.

Vygotsky's work is vast and discusses many different notions, however I will be focussing on the cultural-historical perspective, mediation, the zone of proximal development (ZPD) and concept formation. Furthermore, his premature death presented numerous gaps and an element of ambiguity in his work (Jones et al, 2018). Therefore, this section addresses some of the more prominent concepts that are associated within Vygotsky's work and builds on Jones et al.'s (2018) paper about how his ideas can aid understanding of both the 'act' and 'process' of coaching and provide concepts for improving coach education.

In terms of structure, this section first introduces the cultural-historical perspective of learning. Next, mediation is critiqued and discussed. Probably the most used and misinterpreted of Vygotsky's notions, the ZPD (Chaiklin, 2003), is then interrogated. Finally, the dialectical relationship, with a focus on concept formation is examined.

### **2.2.1 Cultural-Historical Theory**

Vygotsky stated: "In the process of historical development the social man changes the methods and devices of his behaviour, transforms natural instincts and functions, and develops and creates new forms of behaviour – specifically cultural" (Vygotsky, 1997, p.18). The cultural-historical perspective was developed during the economic and political upheaval provoked by the Russian revolutions of 1917, which triggered huge social, political and economic change, along with fundamental changes in the ways of thinking and acting (Jones et al, 2018). Influenced by the writings of Marx, Engels, Hegel and Spinoza, Vygotsky and two of his student colleagues, Leont'ev and Luria, formed a research trio named the 'troika'. Stetsenko and Arieviditch (2004) also acknowledged the contribution of others in the development of Vygotsky's cultural-historical theory such as Lydia Bozovich and Alexander Zaporozhets. They sought to create a revolutionary, holistic form of psychology using dialectical logic to explain the complex role of cultural and historical processes in human learning (Gredler, 2009). To achieve this, they emphasised that cultural-historical theory, and the ideas developed within it, embody the dialectical relationship between theoretical knowledge and practical life (Stetsenko and Arieviditch, 2004). In addition, cultural-historical theory claimed that human behaviour and learning could only be explained through recourse to history and culture. Humans produce and reproduce their existence through social

relations, which build on the individual's existing level of understanding and are experienced in the activities they perform (Moll, 2014).

Using a Vygotskian perspective, learning first happens in the social context and secondly at the individual level (Vygotsky, 1978). Therefore, according to Vygotsky, what we do with others gives rise to interpersonal processes, which subsequently become our own as intrapersonal ones. In order for learning to be effective, learners need to be active in participating in experiences that will enable them to develop the skills and knowledge needed for transforming their consciousness (Vygotsky, 1987). An important point here was around individual perception or interpretation and that human consciousness must continually wrestle with the meaning of actions carried out by others within any related social activity. Therefore, as Jones et al (2018) identified in Vygotsky's work, sense can only be made through a consideration of the whole interaction; its origin, course of action and the mediating factors that shaped it. Such consideration relates well to the whole game situation in team sport, where the emphasis on learning is through authentic situations, which provides learners the opportunity to actively participate within an experience which is needed when transforming an individual's consciousness. This contrasts with the traditional approach to coaching team games where the learning is decontextualised, meaning the learner is not having an authentic experience within the game, therefore the supposed learning has little relevance (Light, 2013). Within coach education this is also relevant, with the traditional didactic model ignoring the messy realities of practice (Jones, Morgan and Harris, 2012). More innovative coach education ensures coaches are active participants in the learning process and therefore developing the necessary knowledge and skills needed for transforming their thinking (see Clements and Morgan, 2015; Jones, Morgan and Harris, 2012; Chapron and Morgan, 2019).

Potrac et al (2016) and Jones et al (2018) have opened an alternative coaching lens to view coaching pedagogy by exploring some of Vygotsky's thinking and what it means to sports coaches and coach education. Potrac et al (2016) introduced Vygotsky's work by sharing an overview of his theorising, suggestions for practical application, and a practitioner commentary as to how Vygotsky has informed their thinking in relation to coaching. As the authors acknowledge, they only briefly introduced some key concepts, which could limit the development of theoretical discussion, potentially simplifying and downplaying the application of Vygotsky's work (Jones et al, 2018). Emphasising work in education by Smidt

(2009) provides the reader with an initial idea and understanding of ideas as to how Vygotskian pedagogy could be applied in practice. The link between Vygotsky's application in education and how it can be applied in coaching and coach education is clear and concise, which is a strength of the chapter.

Jones et al (2018) used writings and selected notions of Vygotsky to both deconstruct and guide future coaching and coach education practice. They acknowledged that even though the socio-historical nature of coaching is beginning to be acknowledged in the literature; it is only theoretical in nature, highlighting the embryonic stages of this perspective. The intention of the paper was to offer suggested possibilities of how to apply some of Vygotsky's work and make tentative recommendations for dealing with the practical complexities of coaching, focusing on the potential for coaches to develop their practices, rather than provide empirical examples. The work by Potrac et al (2016) and Jones et al (2018) opened up possibilities of action for coaches and coach educators to develop their theorising's of Vygotskian practice, consequently creating a gap in the literature. Using a Vygotskian perspective to explore sports coaching is in its initial stages, as empirical work and examples are lacking. Furthermore, Vygotskian notions currently have not been applied in coach education settings.

It is anticipated that this study can assist with the development of emphasising the importance of the cultural-historical perspective in sports coaching, as through recourse to history and culture, Vygotsky claimed behaviour could be explained. The lack of empirical application of Vygotsky's work in sports coaching, specifically within coach education, provides scholars and practitioners the opportunity to interpret and apply his ideas in practice. However, the cultural-historical cannot be considered without the social. Learning takes place within a social context and is immersed in language, which for Vygotsky was the primary cultural tool. By historical, he meant how individuals build on existing levels of understanding (Smidt, 2009; Moll, 2014; Jones et al 2018). The next section draws focus to the social by focusing on mediation, which was central to Vygotsky's theory.

### **2.2.2 Mediation**

Mediation is one of Vygotsky's biggest contributions to the social sciences, however it is a concept that remains somewhat under explored, partly due to the challenging task of

interpreting his writings (Daniels, 2015). Vygotsky argued for the importance of language and mediation in supporting the cognitive development of children, emphasising that:

*...words can shape an activity into a structure. However, that structure can be changed or reshaped when children learn to use language in ways that allow them to go beyond previous experiences when planning future action...once children learn how to use the planning function of their language effectively, their psychological field changes radically. A view of the future is now an integral part of their approaches to their surroundings.*

(Vygotsky, 1978, p.28)

Exploring how language is utilised to stimulate thinking in coaching and coach education can not only enhance coaching practice, but also the learning experience of the participants.

Mediation runs throughout Vygotskian writings and is associated with the use of cultural and psychological tools to bring about qualitative changes in thinking, primarily through the application of these tools, in order to explain or represent the world and experiences within it (Vygotsky, 1978, 1987). Vygotsky gave examples of forms of mediation as “language; various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps and mechanical drawings; all sorts of conventional signs” (Vygotsky, 1981, p.136-7 cited in Daniels, 2006).

Vygotsky highlighted that what an individual learns is mediated by and cannot be separated from his or her social interactions and relationships with a more capable other (MCO) (Vygotsky, 2012). His writings on mediation are extensive; however, he seemed to have different thoughts at different points during his career, perhaps influenced by the language of psychology in his generation (Wertsch, 2007). The different ideas that he developed around mediation highlight the difficulty with engaging in his work due to the fact he left vast amounts of unfinished work because of his untimely death, meaning he did not clarify certain ideas or have the opportunity to develop them further. Furthermore, the different translations and interpretations of his work provide further nuances when deconstructing his thoughts.

Despite Vygotsky’s changing thoughts, borrowing heavily from Wertsch (2007) and Daniels (2006), mediation can be separated into two types: explicit and implicit. Explicit means an individual, or the MCO, intentionally introducing a new stimulus. On the contrary,



implicit mediation is less obvious and not intentionally introduced, and is part of a pre-existing independent communicative stream. Vygotsky viewed thought and word as one and insisted on examining them as a 'unit of analysis' that is complex and dynamic (Wertsch, 2007):

*The relationship of thought to word is not a thing but a process, a movement from thought to word and from word to thought. Psychological analysis indicates that this relationship is a developing process which changes as it passes through a series of stages ...The movement of thinking from thought to word is a developmental process.*

(Vygotsky, 1987, p.250 cited in Wertsch, 2007, p.185)

Furthermore, all mediation is embedded in sociocultural activities and related informal discourse. Such implicit mediation often comes to define how people internalise the social world they experience (Hasan, 2005). Wertsch (2007) goes further and suggests five classes of mediators that help produce qualitative transformations, both in individuals and in their environments:

- Social mediation: interactions with other human beings, especially interactions whereby social groups incorporate a person into cultural practices.
- Instrumental or tool mediation: the use of artefacts, such as a spoon or a pencil, created culturally and inherited socially, to engage in human practices.
- Semiotic mediation: the use of symbol systems, such as language, writing, art, and mathematics.
- Anatomical mediation: the use of the body, such as the hands and arms, which permit manipulation of the environment and representation of self in social life.
- Individual mediation: the person's subjectivity and agency in mediating his or her learning activities.

Among these mediators, Vygotsky mainly focused on the use of psychological tools: the semiotic potential of systems of signs and symbols, most significantly language in mediating an individuals' thinking (Moll, 2013). "Just as a mould gives shape to a substance, words can shape an activity into a structure" (Vygotsky, 1978, p.24). The emphasis of language as a primary mediator emphasises that from a Vygotskian perspective, learning is embedded in social contexts and relationships. He noted:

*Every function in the child's development appears twice: first on the social level and later on an individual level; first between people, and then inside the child. This applies equally to voluntary attention, to logical memory and the formation of concepts. All the higher-level functions originate as actual relations between human individuals.*

(Vygotsky, 1978, p.57)

As mentioned above, the process of learning happens on two levels. Internalising an idea allows the individual to address problems and challenges independently (Daniels, 2001). Thus, this process of internalisation includes the development of language and inner speech, which provides the basis for future learning, reflection and problem solving (Potrac et al, 2016). Internalisation of knowledge allows the learner to 'make sense' of their experiences, with Vygotsky being primarily concerned with the problem of internalisation of psychological tools and social relations (Vygotsky, 1997).

From a research perspective, mediation has been rather underexplored in the sports coaching context and not explored at all within coach education. Jones et al (2018) draws attention to the notion of mediation by introducing its Vygotskian roots. Despite not presenting empirical examples, they direct to other papers that refer to mediation in sports coaching, such as Jones and Thomas (2015) presenting the idea of scaffolding in relation to different Vygotskian ideas, one being mediation. Here, they discussed the importance of language in a coaching environment in terms of scaffolding coaches' practice, with scaffolding being a metaphor to describe how a learner can be assisted by another (Wood, Bruner and Ross, 1976). When considering scaffolding, Jones and Thomas (2015) emphasised how language-in-use; its functions and outcomes and how it can be altered needs to be considered in coaching. Whilst they stressed the importance of talk, they also acknowledged how the physical and cultural context plays an important role in scaffolding knowledge. Emphasising the importance of culture, Jones and Thomas (2015, p.72) argued, "Only extreme 'cognitive self-centred' thinkers would argue that individual actions are not influenced by culture. Hence, the issue faced in trying to scaffold at the macro level is how do we change or influence that culture." Macro level scaffolding considers the institutional and organisational context (Hammond & Gibbons, 2005; Sharpe, 2006).

Highlighting the importance of culture, draws attention to the culture in sports coaching of traditional methods dominating, with high levels of direct instruction from the coach (Cassidy et al, 2009; Maclellan et al, 2018; Jones 2006; Kidman, 2001; 2005; Hodges

and Frank, 2004). Drawing on Vygotskian thinking, he argues that “direct instruction is pedagogically fruitless” (Vygotsky, 1987, p.170) which is in line with Jones and Thomas (2015), who not only contextualised the importance of language in sports coaching, but also emphasised understanding the nuances of coaching and recognising it as a social non-linear process characterised by complexity and ambiguity (Jones, Bowes, & Kingston, 2010; Jones, Edwards, & Viotto Filho, 2016; LeBed & Bar-Eli, 2013). Therefore, the current discourse of coaching ignores Vygotsky, who emphasised the joint construction of knowledge and understanding between the learner and the MCO (Vygotsky, 1987).

The current literature within sports coaching opens up recommended possibilities of action with potential benefits of adopting a Vygotskian approach to pedagogy emphasised. However, there is a distinct lack of empirical evidence across sports coaching and coach education. Coaches and coach educators are being encouraged to go against the ‘status quo’, by adopting more thoughtful pedagogies; a Vygotskian approach being a case in point (Jones et al, 2018). Therefore, providing coaches and coach educators with real and applied possibilities of practice can only enhance the case for adopting a Vygotskian informed coaching methodology. The lack of empirical evidence is not just within the notion of mediation, but with all other Vygotskian notions, where mediation plays a prominent role in the learning experience, such as the ZPD as reviewed in the next section.

### **2.2.3 Zone of Proximal Development (ZPD)**

The most widely used definition related to the ZPD is: “the distance between the actual development level [of a child] as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p.86). The concept of the ZPD was created by Vygotsky as a metaphor to assist in explaining the way in which social and participatory learning takes place (John-Steiner and Mahn, 1996). Daniels (2001) drew attention to the social when introducing the ZPD:

*The general genetic law of cultural development asserts the primacy of the social in development. I have sought to emphasise that Vygotsky was concerned to develop an account in which humans were seen as ‘making themselves from the outside.’ Through acting on things in the world they engage with the meanings that those things assumed*

*within social activity. Humans both shape those meanings and are shaped by them. This process takes place within the ZPD.*

(p.56)

Jones et al (2018) argued that, in relation to sports coaching, the lack of appreciation of context has limited the effectiveness of the ZPD resulting in suggestions that have lacked detail to practice. Furthermore, the lack of appreciation of context echoes the traditional approach to coach education that removes contextual consideration of coaches' practice. This section will attempt to provide clarity of the ZPD and how a greater understanding of the notion can inform practice.

The ZPD is one of the most widely discussed and well-known concepts of Vygotsky (Palinscar, 1998). It is referred to in educational research around teaching and learning across a wide range of pedagogical areas (Chaiklin, 2003). The ZPD has gained increasing traction over the years with the simplified interpretation of the concept familiar to many (Chaiklin, 2003). The ZPD has been described as: "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotsky, 1987, p.211). However, what this description, or the earlier definition do not provide is a comprehensive and thorough understanding of the concept, which may lead to misinterpretation and a lack of understanding of what actually constitutes the ZPD. A common misconception is that a person is able to perform a number of tasks alone, while in collaboration they can perform a greater number. The 'range of tasks' performed in collaboration is therefore sometimes presented as the definition of the ZPD (Berk, 1997, p.248), with Vygotsky (1987) emphasising that the definition refers to the development of a specific task, such as specialised, technical tasks like typing or riding a bike, rather than the number of tasks. Chaiklin (2003, p.43) summarises that, "...the ZPD is not concerned with the development of any particular task but must be related to development." Thus, the popularity of using the concept has seemed to simplify its meaning (Chaiklin, 2003). In support of this, Palinscar (1998) suggests that in the context of research about the negotiated nature of teaching and learning, the ZPD is "probably one of the most used and least understood constructs to appear in contemporary educational literature" (p.370). Considering Palinscar's position, it is important to provide detail of the concept to ensure practitioners understand it and utilise it effectively to enhance learning. Chaiklin (2003) deconstructed the ZPD and addressed the misinterpretations of the concept,

giving a more informative and thoughtful representation of what it actually is. Therefore, Chaiklin's (2003) interpretation will influence this section heavily.

The concept of the ZPD was introduced as part of a general analysis around child development but was not a central concept of Vygotsky's theory of child development; rather, its role is to point to an important place in the process of child development (Chaiklin, 2003). Vygotsky described children's development as: "from infancy to adolescence, as a series of relatively long stable periods (one to four years), punctuated by shorter periods of crisis" (Davydov, 1988, p.65). In addition, he formulated criteria for a model of child development; using principles that can explain development as "a single process of self- development" (Vygotsky, 1934/1998, p.189) and a holistic model of stage-by-stage (period) development that integrates the child's social development, motives and cognition (Chaiklin, 2003; Karpov, 2005, 2014). Chaiklin (2003) explains concisely the role of the ZPD, providing a clearer picture of its intention:

*The zone of proximal development is used for two different purposes in the analysis of psychological development (i.e., transition from one age period to another). One purpose is to identify the kinds of maturing psychological functions (and the social interactions associated with them) needed for transition from one age period to the next. The other is to identify the child's current state in relation to developing these functions needed for that transition.*

(Chaiklin, 2003, p.47)

In relation to the above quote, Vygotsky claimed both objective and subjective ZPDs. The objective referred to general functions that needed to be formed within a given time frame (age period), before the next period could be engaged with. Alternatively, the subjective entailed the development of the individual in relation to the objective (Jones, et al, 2018).

Identifying and assessing a learner's ZPD is a principle problem that Chaiklin (2003) identified. Vygotsky claimed that a person's ability to imitate is the basis for a subjective ZPD. Imitation in this context is not copying (Vygotsky, 1997, 1998), but refers to activity carried out by a learner, whether that be an adult or child, in cooperation with another person. Furthermore, it includes everything that the learner cannot do independently, but which they can be taught or directed towards with the help of leading questions (Vygotsky, 1997, 1998). Vygotsky does not seem to have any systematic principles, methods or techniques that guide

how collaboration should be conducted by a person who is assessing the ZPD's meaningful application but suggests that "we assist each child through demonstration, leading questions, and by introducing elements of the task's solution" (Vygotsky, 1987, p.209). Chaiklin (2003) further scrutinised Vygotsky's extensive works and discovered a more comprehensive list of suggestions:

*We show the child how such a problem must be solved and watch to see if he can do the problem by imitating the demonstration. Or we begin to solve the problem and ask the child to finish it. Or we propose that the child solve the problem that is beyond his mental age by cooperating with another, more developed child or, finally, we explain to the child the principle of solving the problem, ask leading questions, analyse the problem for him, etc.*

(Vygotsky, 1998, p.202)

Despite Vygotsky not having specific methods, he does emphasise that "instruction is only useful when it moves ahead of development" (Vygotsky, 1987, p.212) and that "direct instruction is pedagogically fruitless" (Vygotsky, 1987, p.170). Considering Vygotsky's position in relation to direct instruction, Wells (1999, p.32) stated that:

*If the classroom conversation is to engage all participants in a sustained and productive attempt to increase their individual understanding through building knowledge together, it is clear that one member should not monopolise the floor. All members should feel they have a right to offer ideas, make suggestions, ask questions and generally contribute substantively to discussion.*

Building on Wells (1999), whilst agreeing to an extent around building individual understanding together, the coach or coach educator also need to interact individually with the learners to develop a supportive environment where all learners can flourish, which is a key feature of GCA (DeVries and Zan, 1996). When discussing the ZPD, Vygotsky talks about learning being mediated through a MCO, which could be another peer, coach, or coach educator. Therefore, a coach educator, or coach needs to build in opportunities to their practice to enable them to interact with learners on an individual basis. This approach supports the use of GCA as asking questions instead of telling players what to do and encouraging reflection and dialogue are key pedagogical features (Light, 2013). Linking strongly to the ZPD, Jones and Thomas (2015) talk about pedagogical scaffolding, which could be evidenced through interactional talk. This could include questioning (Engin, 2013),

elicitation and recapping (Hammond & Gibbons, 2005), as well as confirmations, elaborations and reformulations (Mercer, 1995).

Interestingly, the direct approach that Vygotsky termed as 'pedagogically fruitless', is somewhat in contrast to the dominant discourse in sports coaching with pedagogy commonly demonstrating direct, autocratic and transmission-based methods where athletes are led to pre-determined outcomes (Harvey and Jarrett, 2014; Light, 2008). Further, the collaborative approach suggested by Wells and Vygotsky is in contrast to the dominant discourse, but resonates with that of GCA, where the participants have the opportunity to make decisions, and ask questions of each other and the coach. This repositions the coach or coach educator as the facilitator of learning, rather than monopolising the floor and leading on all activity. How practitioners collaborate with learners to assess their ZPD is an area to be further investigated and one that creates challenges and opportunities for scholars and practitioners alike to experiment and interpret Vygotsky's work.

Jones et al (2018) argued that Vygotsky's work on the ZPD has been under theorised in a sports coaching context and have started to make tentative links and observations regarding its potential application to sports coaching. Firstly, the need for interaction or collaboration with athletes in assessing the limits of their ZPD, which positions coaching as a social phenomenon, as well as a historical one (Jones and Ronglan, 2017; Jones and Thomas, 2015). The requirement for coaches to interact and collaborate with athletes, and for coach educators with coaches, is important as they act as the MCO to enable learners to participate in and lead practices slightly above their existing capabilities. This interaction generates an understanding for the coach educator as to what the coach comprehends and can perform, therefore assessing their ZPD. Secondly, it presumes the ability of coaches and coach educators to 'see' imitation through action (Jones et al, 2018). This is because, in sport, learning can only be identified through the active demonstration of the desired outcome. Therefore, it requires the coach to have a significant level of understanding of the area or sport they are coaching, and the pedagogy required to enable them to 'see' performance. Without coach understanding and pedagogical application, it would be extremely difficult to assess the limits of an athletes ZPD, as they do not have the knowledge or understanding to make those judgements. Therefore, a strength of this study is the focus on developing the

coaches' understanding of the principles of rugby, but also their pedagogical application, which will support their development in being able to assess the ZPD of players.

Although Jones et al, (2018), Jones and Ronglan (2017) and Jones and Thomas (2015) have begun to develop the potential use and application of the ZPD in sports coaching, these papers are theoretical in nature, making only tentative suggestions as to how the ZPD can be applied in practice. Whilst acknowledging the authors contribution to the growing area of research and creating space for future investigation, empirical studies are needed in applying many of the suggested notions in practice to affirm its potential in coaching practice and within coach education to develop practice.

#### **2.2.4 Concept Formation**

Concept formation is an area of Vygotsky's work that has only been tentatively explored in practice to date (Pritchard, 2019). Vygotsky (1987) argued that combining everyday and scientific concepts is crucial to child development. Here, the process brings together every day knowledge developed in everyday life and theoretical knowledge accumulated in society (Vygotsky, 1986). Furthermore, he emphasised that concepts must be developed in the context that they are familiar with otherwise they will become dis-embedded from practice (Vygotsky, 1986, 1987).

The cultural-historical theory, and the ideas developed within, embody the dialectical relationship between theoretical knowledge and practical life. Far from being a simple concept, Chaiklin (2012, p.25) uses metaphor to explain the concept; "The metaphoric idea of 'the dialectical river' is used to refer to several different interrelated lines of thought that flow together (i.e., currents and counter-currents), originating from different sources." Therefore, there is a continuous flow of ideas that individuals deal with which provide opportunities to build new knowledge onto our existent levels of understanding (Jones et al, 2018). Therefore, considering dialectical relations, Vygotsky's theory on concept formation holds significance in his views on the development of learning. Concept formation is underpinned by the theoretical viewpoint of effective learning as a socially and culturally mediated process. Spontaneous or everyday concepts arise in the context of everyday life and are learned through interaction and mediated speech (Van der Veer, 1998). They are rich in personal experience, contextual to your own environment and there is an absence of



systematic instruction (Karpov, 2005). Such everyday knowledge is unsystematic, empirical, not conscious and often wrong (Karpov, 2014). For example, a child having observed a needle, a pin and a coin sinking in water, comes to the wrong conclusion that all small objects sink and begins to use this rule to predict the behaviour of different objects in water (Zaporozhets, 1986). In a sporting context, children and adults develop everyday ideas about sport by watching it, playing socially for fun in unstructured environments, with little or no instruction. Children and adults play games and try to score points with little thought as to the how or why of doing something. They develop an everyday knowledge of sport, but this is unsystematic, and misconceptions can frequently develop (Karpov, 2014).

Vygotsky (1987) argued that everyday concepts lay the foundations for learning scientific concepts and are strongly connected. Everyday concepts grounded in day to day life experiences create the opportunity for the development of scientific concepts in the context of formal schooling (Fleer, 2008). Vygotsky pointed out the relevant strengths of both as they contributed to each other:

*The formation of concepts develops simultaneously from two directions: from the direction of the general and the particular...the development of a scientific concept begins with the verbal definition. As part of an organised system, this verbal definition descends to concrete; it descends to phenomena which the concept represents. In contrast, the everyday concept tends to develop outside any definite system; it tends to move upwards towards abstraction and generalisation...the weakness of the everyday concept lies in its incapacity for abstraction, in the child's incapacity to operate on it in a voluntary manner...the weakness of the scientific concept lies in its verbalism, in its insufficient saturation with the concrete.*

(Vygotsky, 1987, p. 163, 168, 169)

Scientific concepts are acquired consciously and developed through formal instruction. They are generalised, systematic and abstracted from concrete experience and are therefore easily transferable from one context to another. In addition, the formal instruction should be presented in the form of precise verbal definitions (Vygotsky, 1986). Therefore, it is important that scientific concepts are learnt in the context in which they are familiar with, otherwise they will be removed from everyday practice (Vygotsky, 1987). For example, in a coaching context addressing player learning, taking a holistic approach that focuses on the whole game rather than discreet techniques will embed the learning in everyday practice (Light, 2014).

From a coaches' perspective, engaging practically with the coaching environment provides informal learning opportunities that have been consistently valued in coaching, in essence the everyday experience (Piggot, 2012). Although acknowledging the importance of everyday learning in coaching and not dismissing ground-level experience accumulated, engaging with theoretical knowledge acquired from a given scientific concept (for example coaching pedagogy) mediates the decision-making process (Jones et al, 2018). This is the dialectical relationship leading to overall concept development; i.e., that scientific concepts mediate individual thoughts, giving structure to everyday thinking and problem solving (Karpov, 2003).

Although there is a lack of literature as to how scientific concepts or other Vygotskian notions can be applied to coach education, there are innovative practices happening that resonate with a Vygotskian approach. Therefore, the next section of the literature review will help contextualise the current climate of coach education whilst also exploring its relevancy to Vygotsky.

### **2.3 Coach Education**

Traditionally, formal coach education has been the primary source of improving and increasing the standard of coaching practice with a vast increase in funding in coach education (Nelson, Cushion and Potrac, 2006). However, despite research confirming interactive experiences within the practical coaching contexts as the principal source of knowledge development (Nelson and Cushion, 2006; Chesterfield et al, 2012), coach education continues to frequently be taught didactically (Jones and Turner, 2006) and limited to working within what the learners already know (Jones, Morgan and Harris, 2012). This approach suggests linearity in coach learning and ignores that coaching is both an individual and social process, ignoring the constant ambiguity in coaching practice (Jones and Wallace, 2005). However, despite frequent criticism that current coach education programmes do not provide meaningful and sustainable learning opportunities (Evans and Light, 2007; Nash, 2015), some of these criticisms are being addressed through various providers and initiatives who recognise the social and non-linear nature of coach learning.

Rodriguez, Trudel and Boyd (2018) used Appreciative Inquiry (AI) that focused on an experienced Personal Learning Coach (PLC) working individually with a High-Performance rugby coach to develop their coaching practice. AI is a form of action research that uses the

same guiding principles; experiential learning and the application of findings to inform future practice (McNiff, 2013; Cooperrider et al., 2008; Clements, Morgan and Harris, 2020). This collaborative learning programme involved the coach videoing themselves over the course of eight sessions, with the PLC and coach meeting once a month to discuss progress and plan future actions. Both coach and PLC recognised the benefits of co-creating new knowledge and the recognition that coach development is an ongoing endeavour as opposed to achieving certification. Rodriguez et al (2018) did not discourage the attendance of formal courses, however recognised the PLC is a learning companion, who can assist coaches in reflecting on their own practice and provide a supportive structure in terms of acting on any change in practice.

Similarly, Clements et al (2020) built on previous work by Clements and Morgan (2016) by using AI as a part of a national talent development programme within hockey. The 12 pathway coaches that were involved in the programme recognised that developing leadership, the coach-athlete relationship and player autonomy were key in developing an optimal learning environment. However, during the process the coaches involved contradicted themselves in advocating an authoritative leadership style, yet then stated that the players' needed to develop greater autonomy in their learning. This emphasised generic issues within coach development that highlighted the need to facilitate opportunities for coaches to explore deeper understandings and meanings within their coaching to enable change of practice to occur.

Although the programmes discussed privilege the use of social interaction which Vygotsky advocates, they focus on building on everyday understanding of coaching as opposed to marrying up previous experiences with theoretical knowledge and understanding. Despite not referencing Vygotsky, the programmes discussed below are somewhat Vygotskian in approach and resonate with his work on scientific concepts. The programmes situate learning in the social context, whilst marrying up experiential knowledge accumulated in the field (everyday concepts) and theoretical knowledge (scientific concepts) introduced to the coaches to enable them to evolve their practice.

Jones et al (2018) illustrated the process by using an example from Jones et al (2012) in their paper around developing coaching pedagogy by integrating theory and practice. Here the scientific concepts presented to the coaches were power, interaction and performance.

Coaches were asked to experiment with their everyday practice with these notions in mind, before a subsequent deconstruction and personal theorising of the experience. Engaging with theory raised awareness of the coaches' practice, clarified personal philosophies and provided new and wider theoretical frameworks, providing new insights into their practice (Jones, et al., 2012). As the authors acknowledged, the study did not reflect the wider coaching population, rather a small postgraduate sports coaching cohort, which perhaps limits its applicability to the wider coaching profession. A more recent action research study by Chapron and Morgan (2019) attempted to improve coaching practice in a group of professional rugby coaches. Here Problem Based Learning (PBL)<sup>1</sup> (Jones and Turner, 2006) provided the theoretical knowledge in supporting the development of the coaches pedagogical practice. The coaches in the study felt that engaging in PBL improved the players learning and performance, but also their own pedagogical practice. The coaches in question had developed a significant amount of everyday practical coaching experience (everyday concepts) prior to the study, and the introduction of new theoretical knowledge (scientific concepts) enhanced their practice. This emphasises the dialectical relationship between everyday and scientific concepts, with the PBL approach mediating the coaches' individual thoughts and providing structure to their problem solving. Although neither of these studies address Vygotsky's work directly, the relationship between everyday practice and theoretical knowledge, or in Vygotskian terms everyday and scientific concepts, is evident, highlighting its relevance to coach education and its potential to fill a gap in the literature.

As mentioned in the introduction, previous literature has addressed the challenges of coaches trying to apply GCA in practice following engagement with an NGB coaching course (Reid and Harvey, 2014). The criticisms of the course were wide ranging, however a lack of support for the coaches in adopting GCA and the decontextualised nature of the course were all reported. It is clear that when developing new pedagogical practices coaches need support and opportunities to deconstruct and reconstruct practice, whilst ensuring practice takes place in a relevant context. Providing coaches with support and contextualising the experience to develop coaching practice privileges the social, collaborative and contextual nature of learning that Vygotsky advocates (Vygotsky, 1978, 1987). Furthermore, GCA

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<sup>1</sup> "PBL is an approach to teaching which uses realistic, problematic scenarios and subtle tutor questioning, to challenge and instil in students' critical ways of thinking, to be subsequently transferred into practical situations" (Jones and Turner, 2006, p.185).

emphasise the importance of interaction as does Vygotsky (Vygotsky, 1978; Light, 2013). Utilising Vygotskian concepts to support coaches' development of GCA resonates with the pedagogy of GCA, with the next section looking specifically at the consistencies between Vygotsky and GCA.

## **2.4 Game Centred Approaches (GCA)**

### **2.4.1 Historical Context**

The original game-centred approach was Teaching Games for Understanding (TGfU) which was developed by academics at Loughborough University due to concerns with how PE was being taught and how it did not develop good games players (Harvey, Pill and Almond, 2017). Traditionally, TGfU has been accredited in its development to David Bunker and Rod Thorpe, with Len Almond being recognised in having a major part to play in its development; particularly the focus on developing understanding in TGfU (Almond, 2015). However, a number of other academics at Loughborough University became involved in its inception including David Kirk and Lynne Spackman, with Spackman suggesting they develop their ideas into a model, along with Sarah Doolittle, Karen Booth and Terry Williamson also being part of the development of TGfU. The collaboration of the academics developed the notion of TGfU (Harvey, Pill and Almond, 2017). They suggested that an emphasis on teaching techniques separate to the game resulted in poor decision-making, poor tactical awareness and the inability to apply the learnt techniques in a game context. Bunker and Thorpe (1982) proposed that students should learn skills in contexts that are tied into developing tactical knowledge and grow a sense of what the game is about at the same time.

In conjunction with the development of TGfU, Bunker and Thorpe (1982) argued that some groups of games share key characteristics determined by their rules and tactics. They suggested games such as rugby, football, basketball, netball, and hockey, can be categorised as invasion games as they share the common tactical features of invading territory to make space in attack, containment of space defensively and a goal or target to score. The TGfU model, along with the grouping of games, was recommended as a focus for planning individual lessons, units of lessons and an overall games curriculum (Thorpe and Bunker, 1997).

Since TGfU was developed, other GCA have emerged in scholarly literature, influenced by local culture, institutional contexts or simply as a different way of thinking about pedagogy (Almond, 2015). All of the approaches differ slightly; however, they are unified in the premise that the best way to learn a game is through playing games that retain the essence of the original but have been modified to reduce the complexity of the full version. Game Sense (Den Duyn, 1997) developed in Australia, is less structured than TGfU and open to interpretation as there is no prescribed model, just guiding pedagogical principles, as the Australian Sports Commission and sports coaches wanted to avoid being associated with school based physical education and felt TGfU was too structured (Light, 2013). The Tactical Games Approach (TGA) (Griffin, Mitchell and Oslin, 1997) emerged in the USA, with the model dealing with the relationship between skills and tactics, by locating specific skills within game like situations (Light, 2013). The TGA adopts the model of 'game-question and answer-practice task-game', with the game becoming more complex as the session progresses. The TGA pays more attention to skill execution, whereas TGfU introduces new techniques and skills when the players reach a level of game play that is required to learn a new technique (Kirk and MacPhail, 2002). These are two of the more prominent approaches that emerged from the original TGfU scholarly work. There is a wealth of literature on the various approaches, however identifying how they differ can prove challenging, causing new proponents of GCA to stick to the approach that they are most familiar with, thus not exploring other possible avenues (Light, 2013).

As already stated, the aim of this study was to show how I, a coach educator, used Vygotskian notions to improve rugby union coaches' conceptual understanding of game principles and how to apply them in their own game-centred coaching practice. With that in mind, the final section of the literature review aims to demonstrate the relevance and specific links between Vygotsky and its applicability to GCA.

#### **2.4.2 Vygotskian notions and GCA**

Developing understanding was an important feature of TGfU, with Thorpe and Bunker (1997) emphasising the importance of children understanding the games they played, whilst capitalising on the natural enthusiasm and intrinsic motivation the majority of youngsters bring to playing games. Thorpe and Bunker (1997) highlighted that a person who understands

football can appreciate what players are trying to achieve in hockey and likewise in basketball, as they all come under the invasion game bracket that share similar concepts. Developing understanding and transferring understanding across different contexts resonates with Vygotsky's theory on concept formation. Building on children's everyday understanding of games would enable coaches to address the relevant scientific concepts in their coaching, such as tactical strategies. For example to attack space, either individually or in a group, and potentially facilitate the learners to think abstractly and transfer their game understanding across multiple contexts. To achieve this, coaches require a deep understanding of the principles of the game themselves.

Consistent with Vygotsky, who emphasised the importance of language and mediation in supporting conceptual development (Vygotsky, 1978), a focus on the importance of questioning and language in GCA pedagogy is evident in the literature (Light; 2004; Light, 2013; Mitchell, Oslin and Griffin, 2013; Pill, 2016). In relation to TGfU, the coach should ask open-ended questions, encouraging both individual and collective understanding of both the tactical dimensions of games and the appropriate performance of skills. It is not just coached, rather participants are encouraged to interact with one another, thereby acknowledging that learning occurs in a social context (Vygotsky, 1978; Light and Fawns, 2003). The emphasis on interaction supports a Vygotskian perspective on learning, emphasising the joint construction of knowledge and understanding between the learner and the MCO, but also supporting the importance of language in mediating learning (Vygotsky, 1987). This learning interaction also works at the coach educator to coach level.

Despite the focus in the GCA literature on questioning, research has emphasised the difficulty and challenging nature of a questioning approach (Kinnerk, Harvey, MacDonncha and Lyons, 2018). Insufficient content knowledge (Roberts, 2011), lack of planning in the questions (Karagiannis and Pill, 2017) and the coach feeling condemned to ask questions resulting in not listening to the responses, leading to a lack of clarity for the players (Thomas, Morgan and Mesquita, 2013) have been identified as limitations. The same applies to the coach educator questioning the coaches. Vygotsky did not go into any depth around the importance of questioning, rather focusing on the general assistance given to learners:

*Vygotsky never specified the forms of social assistance to learners... He wrote about collaboration and direction, and assisting children*

*'through demonstration, leading questions and by introducing the initial elements of the task's solution'...but did not specify beyond these general prescriptions.*

(Moll, 1990, p.11)

Whilst not dismissing the importance of questioning, a greater consideration of the role of the MCO and how to mediate athletes learning could potentially address some of the challenges posed within GCA. Light (2013) emphasised that learners can become frustrated if being asked too many questions, so a greater consideration of the wider interactions and how to mediate could assist with developing pedagogy within GCA and coach education to achieve this.

Despite the plethora of literature on GCA, the concept of developing player understanding has been neglected for much of it (Almond, 2015). Developing understanding was a key feature of the development of TGfU, with an emphasis on understanding the game, but also being able to transfer knowledge across different games, such as hockey and football (Thorpe and Bunker, 1997). The dearth of literature in sports coaching and coach education on developing understanding alludes to a lack of knowledge as to how to develop this concept in practice. Thinking through Vygotskian work on concept formation could assist coach educators in developing coaches' understanding of game concepts to apply in their practice, which in turn, would assist coaches' pedagogical application of how to develop understanding in their players. As previously mentioned, scientific concepts are developed through formal instruction, are abstract in nature, and transferable from one context to another (Vygotsky, 1986). Engaging players for example on their use of space in rugby union, an abstract concept, and facilitating collaboration between the players around this area could promote understanding of the abstract. For example, how to attack a gap between two defenders could then be transferred across a multitude of contexts within a game and to other sports. To apply practically assumes strong pedagogical content knowledge of the coach (Roberts, 2011). Pedagogy involves the theory and practice of how best to teach, with content concerning specific knowledge related to the activity, which in this context is rugby union (Van Mullem, Shimon and Van Mullem, 2017). A strong foundation of sport knowledge, such as knowledge of the game and training methods, shapes the pedagogical knowledge that coaches use to help athletes learn (Côté & Gilbert, 2009). This brings into focus the coaches' role as the MCO (Moll, 2014). Here the message to coaches is clear; ensure that you have a



sufficient amount of pedagogical content knowledge to enable you to have the knowledge to facilitate and promote learning in your athletes (Cassidy, Jones and Potrac, 2009).

As identified in the introduction, the application of Vygotskian notions to support coach and player understanding is in its infancy (Jones et al, 2018). Whilst not focusing on Vygotsky, some of Thomas et al's (2013) findings resonated with some of Vygotsky's notions. Using a reflective practice design in applying the TGA in the coaching of tag rugby<sup>2</sup> to a group of nine- and ten-year olds over a ten- week period, they found that it was vital that the tactical complexity of the game matched the players development (Griffin et al, 1997; Mitchell et al, 2013) with the coach becoming more of a facilitator of learning. Vinson and Parker (2019) interviewed six sports coaches to see how they applied Vygotskian notions in their coaching practice. Whilst claiming to provide empirical evidence of the application of Vygotskian notions in practice, in reality, Vygotsky's work provided a theoretical lens to analyse coaching practice.

Recently, in an action research (AR) study that did aim to change practice, Pritchard (2019) attempted to improve the application of game sense pedagogy in the coaching of rugby union by drawing attention to the use of language. Here, an AR approach to coaching rugby union was adopted with junior premiership academy players for an eight-week period, applying Game Sense pedagogy (Light, 2013). The study aimed to examine player and coach learning through scientific and everyday concepts, with the significance of the study lying in a thoughtful re-orientation of Game Sense pedagogy using Vygotsky's concept formation (Den Duyn, 1997; Light, 2013). The study identified some potential benefits of using scientific concepts in instruction, such as, "being precise with language enabled the players to have a clear understanding of the concepts that were being introduced and provided clarity on the field" (p.104). Despite drawing out the importance of language, context and the importance of using precise verbal definitions in clarifying misconceptions, there were inconsistencies in the players application, demonstrating that the learning process is not a seamless transmission of knowledge.

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<sup>2</sup> Tag rugby is a team game in which each player wears a belt with Velcro patches with two tags attached to them. The mode of play is like Touch Rugby with attacking players attempting to dodge, evade and pass a rugby ball while defenders attempt to prevent them scoring by "tagging" - pulling a Velcro attached tag from the ball carrier. The attacking team scores by placing the ball over the oppositions try line. Players are only allowed to pass the ball backwards. Seven players in each team are allowed on the field at a time.

Using Vygotsky in a coaching context is in its early stages with most of the current literature theoretical (Jones and Thomas, 2015; Potrac et al, 2016; Jones et al, 2018). Whilst these authors have provided some initial ideas to explore Vygotskian notions in sport coaching in a more empirical way, it is worth noting that due to Vygotsky not providing specified protocols to assist learning, these ideas are the authors interpretation of how such notions can be applied. Moving forward, developing empirical work around Vygotskian notions will hopefully assist in the practical realities of coaching and coach education, provide practical interpretations of Vygotskian notions, and provide a new thoughtful lens to consider pedagogy in sports coaching and, more specifically for this thesis, coach education.

## **Chapter Three: Methodology**

This chapter begins with an explanation and justification of the ontological and epistemological positions of the thesis. Connected to this, the action research approach is rationalised, before identifying and justifying the ethical considerations, participants, data collection methods, procedures, making a claim to knowledge, data analysis and quality in action research.

### **3.1 Ontological and epistemological position**

When making judgements, you are essentially valuing some things over others (Mallet and Tinning, 2014). The basis for making judgements depends on a personal philosophical standpoint. Epistemology refers to the area of philosophy that is concerned with knowledge, what it is and how it is acquired (Guba, 1990). Underpinning epistemology is ontology, which is concerned with the nature of reality, the nature of existence (Denzin and Lincoln, 2018).

How people view the world will influence their individual ontological positions, with some people, known as positivists, assuming that all knowledge is already out there waiting to be discovered, measured and understood by objective science (Sparkes, 1992). Others reject the idea that reality exists outside our subjective understanding of it and believe that knowledge is socially and culturally constructed, commonly known as the interpretive paradigm (Mallett and Tinning, 2014). Burrell and Morgan (1979) argued that the interpretive paradigm is informed by a concern to understand the world as it is, seeing the social world as an emergent social process, which is created by the individuals concerned. The interpretive perspective has been increasingly used to underpin sports coaching research, due to the increasing acknowledgement of sports coaching being a socially complex endeavour, and the limited benefit of representing sports coaching from a reductionist, positivist position (Jones et al, 2004; Jones et al, 2011; Potrac et al, 2013). Indeed, coach education provision has been criticised for being divorced from the social reality of practice, and limited to quick reflective exercises, whilst working within current knowledge boundaries (Jones and Turner, 2006; Cassidy et al, 2009; Jones et al, 2012).

Despite the interpretive perspective being increasingly used to underpin sports coaching research, critical researchers have criticised it in terms of its subjective

epistemology, where reality is constructed and sustained through the meanings and actions of individuals (Kemmis, 2012). The critical perspective acknowledges that social reality is not just shaped by concepts and ideas, but considers historical, economic and material conditions, which are acknowledged as structuring and influencing the ideas of individuals (Carr and Kemmis, 1986). Acknowledging the different historical forces of everyone in the research process and acknowledging how that influenced their perceptions of their own knowledge and understanding was considered in the project, which as Carr and Kemmis (1986) stated, is often neglected in the interpretive paradigm. Furthermore, Sparkes (1992) elaborated on the priorities of the critical researcher:

*for the critical researcher, the interest is in, how specific forms of knowledge, ways of knowing, and certain values are privileged and legitimised, that is, given meaning and authority relative to the other.*

(p.40)

The critical paradigm claims that social science can never be truly objective or value-free and operates from the perspective that research should be conducted with the goal of social change in mind (Denzin and Lincoln, 2018). Critical researchers in coaching ask questions about own and others' assumptions and purposes, so reproductive coaching practices can be challenged, therefore promoting opportunities for structural and behavioural change (Mallet and Tinning, 2014). Transforming practice of the coaches by improving their knowledge and understanding of the principles of rugby and pedagogical application of coaching these principles supports critical theory, as it is looking to change and empower the coaches through the research. Considering the various academics perspectives on critical theory within this section, this research sits within the critical paradigm.

### **3.2 Action Research**

The origins of AR can be traced back to the work of Lewin (1946) and are broadly associated with changes in working practice (Castle, 1994). AR has been employed in various settings including education (Mcfee, 1993; Tinning et al, 1996; Waters-Adams, 1994) and health (Hart and Bond, 1995; Titchen and Binnie, 1993). The process of AR has cycles of observation, interpretation, action and reflection that enables the continuous development and testing of explanations in practice (McNiff et al., 1996). When work is ongoing, it can be interpreted as a cycle of cycles (McNiff and Whitehead, 2010). Authors have found various ways of

representing this process; characterising it as cycles of reflective action (Lewin, 1946); flow charts (Elliot, 1991) and spirals (Kemmis and McTaggart, 1988). McNiff and Whitehead (2010), argue that the most realistic frameworks are ones that communicate learning as non-linear, showing the unpredictable nature of life and acknowledging that a straightforward pathway rarely occurs.

Despite the variety of literature around AR, the broad aim from an educational perspective is to support practitioners to seek ways to provide good quality education by transforming the quality of teaching related activities, with a view to improve both student and teacher learning (Koshy, 2010). Koshy (2010) identified common key methodological features of AR as: a method for improving educational practice; involves action, evaluation and reflection; knowledge is created through action; and findings emerge as action develops but are not concrete or absolute.

As opposed to traditional research that implies an end point, AR is directed towards a greater understanding and the improvement of practice over time, rather than a final outcome (Bell, 1999). The systematic process of AR is monitored over varying agreed periods of time, through a variety of data collection methods, such as reflective diaries, observations, interviews and focus groups (Koshy, 2010). This data can be used to make changes in practice through modifications, re-orientating definitions and engaging with problem-solving (Cohen and Mannion, 1994). Its aim is to bring a lasting benefit to an ongoing process, rather than a final solution (McNiff and Whitehead, 2010).

There are different types of AR, which can be distinguished in terms of Habermas's knowledge-constitutive interests (1972) as technical, practical or emancipatory. Technical AR is an examination into whether a selected intervention, based on a pre-specified theoretical framework, can be applied in a practical setting (Holter and Schwartz-Barcott, 1993). In practical AR, practitioners "...articulate their own concerns, plan strategic action for change, monitor the problems and effects of changes, and reflect on the value and consequences of the changes actually achieved' (Kincheloe, 1991, p.10). In addition, emancipatory AR is committed to social change; it aims to be empowering, transforming in nature, not just with the immediate group but to influence wider parties (Ledwith, 2005). In emancipatory AR, the practitioner takes joint responsibility for the development of practice, understandings and

situations, and sees these as socially constructed in the interactive process (Carr and Kemmis, 1986).

Based on the provided definitions, this project has components of technical, practical and emancipatory AR, making it challenging to give a definitive answer on the specific type. The technical element in this study is based on how I, as the coach educator, used Vygotskian notions to improve the coaches' understanding of game principles and their application in practice, with Vygotskian notions being the pre-determined theoretical framework used to inform my practice. The practical element of the project was related to the coaches' application of GCA and the practical issues and dilemmas that emanated from this. The emancipatory element was the transformative nature of the coaches' practice. Furthermore, this project has the potential for dissemination to a wider audience, also making it potentially emancipatory in nature (Coghlan and Brannick, 2005).

Despite this study primarily focusing on my practice, AR is never solitary as it involves individuals finding ways to improve what they are doing in the company of others (McNiff and Whitehead, 2010). This integrative approach to research incorporates three voices - first, second and third person (Reason and Bradbury, 2001). First person focuses on the individual researching their practice, second person addresses the researchers' ability to work with others on areas through joint action, with third person being impersonal and actualised through dissemination by reporting and publishing (Coghlan and Brannick, 2005). Considering these definitions, this AR project is both first and second person, with the potential for it to be third person through the dissemination of the study in the thesis write up and potential publications. I was actively researching my own practice as a coach educator, making it first person. The collaborative approach with the coaches and critical friends involved working on areas of mutual concern involving a large amount of face to face dialogue, discussion and joint action to improve both my practice as a coach educator and the coaches application of rugby principles within GCA, also makes this research second person AR.

AR has been used in sports coaching and coach education previously, with Evans and Light (2008) using AR to develop an elite rugby coach's practice of Game Sense pedagogy, in collaboration with a 'sports pedagogue'. The 'sports pedagogue' provided pedagogical knowledge and theoretical understanding, whilst also adopting the role of critical friend to help facilitate the coach's reflections. They reported that the collaboration was of benefit in

exposing coaches to theory that could support the development of their practice, as they received honest feedback from the pedagogue, and it helped facilitate the coach's reflection of their practice. Ahlberg, Mallett and Tinning (2008) used AR to assist with an elite rugby coach's development. Findings supported AR as an appropriate methodology for improving coaching practice, with the study reporting an increase in awareness of a coach's personal coaching behaviours, developing evidence-based review processes that can improve coach development, and facilitating players autonomy. During the study, the coach used a critical friend who was an experienced coach and former international to help guide their practice. The role of a critical friend is to be both to be a friend and critic (Mcniff and Whitehead, 2011). Clements and Morgan (2016) utilised collaborative action research to educate a group of youth coaches to improve the learning environment within a national talent development system in hockey. The study allowed the opportunity for the coaches to engage with others in the learning process, giving the coaches' confidence they were not alone in their coaching issues, whilst giving them the opportunity to share and reflect. Furthermore, Clements and Morgan (2016) recognised that AR could be applied to any aspect of coaching practice that groups of coaches identify as something that they want to develop or improve collectively, opening up opportunities to explore alternative pedagogies through AR. Detailed in the literature review, Chapron and Morgan (2019) use a combination of PBL and AR to improve professional rugby coaches' pedagogical practice.

### **3.3 Ethical procedures**

Before the study began, ethical issues were discussed with the supervisory team and ethical approval was gained from the Cardiff Metropolitan University's Ethics committee. The school where the children being coached attended was provided with an information sheet (Appendix 5) and a consent form for the head teacher (Appendix 6). As the school already had consent from parents to bring their children onto the university grounds and the children were not subjects of the study but were receiving lessons during their curriculum physical education time, additional consent from parents, or assent from the children, was not required. The participant coaches, students of the university, were provided with an information sheet (Appendix 7) and the expectations of them. The information sheet showed the aim and objectives of the study, the process, data collection methods and their requirement in the study. Consent forms (Appendix 8) were provided for the participant

coaches to demonstrate their willingness to take part. The purpose of the study was outlined to the coaching participants, which emphasised the importance of confidentiality and anonymity, and that personal information would not be published in the write up of the study. It was also highlighted that participation in the study was voluntary and that the participant coaches could withdraw at any time.

As a qualitative researcher and given my previous relationship with the coaches, it was ethically important to recognise that I was a central figure that influenced the coaches' thinking and thus the co-construction of knowledge (Finlay, 2002; McNiff and Whitehead, 2010). Rather than ignore my presence, I embraced this as an opportunity to develop their practice as opposed to a view that it could hinder it. Therefore, to help facilitate and develop intersubjective understandings, I ensured that I acted reflexively. Reflexivity is ambiguous; however, it involves looking outwards to the social artefacts and forms of thought which saturate our practices and inward to challenge the processes by which we make sense of the world (White, 2001). Therefore, in acting ethically, I ensured that I looked outwards in terms of observing the coaches' practice by continually engaging with literature to inform my observations of the coaches' delivery, whilst looking honestly and openly at my own thoughts to ensure accurate and honest interpretations and understandings of practice were emerging. The critical friends supported the reflexive process by challenging me and critiquing the observed coaching practice and my interpretations and understandings of them, along with my own thoughts. Acting reflexively and considering my actions also manifested itself in how I conducted myself ethically away from the study in relation to the coaches' university and sporting life. During this period, I was not involved with team selection for the rugby club as to not cloud my judgement, nor did I have any responsibility for any assessments of the coaches as part of their university study during this period.

### **3.4 Participants**

My role in the study was that of researcher and coach educator. During the study, I lectured at the participating university alongside coaching in the rugby programme. Previously, I had coached a representative U18 team and premiership rugby academy in England and at an independent school in Australia. I hold a master's degree in Sports Coaching, am a qualified



primary school teacher, hold an RFU Level 2 rugby coaching qualification and have played rugby for over 20 years in the UK, Australia and the U.A.E.

Six rugby coaches aged between 19 and 23 years volunteered to be part of the coaching group. The coaches (see Table 1 which details the pseudonyms of the coaches and their experiences) were enrolled at the university as full-time students on a sports course. Further, they had expressed a willingness to develop their rugby coaching and had an enhanced DBS certificate.

Name	Age	Experience
Jake	22	Two years coaching rugby full time in a private school environment to children aged between 7 and 18.
John	20	Experience of assisting in primary PE lessons, however no rugby coaching experience.
Edward	19	No previous experience
David	20	Six months experience coaching the universities U19 rugby side
Ryan	20	Six months experience coaching the universities U19 rugby side
Henry	23	No previous experience

*Table 1: Summary of coaches' experience (coaches have been given pseudonyms to protect anonymity)*

A Primary School of approximately thirty year five children, attended the university every Tuesday during the spring term for approximately fifty minutes (during curriculum time) to receive rugby coaching sessions. Two critical friends who were also the research supervisors were part of the project. Both the critical friends are experienced sports pedagogues with vast knowledge and experience of playing and coaching rugby union. The role of a critical friend is to evaluate all aspects of the research by challenging assumptions, help consider ways of reducing subjectivity, ethical issues and usefulness and replicability of the study (Koshy, 2010). They observed each session and provided thoughtful and constructive critique of it, challenged my thinking and made me consider the development of the project on a weekly basis.

### **3.5 Data Collection**

Data was collected using three methods, which included:

1. Observations of the participants coaching practice
2. Weekly reflective logs
3. Focus groups with the coaches

#### **3.5.1 Observations**

Observation plays an important part in data collection within most AR projects and is a natural process as we observe people all the time and make judgements based on those observations (Koshy, 2010). Participant observations were used throughout all coaching sessions. Participant observation involves the researcher living in the context and being part of it (Cohen and Manion, 1994). Adopting the role as the MCO (Vygotsky, 1978) enhanced my ability to observe, as I fully understood the expectations of the planned session content. My enhanced knowledge and immersion in Vygotskian theory meant that I was 'thinking through Vygotsky' and had the subject knowledge to make judgements on practice. The observations were semi-structured in nature, in the respect that I was observing the coaches' practice in relation to the aim and objectives of the study; in short, how they demonstrated conceptual understanding of the rugby principles, which were informed by myself using Vygotskian notions in educating, through their coaching of rugby within GCA. However, there was still an element of flexibility to allow for unexpected outcomes and comments (Koshy, 2010). Providing flexibility enabled other potential avenues to emerge, that would perhaps have been unexpected at the beginning of the study. However, a challenging aspect was trying to observe all six coaches in action. Having the critical friends observe all sessions and question me thoroughly drew focus and scrutiny to the observations and addressed anything that I had not noticed.

During the observations, I wrote notes on the coaches' practice and provided feedback to them during the post session meeting. I did not use a specific template to observe, but rather considered how they applied their conceptual understanding of the rugby principles within GCA. The observation notes were written up within four hours of the session being completed, allowing for clarity and accuracy in translation of notes. Observation of practice

was crucial to the study as it allowed me to feedback to the coaches on their coaching practice and their application of rugby principles within GCA.

### **3.5.2 Reflections**

Due to the reflective nature of AR, it was deemed purposeful for me to keep a reflective journal to provide ongoing documentary data that that I could reflect on and return to (Mcniff and Whitehead, 2010). Reflective journals can serve as an instrument for the improvement of learning by creating a connection between theory and practice (Dyment and O'Connell, 2011). The journal was used to illustrate points around the coaches' role and development in the process, create thick descriptions that showed complexities, chart the progress of the study and reflect on my own thinking and use of Vygotsky in relation to the development of the coaches' understanding and application of rugby principles (Mcniff and Whitehead, 2009). The reflective log was added to four times per week to enable entries to take place within four hours of the sessions to include; details of pre and post coaching meetings, my role within the coaching sessions and feedback from critical friends following the meetings with them (Appendix 2).

### **3.5.3 Focus Groups**

Focus groups were used to draw upon the attitudes, beliefs and experiences of the coaching group in relation to the study's aim and objectives. As opposed to a group interview where the emphasis is on the questions and responses of the researcher and participants, focus groups are driven by the interaction within a group, based on the topics supplied by the researcher (Morgan, 1997). Kitzinger (1994, 1995) argues that interaction is the key feature of focus groups because the interaction highlights the participant's view of the world, the language they use about an issue and their values and beliefs about a situation. Interaction enables the participants to question each other, but also re-evaluate and reconsider their own understanding in relation to experiences (Stewart and Shamdasani, 1992). Using focus groups in this AR was appropriate due to the social nature of the project, which is consistent with Vygotsky's view that learning is socially situated, and that language is the greatest mediator of learning (Vygotsky, 1978; Jones, et al, 2018).

Three focus groups took place during the study, one at the beginning of the study, with the other two taking place at the end of each AR cycle. Each one lasted approximately one hour, recorded via an iPad and transcribed verbatim. The focus groups aimed to be a collaborative learning forum (Koshy, 2010) for the coaches to further develop their conceptual understanding and application of the principles of rugby union, informed by my use of Vygotskian notions, whilst also being a form of evaluation to complete each cycle of AR. The first focus group was to establish baseline data around the coaches' experience of being coached and of coaching rugby and their depth of understanding of the principles of the game. The second focus group discussed the progress of the study in relation to the aim and objectives (my coach education and the coaches' understanding and application of the principles of rugby), whilst also discussing and clarifying the evolving focus for the study. The final focus group focused on the overall progress of the study in relation to the aim and objectives, along with potential avenues for further study. In addition, I met with the coaches on a weekly basis; the day before the session to clarify the content for the following day and to gather their thoughts and reflections a week after the previous session. Despite primarily focusing on their understanding and application of rugby principles, it was also important to get the coaches' perspective on how they felt I had developed their coaching practice, as to be consistent with the aim and objectives and to support the collaborative nature of AR and the collaborative approach to learning that Vygotsky advocates (Vygotsky, 1978). There were post session meetings for the coaches each week to reflect on their practice in a group context and generate discussion around the session. I did not consider these as focus groups due to the shorter nature of the meetings as they would only last on average about twenty minutes. However, they generated important findings, so I included details of these meetings as part of my reflective journal.

### **3.6 Action Research Procedures**

#### **3.6.1 Organisation of the pupils and sessions**

The children were split into four groups prior to the start of the study and stayed in those groups for the duration of it. This was done by the class teacher, who had a good understanding of who the children were and who they would work best with. For the first five weeks of the study, where logistically possible, the children had the same coach for each

session to enable the coaches to build relationships with the children. After five weeks, the coaches delivered to a different group each session, in response to them wanting to work with different groups to experience how they might need to adapt their delivery for different children. This was based on their responses in the second focus group. The sessions took place in the university campus sports hall, which had markings for four badminton courts. At one end of the sports hall there was a viewing balcony where the critical friends observed the sessions.

### **3.6.2 Pre-Intervention**

Before beginning the intervention phase of the study, I met with the coaches to explain what the study entailed, the aim and objectives and my role as coach educator. I emphasised their requirements regarding time commitment and administration. The meeting provided the coaches an opportunity to ask any questions around the study.

### **3.6.3 Week by Week Procedures**

The 11 weeks were organised into two cycles of AR, the first being 6 weeks and the second 5 weeks. A focus group was conducted at the beginning of cycle one and at the end of each cycle to evaluate the learning of the coaches and to allow the subsequent planning of the next cycle of AR, thereby following the plan, act, observe and evaluate stages of AR (Mcniff and Whitehead, 2010).

Each week the AR cycles adopted a similar structure in terms of its organisation. The coaches and I met for thirty minutes the day before each coaching session to reflect on the previous week's session, and to introduce, discuss and clarify the content for the following day's session. The following day the coaches would deliver the coaching session to the children. After the session, the coaches and I would meet immediately for me to share my observations and for them to reflect on the session, share their thoughts and discuss possibilities of action and change for the following week. This would take about twenty minutes. The following day I would meet for one hour with the critical friends for them to share their observations, question me and discuss how to progress the study. The detailed week by week procedures are in the appendices (Appendix 4).

During cycle one, I applied the Vygotskian notion of concept formation to develop the coaches' understanding and delivery of the principle of *move forward into space* within GCA. This principle was informed by GCA literature (Thorpe and Bunker, 1986; Light, 2013) and my own experience, understanding and coaching of rugby. To develop the coaches' understanding of everyday knowledge of rugby in relation to the concept they were applying, I asked them to draw on their own experiences of rugby and how they developed their knowledge and understanding of the game. Following this, we discussed what constituted everyday knowledge (playing in unstructured environments without instruction), and scientific knowledge of concepts (knowledge acquired through formal instruction such as rugby coaching). This also drew into focus the social, cultural and historical perspective of learning, as it provided an understanding of the coaches' previous experiences and how that may impact their future development. Promoting such discussion is consistent with a Vygotskian approach in terms of developing a collaborative and co-operative approach to learning (Vygotsky, 1978).

Near the beginning of cycle one, the coaches struggled with the structure and organisation of their sessions situated within GCA and with addressing misconceptions in the children's play. Utilising the notion of concept formation, I used the TGA (Mitchell, Oslin and Griffin, 2013) to provide a clearer structure for the coaches to teach the principles of the game of rugby and inform the restructuring of the coaches' everyday understanding of GCA. Following the introduction of the TGA, the coaches started to become more adept in their delivery and identifying the children's misconceptions of the principles of the game.

As their coaching evolved in cycle one, the coaches started to focus more on their use of language in delivery to mediate the children's learning. Furthermore, it emerged that all coaches could not be developed at the same rate, drawing attention to the Vygotskian notion of the ZPD to address the coaches individual learning needs to maximise their development (Vygotsky, 1978). Although Vygotsky did not prescribe specific social assistance for the learner to develop within their ZPD, he suggested assistance through demonstration, asking leading questions and by introducing elements of a task's solution (Vygotsky, 1987). I drew on his suggestions, whilst also asking promoting discussion and interaction between the coaches and I and the coaches themselves.

As this was both first- and second-person AR, the Vygotskian notions were used to inform my own practice as a coach educator, and the coaches' practice with the children. It was inevitable that as I became more knowledgeable of and familiar with the Vygotskian notions, and used them to improve my practice as a coach educator, that these same concepts would seep into the ideas and language that I was using with the coaches to improve their pedagogic practice with the children. However, I also felt that it was important not to become too theoretical in my explanations and communications with the coaches, so I introduced Vygotskian notions to the coaches, as and when I felt they were appropriate for their learning and in a useable and more familiar language that they could easily engage with. Using terminology such as questioning, use of language, collaboration, history and facilitation were terms that I used regularly with the coaches, throughout the AR cycles, as I felt that these would be easily understood and relatable to the coaches. I avoided more theoretical language such as ZPD or MCO, but the ideas were introduced by using the terminology mentioned in the previous sentence.

At the start of cycle two, as a result of the second focus group that explored the first cycle of AR, in collaboration between myself and the coaches it was decided that they needed to evolve their coaching practice to explore the use of the cultural tools of technology, language and cones to mediate learning. It was felt the coaches could develop the children's understanding further and that they were not mediating the children's learning as effectively as possible. The coaches requested to rotate groups weekly to see how they could adjust their practice to different children. After the first session of cycle two, it emerged that the coaches needed to be more specific with their messages to develop further understanding in the pupils. Therefore, the initial concept of *move forward into space* evolved to incorporate *width* and *depth*. These principles were added to facilitate the coaches being more specific with their language in use and consequently develop the children's understanding of the principles of the game and how they apply them in practice. As cycle two evolved, the coaches started to define *space*, *width* and *depth* in collaboration with the children, however they identified that it was a complex concept. To evolve the concept and the children's understanding of *move forward into space*, *width* and *depth*, the coaches started to manipulate contexts within the game scenarios by altering pitch dimensions, getting different pupils to lead the attack and defence and increasing or decreasing the number of defenders and attackers. In addition,

the coaches used cones to articulate and mediate their explanation of *move forward into space, width and depth* to the children, which in turn enabled the children to demonstrate their understanding of the concept. A final focus group concluded the second cycle and the AR project.

### **3.7 Making a claim to knowledge**

The aim of all research is to create new knowledge. Therefore, when presenting research to others, the researcher is asking for their new knowledge to be validated, along with their assumptions about the knowledge generating process (McNiff and Whitehead, 2010).

Two forms of validation need to be considered to support a claim to new knowledge: personal validation and social validation. Personal validation considers the actions of the researcher regarding the new knowledge claims. McNiff and Whitehead (2010) state that you need to check your findings considering your own personal values. In light of my own values, I have stayed true to my epistemological values in the research process in how I believe knowledge is created. I believe that knowledge is created and co-constructed and, in this project, I believe that I have stayed true to that regarding my actions throughout. Furthermore, I stayed true to my social values with how I see people in relation to myself and each other by enabling the coaches to speak freely and share their viewpoints in an open and respectful manner.

Social validation is when others test the validity of what you are saying in relation to your evidence (McNiff and Whitehead, 2010). This also involves considering the validity of the evidence and whether the researcher or evidence is to be believed. This requires the researcher to demonstrate to a validation group that what they are reporting is indeed accurate. The validation group for this study was the two critical friends and I. Weekly meetings scrutinised the study where the critical friends demonstrated their own criticality by considering whether I demonstrated originality of thought. During these weekly meetings I had to articulate the procedures of the study clearly and justify how robust my data collection was (Koshy, 2010). I was challenged consistently on how I was conducting the research in regards the pedagogical application of GCA informed by Vygotsky to justify my approach.



### 3.8 Data Analysis

To facilitate data analysis and generate evidence of achieving the aim and objectives of the study, a set of procedures were followed to allow for systematic data analysis (McNiff, 2016). McNiff (2016) discusses the idea of a golden thread that should be visible throughout the research process: “the end should connect the beginning and the connections between them should be easily discernible” (p.20). Therefore, the aim and objectives were always at the centre of the data analysis procedures.

In AR, data collection and data analysis run concurrently with one another, so that the researcher can identify the ideas and issues generated that can inform understanding of the situation and inform the next stage of the AR process (Schutt, 2001). In this study and consistent with AR, analysis started after some of the data had been collected, with the resultant analysis informing the next phase of the data collection (Bryman, 2004).

This study looked at applying some of Vygotsky’s theoretical notions in practice; framing initial analysis as deductive in nature. Deductive analysis is driven by a theoretical interest and rather than provide rich description of data, it is more of a detailed analysis of some aspects of the data (Braun and Clarke, 2006). This was supported by an inductive analysis of the issues and dilemmas experienced by me and the coaches over the course of the study. The value of inductive analysis is its generation of new ‘theory’, opening possibilities for unpredictable sub-themes to emerge from the data (Creswell, 2013).

The first step of data analysis consisted of reading through the data collected to enable me to become familiar with it. During this stage and with commonalities between the observational and reflective notes, focus groups and coaching group discussions, initial deductive coding took place (McNiff, 2016). Initial deductive codes were generated by addressing my use of selected Vygotskian notions (social, cultural and historical perspective, mediation, ZPD and concept formation) to develop coaches’ understanding of rugby principles and pedagogical ability to deliver within GCA. Inductive codes were then generated around how the coaches’ created a good learning environment and the challenges they faced when developing it. An example of an inductive code generated was ‘missed learning opportunities.

The coded data was then ordered into lower and higher order themes related to the aim and objectives of the study. Finally, evidence was sought and found in the data and relevant themes selected (McNiff, 2016) to corroborate the research aim. Once evidence was found related to the generated themes, a data analysis map (see page 44) was generated to document the evidence found, but to also clearly represent how the lower and higher order themes were related to the aim and objectives of the study.

### **3.9 Judging quality in action research**

In AR, when making a claim to new knowledge, validation needs to be considered to support new claims (Whitehead and McNiff, 2006). As a result, when considering quality in AR, the social validity of the AR is a process of democratic evaluation (Whitehead and McNiff, 2006). Being an active participant in the AR process means the individual has a responsibility to act accordingly to negotiated rules, which are grounded in the shared commitment to the transformative potentials of communicative action (Habermas, 1987). As AR is about initiating change and transforming practice, according to Habermas (1987), transforming entrenched social norms means to interrupt and transform public discourses (Whitehead and McNiff, 2006). Consequently, Whitehead and McNiff (2006) recognised some basic principles for achieving intersubjective agreement to establish validity and legitimise claims to knowledge. Therefore, to support claims to new knowledge and endorse social validity, in accordance with the guidance provided by Whitehead and McNiff (2006, p.102), I made every effort to ensure that the evidence I chose to represent myself and the other participants spoke in ways that was:

- Comprehensible, the language used was commonly understood by all;
- Truthful, in that the accounts were truthful without fabrication of events;
- Sincere, so that all parties trusted what the other said;
- Appropriate for the context, whilst recognising unspoken cultural norms in which their discourses are embedded.

In relation to this study, the social and collaborative nature of the research process meant that the discourses used were understood by all, with shared understanding and meanings being developed that were appropriate for the context. Accounts of events were my

interpretation of what happened during the multiple interactions before, during and after coaching sessions, in an attempt to ensure that events were scrutinised, and the intersubjective agreements represented. Furthermore, observations and reflections were written up within four hours of the events occurring and all focus groups were recorded and transcribed verbatim. Mutual trust was developed within the coaching group which facilitated a climate of openness for the coaches to deconstruct and reconstruct their practice without fear of ridicule.

## **Chapter Four: Results and Discussion**

### **4.1 Introduction**

Considering how the results of an AR project are presented is imperative to how successfully it is disseminated. The unfolding nature of AR lends itself to be written up in a cycle by cycle phase that tells the story of the AR process, with stories taking different approaches; one being the traditional format of a beginning, middle and end (Todorov, 1999). However, the 'messy' nature of AR can make it difficult to distinguish clearly between cycles as it is an ongoing process and can develop cycles within cycles (McNiff and Whitehead, 2010). As a result, in this study, the AR cycles were linked to my objectives and thematic analysis of how I used Vygotskian notions to develop the coaches' evolving conceptual understanding about the key principles of rugby union, how the coaches' applied that understanding within a game-based coaching approach and the dilemmas the coaches and I faced in practice. McNiff (2013) says that you should think about the best way to communicate your AR story to the reader. Given the nature of the AR project, the three clear objectives of the study and thematic data analysis, I decided to present the results in themes, showing how I facilitated the coaches' development before considering their evolving practice.

The first section of the results addresses the coaches' developing conceptual knowledge and understanding of the principles of rugby and how I helped develop them. The second section addresses the application of the coaches' knowledge and understanding of rugby within their coaching, with both sections incorporating the dilemmas that I and the coaches faced throughout the project. Within each higher-order theme, lower-order themes are developed, with evidence being displayed in each lower-order theme and discussed in light of relevant literature, with the data analysis map (Figure 1) illustrating the themes generated.

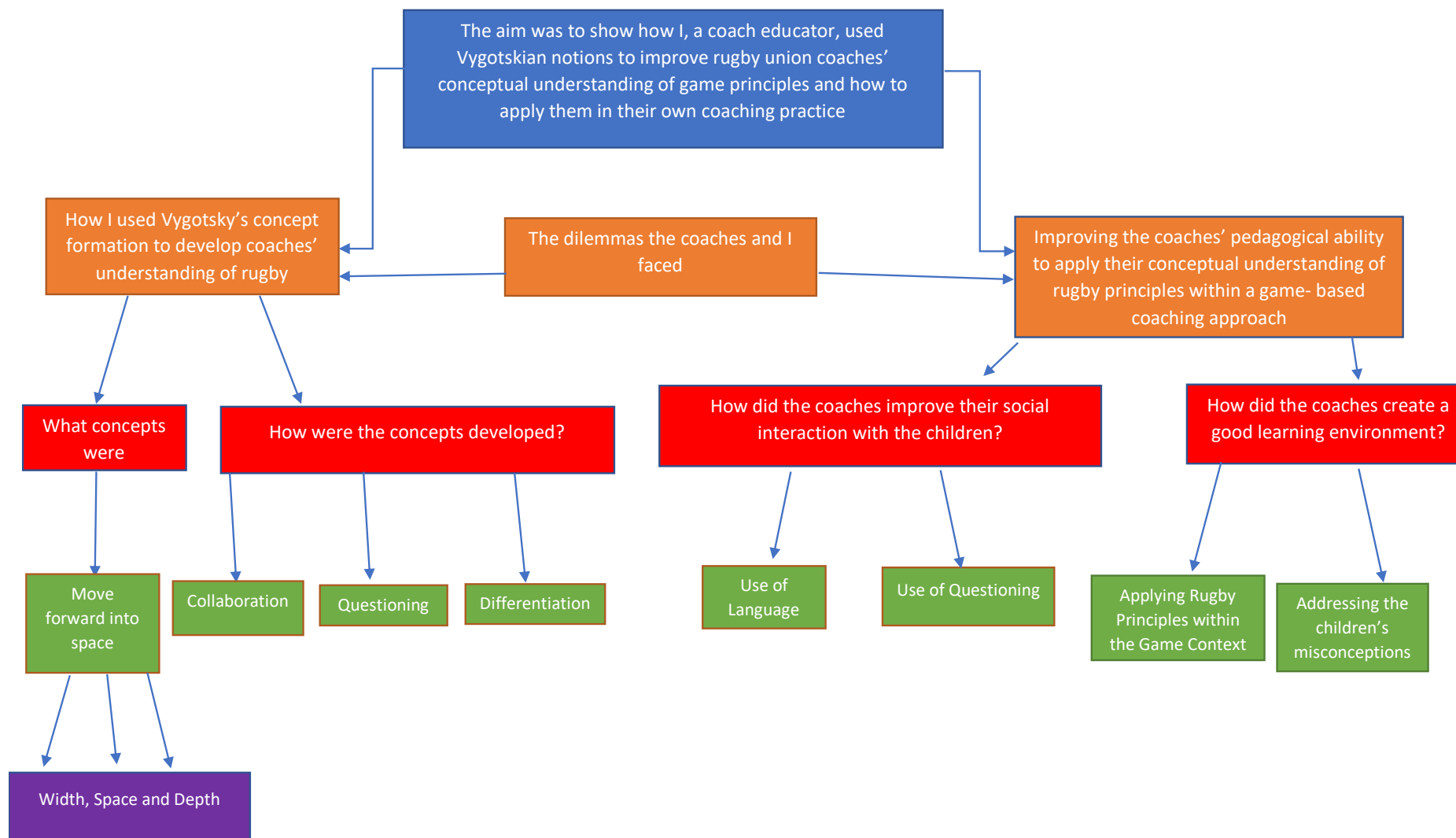


Figure 1 Data Analysis Map

## 4.2 How I used the Vygotskian notion of concept formation to develop coaches' understanding of rugby

This section of the results looks at how I used the Vygotskian notion of scientific concepts to develop the coaches' knowledge and understanding of the principles of rugby union. The section is split into four lower-order themes of: what concepts were developed, developing collaboration to enhance coach learning, using questioning to facilitate coach learning and differentiation to meet the coaches individual learning needs. In each lower-order theme the results will be presented followed by a theoretically informed discussion.

### 4.2.1 The concepts that were developed

Co-constructing the principle to teach and thus developing a shared understanding of it was consistent with the work of Vygotsky, who advocated a co-operative and collaborative approach to teaching and learning (Vygotsky, 1987). It was important to gain information about the coaches' existing knowledge and understanding of the game, so we could make an informed decision about which specific concept to begin with. This baseline understanding was important to show evidence of improved knowledge and understanding as the cycles of AR progressed. To gain baseline knowledge of the coaches' everyday understanding of rugby, discussion in the first focus group took place around their existing understanding of the game, where they also noted their ideas on a whiteboard:

*Ryan: It's guided by a set of laws.*

*Jake: Score more points than the opposition.*

*Ryan: Good skillset, get the ball.*

*Henry: Maintain possession.*

*David: Get to the try line.*

*Henry: Run forward, space.*

(First Focus Group)

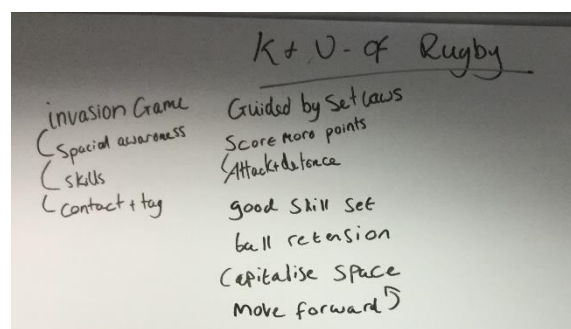


Figure 2: The coaches recording of their knowledge and understanding of rugby

The coaches identified elements of the game with certain terms and phrases, however, they did not elaborate on their understanding or clarify what they meant by them. Nevertheless, they did explicitly state 'move forward' and 'capitalise space' as elements of the game of rugby, acknowledging these as key principles of the game, so *move forward into space* became the starting principle for the action research.

What became clear in the first focus group was the variety of past experiences that the coaches had. This shaped their understanding of rugby, for example, David shared his past experiences of being coached:

*When I was 14 or 15, I used to play at \*Beresford we didn't use to do that much game-based stuff in training and then I went to \*Nexus and they were unbeaten in 3 years and every training session would be game based with a skill in between the game.*

(First Focus Group)

Albeit discussing coaching approaches, I was aware that their past playing experiences would naturally influence their understanding of rugby. Rather than dismissing the coaches' previous experiences, it was important that they and I drew on these to develop a shared understanding of the principles of rugby amongst the coaching group. The variety of different experiences was illustrated in the contrast between John and Edward. John had experience of assisting the teaching of physical education in a primary school context, and as a player, he was in the university first team and was an under 20 rugby international. Whereas Edward had no experience of working with children in any capacity and his playing experiences had been limited to his local rugby club and the university third team. The intention of this first focus group then, was to bring the coaches together to share their knowledge and understanding of rugby and to co-construct a shared understanding of the principles of the game that were to be developed, beginning with *move forward into space*, as already identified.

## **4.2.2 How the coaches' understanding of rugby principles were developed**

### **4.2.2.1 Developing collaboration to enhance coach learning in developing coaches' understanding of rugby**

Given Vygotsky's view of learning as a social process between the MCO and the learner (Daniels, 2001), developing collaboration with the coaches was crucial in my thinking when

improving their knowledge and understanding of the game. Throughout the evolving cycles, my intention was to think with this Vygotskian notion to work collaboratively with the coaches and develop their conceptual understanding of rugby and how to coach it. Despite my best intentions, and at that time thinking I was drawing on their ideas, on reflection, I was initially too direct in my approach, which contrasts the collaborative approach that Vygotsky advocates and that I intended on using. Prior to the study and after engaging with Vygotskian literature more thoroughly, I felt I used some of his ideas in how I educated, despite not having a detailed understanding of his theories. Being too direct reflected my initial ideas of how I imagined the content unfolding, resulting in me not drawing upon Vygotskian thinking sufficiently or collaborating enough with the coaches to promote their learning. An example of this is where I virtually told them what to do in their first session, as the extract below from the first focus group illustrates:

*Me: So, if you go into a game, we want them on the ball all the time, we want them in high activity time. 7 on 7 we can get to that. We want 4 v 3, 3 v 2, 2 v 1, 1 v 1. So, for the first session, you've got 40 minutes, do you want me to give you a plan and say deliver it, or do you want to go away and plan it?*

(First Focus Group)

The coaches seemed quite happy with doing this themselves, as suggested here:

*Jake: I think there's got to be an element of we plan it and come back to you.*

*David: We could plan it before and send it over and if you've got something already or want us to do something differently for the first one then.*

*Ryan: We can do that either way, either you give us the plan and we do it.*

*Me: I am very conscious that I don't want to throw you in, give you too much work, but on the other hand if you plan it yourself, you know the content then. Ideally if possible, on Monday I want us to meet to get clarity, you guys get thinking time. Just for 15 minutes.*

(First Focus Group)

As a result of the coaches' responses, I felt happy I had encouraged a collaborative approach to the first planned session, with the coaches then going away to plan it. However, rather than using some of my ideas and generating their own, they incorporated all of my suggestions in the session plan they presented to me. This I feel was a consequence of my fairly direct approach in the first focus group and feeling a sense of responsibility not to



overload the coaches with information at the start. Despite thinking I had made it explicit to the coaches to incorporate their own ideas, on reflection, I did not give them ownership to incorporate their own content. As a result, I was not actively drawing on and applying Vygotskian notions in how I was coach educating, but rather how I acted was endorsing the traditional approach that I disagreed with.

As the weeks progressed, I continued to work with this notion and I felt that my ability to work collaboratively with the coaches evolved by discussing with the coaches the challenges they faced when coaching and listening to how I could support them best in their practice. I tried to let the coaches take more ownership of the session specific activities, however they mentioned that they found how to organise sessions challenging. As a result, I introduced the TGA (Mitchell, Oslin and Griffin, 2013) to provide the structure they craved. It meant the coaches had greater security within their session:

*To make the session clearer for the coaches, I decided to introduce the TGA. This structure allows the coaches to ensure the children have lots of playing opportunities. The coaches seemed keen and understood the model as it was clear to follow...*

(Pre-Session Reflection Week 3)

However, this did not mean that I was completely redundant in my role during their delivery. During game play I would discuss with the coaches as to what they were seeing and ask how they would move the session forward, privileging social interaction in the learning process. Despite the coaches being able to discuss with me what they were observing, they still did not always interact with the children around their performance and actively promote the children's understanding. Therefore, I interjected on occasions to promote opportunities for the children to share their understanding, privilege social interaction in the learning process, whilst also providing an example to the coaches:

*During the session, I did not do as much, as I wanted the coaches to focus on their delivery and executing the TGA approach. On 2 occasions, I intervened during the session to question the children. On both occasions, it was because the support was far away from the ball carrier and we are emphasising the children being close. Highlighting the misconceptions prompted the coaches to recognise and act on opportunities so that they could then intervene more themselves moving forward.*

(Session Reflection Week 3)

Towards the end of cycle one, it was identified that the children were struggling with how to support the ball carrier, which had a detrimental effect on their ability to *move forward into space* as a team. My role as the MCO here was to support and facilitate the coaches in how they coached these principles, and to ensure they had the relevant rugby knowledge to coach it. Asking the coaches how they could coach support promoted discussion amongst them as to how they could address it in practice:

*They discussed perhaps doing a 3 v 1 first, getting the support player to start really deep, start behind, take the ball off the ball carrier etc. There is no right answer, the coaches are having the freedom to play around with the concept.*

(Pre-Session Reflection Week 5)

The coaches were therefore given freedom within the TGA around how to coach support. In doing so, they recognised that a consistent approach to the language used across the coaching group would ensure clarity when coaching. Agreeing on the language helped illustrate the development of the coaches thinking, knowledge and understanding in relation to rugby coaching: *We discussed different ways of explaining it, different phrases that they could use. For example, support was defined as 'helping the ball carrier advance the ball forward into space.'* (Pre-Session Reflection Week 5).

During the second cycle of AR, the collaborative relationship with the coaches' evolved further, with them taking on more responsibility in the planning process with them starting to voice their opinions more confidently. My role was to promote the collaborative relationship between myself and the coaches by facilitating discussions on a weekly basis around the rugby principles they were trying to develop. There was more clarity with their articulation of ideas, highlighting their increasing knowledge and confidence in their understanding of rugby principles, which manifested in them making more suggestions and taking on a greater role in the planning process. The extracts below illustrate this when the coaches looked to develop the children's understanding of *move forward into space*:

*What came out from the discussion is that the boys want to develop the players understanding further by being more specific in their messages, therefore evolving the initial concept by incorporating depth and width.*

(Post Session Reflection Week 7)

*Edward gave his opinion and felt that it was important to slow things down initially, as from his personal previous experience in football, he felt that helped him develop understanding of game play in football. Following this, I encouraged them to draw on their own experiences in relation to this...I made some initial suggestions that sparked their conversation around how to develop understanding. I asked them to go away and plan the middle section of the session.*

(Pre-Session Reflection Week 8)

In essence, they were now planning the whole session using the TGA framework, as they would always begin and end the sessions with 3 v 3 or 4 v 4 games, where they would have the freedom to manipulate the game accordingly. Asking the coaches to plan the middle part was a step forward in terms of altering the dynamics of the collaborative relationship and giving them more responsibility. Despite still making some suggestions myself, the coaches were given more autonomy and encouraged to take control and plan the sessions themselves, whereas previously I had struggled to relinquish control. Both I and them had become more confident in their understanding of the game principles, manifesting itself in their improved delivery of the concepts.

Emphasising to the coaches that I wanted them to collaborate more, encouraged them to take more of a lead. As the coach educator this was satisfying to see as it reassured me that the process we had been working through and evolving in terms of developing rugby knowledge and pedagogical practice added value to the coaches. During the final two weeks the dynamics in the relationship had significantly developed with the coaches taking on more responsibility in the collaborative relationship I had with them. They started taking more ownership of the planning, and their increased understanding of the principles they were focusing on in their delivery enabled them to manipulate game conditions and interact with the children more effectively to promote learning. For example, during the middle part of the final session, instead of moving into a separate game related practice, one of the coaches manipulated the context within the game to focus on understanding:

*John had the group playing a game for the whole session, however during the middle part he slowed it down more and really focused on their understanding. They seemed incredibly motivated during this session and they seemed to be enjoying it and therefore were really engaged.*

(Observation of Session Week 10)

In the final focus group, John alluded to this and related it to increased confidence in his knowledge and understanding of the game principles:

*John: Obviously, we all pretty much started off the same. We would do a game then do a drill type of thing, then we would do a game again. But then towards the end of it, most of us stuck to a game pretty much all the way through and had confidence in that. We just changed the game to suit their needs.*

(Final Focus Group)

Having the ability to change in the moment of coaching demonstrated the improved ability of the coaches to 'see' performance, observe the active demonstration of the desired outcome and make a sound judgement. Recognising that they were more confident to be flexible in their approach showed an increased conceptual understanding of the principles of rugby.

#### **4.2.2.2 Discussion of developing collaboration to enhance coach learning in developing coaches' understanding of rugby**

Vygotsky's view of learning emphasised and insisted on the development of collaborative and co-operative instructional practices between the MCO, that being me in this context, and the learner (the individual coaches) (Daniels, 2001). As the learner becomes more adept and competent then the support from the MCO becomes less frequent and intermittent (Potrac and Cassidy, 2006). Considering that I was meant to be using Vygotskian notions, my initial interactions with the coaches were not very collaborative in nature, with me reverting to the traditional discourse of sports coaching where the coach, or coach educator in this instance, adopts a largely prescriptive approach (Kidman, Lombardo and Jones, 2010). Moreover, this was an approach I was actively trying to move away from, given I was meant to be using Vygotsky's beliefs on learning (Vygotsky, 1987). Despite Vygotsky not specifying forms of social assistance in the learning process; he did write about collaboration and assisting through demonstration and asking leading questions (Vygotsky, 1978). The term scaffolding was not used by Vygotsky but has been applied to his work and concerns the pedagogic structuring implemented by the teacher or coach in order to help participants learn (Moll, 1990). Therefore, how I scaffolded coach learning in the early stages of the project needed greater thought and consideration to encourage the collaborative and co-operative relationship.

At the beginning of the project I was focused on my interpretation of Vygotskian pedagogy and how that can be applied to improve coaches' conceptual understanding of rugby. My intention on acting co-operatively with the coaches was in support of a Vygotskian view of the importance of collaboration in the learning process (Vygotsky, 1987). Although I suggested they plan away from me, the prior input of suggesting the session content during the first focus group, and my insistence that the coaches present the plan to me the day before the first session, reinforced my control rather than the collaborative approach I was trying to promote, at this early stage of the process.

As stated earlier, Vygotsky provided limited guidance on the specific social assistance given to learners, although did stress the importance of mediation and conceptual development (Vygotsky, 1978). Therefore, the notions and practical complexities of working in collaboration are open to a degree of interpretation, which, as the coach educator, made the process challenging. Jones et al (2004) emphasised the uncertainty and messiness of the everyday coaching context. With this complexity in mind, my initial direct approach could have been due to the fact I was trying to put an element of certainty on an uncertain process. Neither the coaches nor I had met the children before, so we were all unaware of their knowledge, understanding and previous experiences. As a result, the directness in my initial approach could be interpreted as reacting to the situation and attempting to remove as much ambiguity as possible from an inherently messy context (Jones et al, 2012).

As I became less didactic in my approach and actively considered the theoretical ideas of Vygotsky to enable the coaches to share ideas without my pre-conceived input, the coaches began to take more ownership of the process and became more confident in vocalising their ideas. Far from being a straightforward process and falling short of giving complete control to the coaches, it was an illustration of the evolving collaborative learning relationship. Privileging social interaction and collaboration throughout, enabled constant and consistent dialogue which provided me with a greater awareness of where the coaches were in their understanding. The frequent opportunities to interact provided a clear picture of their developing knowledge and understanding. This is supported in the literature that promotes social interaction between coaches enabling them to share ideas and learn from one another (Cushion, 2013; Harvey and Jarrett, 2013). Jones et al. (2018) emphasised that; how people are spoken about and treated influences what they think of themselves and how they

subsequently behave. The evolving knowledge, understanding and confidence of the coaches in this study, therefore, may have partly been a consequence of the way they were valued and positively spoken about by me, which enabled the collaborative relationship to evolve.

Although I found it challenging to relinquish an element of control in terms of developing coach autonomy, watching the coaches develop their confidence and competence in their own coaching practice, as a result of the evolving collaborative relationship, was rewarding and encouraged me to pursue this approach. An example of the methods I used to relinquish control was evident in utilising the Vygotskian notion of developing knowledge of scientific concepts, in this context the knowledge of *move forward into space, width and depth* and the TGA (Vygotsky, 1978; Mitchell, Oslin and Griffin, 2013). Here, I introduced the TGA in our pre-session meeting in week 3 by showing two PowerPoint slides that outlined the TGA lesson structure and the purpose behind it. Privileging social interaction, I then asked open questions to the group around different elements of the TGA to promote discussion around how the coaches could facilitate children's learning of *move forward into space* within the approach. The TGA provided structure to the coaches' sessions which provided the security the coaches required whilst enabling confidence to develop and reduced anxiety in terms of what to do when. The evolving session structure further enabled me to focus on developing the coaches' competence and confidence in terms of *move forward into space, width and depth*. For example, asking open ended questions around various pedagogical considerations such as language, suggesting game scenarios such as a 3 v 1 and asking the coaches to discuss how they might deliver these by drawing on their own experiences all helped facilitate the coaches' developing autonomy within the study and myself to relinquish control. These methods were consistent with Vygotsky's general prescriptions of social assistance to the learner where collaboration and direction was emphasised, along with demonstrations, leading questions and introducing initial elements to a task's solution (Vygotsky, 1978; Moll, 1990; Daniels, 2006).

#### **4.2.2.3 Using questioning to facilitate coach learning in developing their understanding of rugby**

Vygotsky wrote about the use of questioning as a form of social assistance to promote learning (Vygotsky, 1978). Therefore, to move the coaches' knowledge and understanding of the rugby principles forward, I drew attention to my own use of questioning with the coaches.

Initially, trying to draw out information from the coaches was difficult as they gave limited responses and struggled to elaborate on points they made, as the extract below illustrates:

*Me: What is the context that you learn through in rugby?*

*Ryan: Spatial awareness*

*David: It's an invasion game*

*Ryan: Continuity*

*Me: So, if it's an invasion game, how would you think they could learn best in their context?*

*David: Game based scenarios.*

*John: Mine was all game based*

(First Focus Group)

Despite the coaches referring to game-based scenarios, referencing spatial awareness, continuity and recognising rugby as an invasion game, there was a lack of detail and evidence of game knowledge in this early interaction. Although I was a little concerned about their lack of responses, it gave an initial understanding as to where they were regarding their current ability to articulate their knowledge, which I felt was greater than they communicated. It emphasised that I needed to be clearer in what I was asking and how I questioned to ensure full understanding of what was being asked of the coaches, as initial responses did not fully answer the question asked. I wanted the coaches to elaborate on their knowledge and understanding of rugby and develop discussion between themselves to provide me with a thorough understanding of their knowledge and understanding. Providing clarity in my questioning would challenge the coaches' thinking around the coaching of *move forward into space*, to move their own and the children's learning forward. To facilitate this, I interacted regularly with the coaches during coaching sessions by questioning them about their practice and how it could be improved, which I reflected on below:

*Throughout the session, I interacted with the coaches frequently. I questioned them regularly and asked why they were doing certain things. I asked them to be more precise in their interactions, generate understanding from the players and build on their knowledge. I questioned about the activities that they were doing, probing them to alter them and adjust challenge where I deemed it was too easy. For example, one of the coaches had made an area too big. He gradually moved it in, but without signposting the children as to any changes in the task.*

(Session Reflection Week 2)

As we were coming towards the end of the first cycle, as a consequence of my reflections, my questioning of the coaches became less frequent, but more open in approach, by asking more 'how' type questions, to encourage them to elaborate and share their improved knowledge and understanding of the game. Instead of dictating as to what the coaches should do to address the issues they faced in their coaching, I wanted them to address the issue themselves, so I questioned them, accordingly, ensuring I was more open and specific in my approach:

*Following discussions with critical friends last week, we established that there was an issue with the children's understanding of support. Also, how we teach it. I introduced the structure of the session, which is still the TGA, but asked about the 'how' in the teaching of a 2 v 1, how do we generate the understanding to support close to the ball carrier and to try and beat the defender first?*

(Pre-Session Reflection Week 5)

The ongoing meetings and interactions during the AR cycles helped the coaches to better articulate their knowledge and understanding of the game principles, as I challenged them more about their knowledge and understanding of the game. They were questioned throughout on their understanding of rugby and how they were coaching it and how to use questioning themselves when coaching. At the beginning of the first cycle the coaches initially struggled to articulate their knowledge and understanding of rugby. However, when questioned at the end of the second cycle around the development of their practice, they were better able to articulate their knowledge and understanding of the game. From the beginning of the first cycle to the end of the second cycle their articulation of their thinking when questioned developed considerably in terms of depth, clarity and confidence. In the final focus group, the coaches were asked around their own improved knowledge and understanding of rugby principles. Edward articulated this in relation to his change in coaching practice:

*At the beginning, it was us coaching directly, whereas towards the end, we had a basic plan of what we were going to do but have developed to coach to the needs of the students. Initially, the children would do stuff that we wouldn't expect them to do and wouldn't know how to respond. Whereas now, I can see the wider picture of coaching. Rather than just coaching...we have got to take a step back and look at what's going on rather than just the person on the ball.*

(Final Focus Group)



This emphasised the importance of a high level of knowledge and understanding of rugby to facilitate their pedagogic practice. Increasing their knowledge and understanding helped the coaches respond to moments in the game, thereby improving their ability to 'see' performance and enabling them to personalise children's learning.

#### **4.2.2.4 Discussion of using questioning to facilitate coach learning**

The importance of questioning to develop the coaches' understanding of the game, draws to focus the Vygotskian notions of mediation, the role of the MCO and imitation (Vygotsky, 1978). According to Vygotsky, concepts should be introduced in the form of precise verbal definitions; emphasising the use and importance of language when questioning (Vygotsky, 1978). Vygotsky recognised language as a fundamental mediator of learning between people (Vygotsky, 1978), which emphasises the importance of the meaning attached to the words, rather than the words themselves (Jones, et al, 2018). How I questioned the coaches needed to help promote thinking to address problems and challenges, therefore, ensuring I provided clarity in my questioning was essential. Being open in my approach was important to facilitate elaboration, but not too open as to lose clarity and focus on the topic in hand. This was evident in week 5 (see evidence above) where I was open enough to encourage discussion and thinking but narrow enough to ensure focus. Further, being careful with the words used when questioning the coaches, was crucial in terms of them internalising useable and effective knowledge which would allow them to make sense of their coaching experiences (Vygotsky, 1997).

Whilst not being a simple transmission of knowledge between myself and the coaches, the interactions I had with them, and the questions that I asked them, assumed that they had the ability to imitate. Imitation does not refer to a mindless copying of actions, rather Vygotsky's view of imitation is that it presupposes some understanding of the structural relations in a problem that is being solved (Chaiklin, 2003). The coaches' ability to engage and socially interact with me, along with how they then applied questioning in their own practice was a good example of this. Vygotsky stated that "...the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as at the ripening functions" (Vygotsky, 1997, p.188). Considering Vygotsky's perspective, albeit aimed at child development, the same principles can apply to the development of the coaches' knowledge and understanding of the principles of rugby within this project. The

questioning was intended to move them forward in their understanding by being open in my approach and encouraging them to discuss their ideas and elaborate upon them. However, whilst questioning the coaches and moving their knowledge and understanding forward, it became clear to me that they needed individualised support to ensure they all developed, which drew attention to how I differentiated the support for each coach.

#### **4.2.2.5 Differentiation to meet the coaches' individual learning needs in developing conceptual understanding of rugby**

After the first three weeks of the project, it emerged that I could not support the coaches with a 'one size fits all' approach, as they all had different needs. Albeit not surprising, it was something that I had probably taken for granted and not considered too deeply before the start of the project. Engaging with Vygotsky's work on the ZPD and Chaiklin's (2003) interpretation of both objective and subjective ZPD's, helped my understanding and recognition of this. Furthermore, paying more attention to the coaches' history and factoring that into my support of them from the start of the study may have helped. On reflection, I was more concerned with ensuring the children had a positive experience and that the coaches applied GCA in their delivery, rather than the individual nuances of each coaches' delivery. However, the need to differentiate their support soon came to the fore:

*I will try and work with the coaches on a more individual basis as some need more structure than others. For example, spending more time with Ryan in ensuring the structure and organisation of his sessions is effective. Also, pushing John with his coaching by introducing him to the concept of introducing precise verbal definitions and discussing how he can do that in instruction.*

(Reflection on Session Week 4)

Ensuring they were supported on an individual basis was important to facilitate development across the coaches. Although at the time of the study they were part of the same rugby programme at the university as players, all the coaches came from different backgrounds and had different rugby experiences previously, which influenced their knowledge and understanding of the game. However, towards the end of cycle one, rather than me explain to the coaches that they needed different levels of support, they recognised this themselves. Creating and promoting a collaborative learning environment between myself and the coaches where social interaction was privileged, meant the open dialogue that was advocated

supported the coaches with understanding their own practice. As the MCO I could have explicitly stated to the coaches where they needed support, however I wanted to continue to develop the co-operative relationship I had with them. Having an awareness of their own individual needs, demonstrated that the coaches were becoming more aware of their own progress, as I identified in my weekly reflections: *All the coaches identified that they are at different stages and said that they would like individual support moving forward* (Reflection on Session Week 5).

During the second cycle the coaches' knowledge and understanding of rugby principles was showing progress, meaning I did not interject during the coaching sessions as frequently as I did in cycle one. However, this was not a straightforward linear process and I often had to challenge them individually to elaborate and provide a clearer conceptualisation for the children. For example:

*John consistently reinforced the use of width and depth in his practice... What John also did was introduce verbal definitions in collaboration around the concepts. One of the children defined width as "how much space you have across." However, what John didn't do was elaborate on the definition, drill it down and put specifics on it. Therefore, I have challenged him to develop this area of his knowledge to move his practice forward.*

(Observation Week 8)

The social assistance I provided to the coaches was also given away from the coaching sessions, during the pre and post session meetings, privileging the importance of social interaction. For example, John was challenged to provide more clarity and elaborate on definitions, articulating his knowledge of *move forward into space, width and depth*, which he did confidently the following week:

*He had them talking in their teams quite a lot for them to be able to come up with ways to attack space, with John involving himself by just questioning the pupils on what they had decided and why they think would be effective. Every time he elaborated on the children's input he added extra detail linked to the abstract concepts we were focusing on.*

(Observation Week 9)

Towards the end of the second cycle, Edward found it challenging to relay and articulate his knowledge of the principles of *move forward into space, width and depth*. Therefore, how I

interacted and discussed potential ideas with him, regarding his interactions with the children, was important to generate new knowledge and learning for his practice. Although I felt that Edward had improved his level of understanding of the rugby principles, his challenge in articulating that understanding revealed the complex and non-linear nature of learning:

*Edward felt that his explanation and understanding of depth was full of ambiguity..... I asked him how he could have approached it differently and we discussed about showing the children and walking it through with them.*

(Reflection on Session Week 9)

However, in the following week's session, Edward articulated his understanding of *width*, *space* and *depth* more effectively to the players, using cones to support his explanation. This showed his ability to engage with the support provided, emphasising that it takes time to internalise new ideas and thinking. His understanding of the key principles of *move forward into space*, *width* and *depth* and my interactions with him, enabled Edward to better communicate with the children in developing their knowledge and understanding of the principles. Here, the social assistance provided by me to Edward, and in turn by him to the children, enabled the children to access content which may have been beyond them without this mediation:

*He explained to them moving the cones what he meant by width, space and depth. The players didn't seem to grasp an understanding of what he was saying, so he asked one of the children to see if they could show him what they meant by width and depth. One of the children said: "If this defender (Moves cone) goes over here, there is more space between that defender and that one (Points at cones), therefore the attacker should aim to go here (Moves cone into gap) so they can run forward without any defenders there."*

(Observation Week 10)

Having the ability and capacity to support the coaches with their individual learning needs required me to have an understanding of their knowledge and understanding of rugby principles and for them to have an awareness of this themselves. Therefore, my role was to develop the collaborative relationship with the coaches, whilst personalising my input with them.

#### 4.2.2.6 Discussion of differentiation to meet the coaches learning needs

Several Vygotskian notions were used to individualise the development of the coaches' knowledge and understanding of the rugby principles, most notably the ZPD, the importance of history, concept formation and mediation (Vygotsky, 1978, 1986, 1987). As detailed in the literature review, Vygotsky claimed both objective and subjective ZPDs (Jones et al., 2018), with the development of each individual coach drawing attention to the subjective. The objective zone in this context were the expectations that I had of what the coaches' knowledge and understanding of the principles of rugby should be. However, the range of coaching abilities within the group emphasised the importance of understanding the individuals' subjective zone to help them navigate it.

Chaiklin (2003) defines the ZPD as intellectual actions and mental functions that an individual is able to use in interaction, where independent performance is inadequate, thereby supporting the individual assessment of the coaches ZPD and the personalised support given. Although it could be argued that Edward's subjective ZPD was at a lower level than some of the other coaches, resulting in him needing more support than some of the others, he was able to access the social assistance I provided him with and to apply it independently in his coaching. Edward was one of the coaches who had no experience of coaching or working with children prior to the study, whereas Jake and John had far more experience of coaching and working with primary aged children. Therefore, considering Vygotsky's perspective on scientific concepts in respect to everyday experiences creating the opportunity for the development of scientific concepts (Vygotsky, 1987), the more experienced coaches had more everyday experience to draw on. Here the importance of history emerged with Vygotsky claiming that human behaviour and learning can only be explained through recourse to history and culture (Jones et al., 2018). For example, John was asked to explore the use of precise verbal definitions in his coaching after week 4 and started to provide clarity after a five-week period in week 9. However, with less experience to draw upon, Edward was challenged with his articulation of ideas throughout. Despite showing improvements which were evidenced by week 10, more time to internalise his knowledge of rugby principles would have helped him to articulate and apply them more successfully in his practice.

Drawing attention to the mediating factors of learning, Vygotsky emphasised that this primarily takes place through the application of cultural and psychological tools, which include language and the use of symbols (Moll, 2014). For the coaches to develop their knowledge and understanding, it assumes that I mediated their individual learning appropriately. This brought the importance of understanding the individuals' subjective ZPDs and how to best mediate and provide social assistance to the forefront. As mentioned previously, spending more time initially on developing the coaches' understanding of the rugby principles may have enhanced their articulation of these in the act of coaching. For example, asking the coaches to draw on whiteboards their understanding of the rugby principles being coached, whilst promoting interaction and discussion to elaborate on their drawn ideas. However, despite the coaches needing different levels of support, the important aspect to support coach learning was the social interaction and social assistance provided by me. Although not giving specific prescriptions as to the social assistance required, Vygotsky wrote about collaboration and direction, assisting through demonstration, leading questions and introducing initial elements of the task's solution (Vygotsky, 1987). When developing the coaches' knowledge and understanding of rugby principles, despite the lack of specificity by Vygotsky, which affords practitioners an element of flexibility, I tried to stay tight to Vygotsky's suggestions in terms of social assistance given to the learner. For example, John needed direction in terms of a brief targeted social interaction to improve his ability to demonstrate his knowledge and understanding. Whereas with Edward, I asked him leading questions around how he could have improved his explanation of the rugby principles, whilst working collaboratively with him to engage him with new ideas he could apply in practice.

#### **4.3 Improving the coaches' pedagogy to deliver GCA to the pupils**

This section of the results looks at developing the coaches' pedagogy to deliver GCA and how Vygotsky's approach to learning influenced this. The section is split into two higher-order themes of how the coaches improved their social interaction with the children and how the coaches' created a good learning environment. Within the first higher order theme, two lower order themes will be addressed in terms of the coaches use of language and use of questioning in practice. The second higher order theme addresses the coaches' ability to apply rugby principles within a game context and developing the coaches' ability to address

misconceptions in the children's play. In each lower-order theme the results will be presented followed by a discussion.

### **4.3.1 How did the coaches improve their social interaction with the children?**

#### **4.3.1.1 The coaches applied use of questioning**

Despite Vygotsky not providing a specific pedagogy, it is generally agreed that questioning can be used to promote social interaction and learning in developing conscious awareness in the learner; with the social interaction leading to internalisation of concepts and ideas (Daniels, 2006). Therefore, developing the coaches' ability to question effectively was a key area to emerge around the development of their coaching practice. Near the beginning of cycle one, I emphasised the importance of questioning in relation to the development of *move forward into space*; whilst highlighting that open questions facilitated this, as it provided the children the opportunity to elaborate and articulate their thinking. Two of the coaches reiterated and acknowledged the importance of this:

*I asked the coaches for the forthcoming session to really 'drill down on the detail', in relation to the concept. Correct any misconceptions, engage the children by questioning how they are doing something. David added that they need to focus on the how, what, where, when and why and apply it when questioning. Ryan highlighted that they need to draw the information out of the children rather than tell them.*

(Pre-Session Reflection Week 2)

One of the pedagogical principles of GCA which supports Vygotsky's approach to learning is the importance of social interaction and an awareness that learning is social in nature; with GCA emphasising questioning to generate dialogue, which should in turn facilitate the internalisation of concepts and understanding of games (Vygotsky, 1978; Light, 2013). Therefore, it was important that the coaches applied this in practice. Despite the coaches seemingly understanding and identifying this in the pre-session meeting, they did not apply this in their early practice. *The coaches were not detailed in terms of questioning around the concept of move forward into space* (Observation of Session Week 2). They recognised this during our post session meeting: *It was identified the 'how' and 'why' needed to be addressed in terms of the children's learning* (Reflection on Session Week 2). Along with asking the coaches to be more detailed in how they questioned, I also interjected during their sessions to encourage the children to articulate their understanding of *move forward into space* and

to provide an example on how to question, so that the coaches could see this in action and hopefully use it more effectively to develop the children's understanding. I ensured I was careful with the language I used when demonstrating the use of questioning to convey the meaning and understanding I wanted the children to internalise. This would help not only mediate the children's understanding of rugby, but also, assist the coaches in the development of their questioning. For example:

*(The girl received the ball, changed direction and ran into space and scored after a 2 v1)*

*Me: What did you do there?*

*Girl: Ran*

*Me: Where did you run?*

*Girl: Over the line*

*Me: You ran over the line, but how did you get there, what did you do and why?*

*Girl: Well I saw someone run towards me to stop me, so I changed where I was going to run where the space was and ran as fast as I could.*

*Me: Well done. One last question, why did you run into space?*

*Girl: Well if there is space, it means that nobody is there to stop you and you can just run.*

(Reflection on Session Week 2)

Along with providing examples of how to question, I ensured that frequent social interactions between myself and the coaches took place during sessions. These interactions were intended to promote the coaches' thinking, understanding and application of questioning as part of their game-centred pedagogy:

*Throughout the session, I interacted with the coaches frequently. I questioned them regularly and asked why they were doing certain things. I asked them to be more precise in their interactions, generate understanding from the players and build on their knowledge.*

(Reflection on Session Week 2)

Towards the end of cycle one, the coaches started identifying more questioning opportunities whilst increasing their frequency of open questions, providing the children the opportunity to elaborate and articulate their thinking, whilst contextualising their questions to situations within the game. Consequently, the coaches were able to gain a better insight into the children's game understanding which meant they could personalise their questions and begin to address the individual needs of the learners, which the coaches acknowledged:



*He moved onto 2 v 1s, but the emphasis was on the ball carrier to beat the man first. Jake asked, 'Why do you need to try and beat them first.'... Throughout John's session, he continually emphasised moving forward into space and would question effectively on positives. 'What did you do well then?' 'How was it good?'*

(Observation of Session Week 4)

*Edward emphasised that he can begin to differentiate his questioning to the children as he is beginning to get to grips with their playing ability, but also how they interact with him.*

(Reflection of Session Week 4)

As the concept evolved into the second cycle, whilst continuing to ask open questions focusing on the children's understanding of the *move forward into space* concept, the coaches were required to promote the children's understanding of *width* and *depth*. This required them to become more specific in the content of their questioning, whilst still ensuring an element of openness. Being specific was asking questions in relation to the expanded concept, with an element of openness so the children did not feel restricted in their articulation of their understanding. For example, in one of John's sessions, a girl ran in between 2 defenders and scored a try:

*John: That was a good try, what was good about it?*

*Girl: There was space in between 2 defenders so I ran there. That's what space is, the hole in between 2 defenders.*

(Observation of Session Week 9)

In addition, Edward questioned efficiently around depth to promote children's understanding:

*He asked the children "What happens when we have too much depth?" They responded with "we stop going forwards and the defence get a head start." "So, what do you need to do?" "We need to make sure we are deep enough to make sure we can still run onto the ball and move forward."*

(Observation of Session Week 9)

Furthermore, Henry identified that he used open questions and scenarios to promote children's conscious awareness and understanding of *width* and *depth*:

*Henry: With width and depth, say that was the one cone (moves and points to paper on the table), I'd position the cones and position them quite far back and I'd ask what is the problem with that?*

*One of the pupil's answered, 'it would probably be a hard pass for the person to do'. I then asked what else... (Pupil replied) 'Well if they're that far back when they receive the ball the defence is just going to come up. If you move the cone here (moves the paper forward) if you pass the ball there you could run through the gap before the defender can run in and fill that gap, so it would be easier to score tries if you flatten up.' That was her words, flatten up.*

(Final Focus Group)

The above example demonstrates a significant development in the coaches use of questioning and how this impacted on the children's game understanding over the duration of the study.

#### **4.3.1.2 Discussion of the coaches' ability to question in practice**

Initially asking the coaches to 'drill down the detail' in their questioning of *move forward into space* was devoid of any specific guidance on how to question or what I meant around 'drill down the detail'. Vygotsky (1978) emphasised the importance of language when mediating learning and my lack of attention to this with the vague guidance I gave initially impacted their application. On reflection, I wanted the coaches to ask more open-ended questions around moments in the game in relation to the concept, encourage the children to talk and share their understanding of *move forward into space*; drawing on Vygotskian thinking that everything in the behaviour of the child is rooted in social relations (Vygotsky, 1978). Vygotsky argued that for learning and development to be effective, then practice must "move ahead of an individual's development (Vygotsky, 1987, p212). The vagueness of Vygotsky's guidance on how to do this provides a degree of openness of how to do this in practice. Therefore, using open questions was to apply Vygotskian theory in practice in moving the children's learning ahead of their development and to share their knowledge and understanding. This provided the coaches with an idea as to where the children were in their learning, whilst promoting further learning opportunities. My lack of initial clarity around the phrase 'drill down the detail', hindered the coaches initial development of their questioning, and in turn limited the children's development of *move forward into space*. I had failed to pay enough attention to the importance of my own language and the how that mediated the coaches' learning and therefore, their ability to apply questioning in practice (Vygotsky, 2012).

Although language is discussed as a sub-theme in the following section, the use of language as a mediator of learning cannot be ignored in the development of the coaches

questioning (Jones et al, 2018). Vygotsky's emphasis on language as a mediator of learning informed my social interactions with the coaches, how I questioned the children and subsequently how the coaches questioned and interacted with the children, shaped both the coaches and the children's understanding. Vygotsky emphasised the importance of these interpersonal relations: "It is through the mediation of others, through the mediation of the adult that the child undertakes activities" (Ivic, 1989, p.429 cited in Daniels, 2006). Being careful with the interactions I had with the children to improve their game understanding, highlighted to the coaches the co-operative and collaborative approach that Vygotsky advocated towards teaching and learning (Vygotsky, 1987). Furthermore, Vygotsky stated the process of learning is initially inter-psychological in nature, as it occurs between child and adult, and latterly intra-psychological (Potrac et al, 2016). This entails the child internalising an idea or notion that they can then apply independently in addressing particular challenges or problems (Daniels, 2001).

Internalising an idea before applying it independently in different situations assumes that time is needed for this process to work, as evident in the coaches gradual improvement of their use of questioning. Similar to the suggestion by Jones, Edwards and Viotto Filho (2014), who highlighted how a soccer coach connected the abstract to the concrete through the use of cones and language, Edward shared an example in the final focus group, where he used cones in an attempt mediate the children's game understanding. As a result, one of the children demonstrated their understanding of *width* and *depth* by utilising the cones present. Therefore, when considering mediating both coach and child understanding, paying attention to the language used and giving them time to internalise ideas before expecting them to be applied in practice is a key consideration in the learning process.

#### **4.3.1.3 Use of Language**

In the first focus group, I drew on Vygotskian notions of concept formation and mediation (Vygotsky, 1978, 1987) by explicitly stating the use of language would be important in the coaches' delivery, reiterating that the first rugby concept we would be using would be *move forward into space*:

*Me: So, start thinking about precise verbal definitions and that the language that we use is so important. Although abstract in nature, we can start to think about how your formal instruction can generate*

*understanding for the children...Moving forward into space is the main premise. That is the theme. Move forward into space.*

(First Focus Group)

Despite stating the importance of using precise language and definitions, I did not elaborate as to what I meant by this, aside from stating the concept of *move forward into space*. This was not intentional, but rather an error of judgement on my behalf by not elaborating on the coaches use of language. My reference to the use of language and precise verbal definitions was brief, potentially making it difficult for the coaches to transfer it into their practice. However, despite my limited guidance during the first focus group, the coaches were reinforcing the concept of *move forward into space* to the children through their use of language:

*As they increased the challenge, some children would start to run backwards, instead of trying to evade the defenders. Both coaches actively sought those children out, got on their level and drew the information out of them, and reinforced the point of 'move forward into space'.*

(Observation of Session Week 2)

Having introduced the importance of precise language and verbal definitions to the coaches, I did not re-visit it for a few weeks due to the challenges they faced in applying GCA. I had underestimated the difficulties they would encounter in applying GCA and the changes they had to make to their coaching practice. For example, at this stage the coaches were still removing the activities out of game contexts and focusing on technique development at times, as consistent with the traditional approach (Light et al, 2015), rather than embracing GCA and focusing on developing the understanding of *move forward into space*. The use of language is an important aspect in the pedagogy of GCA and on reflection, I should have made that link explicit to the coaches and prioritised it (Light, 2013).

Towards the end of the first cycle, the coaches recognised (following some prompting by myself) that they needed to pay more attention to the precision of the language they used in instruction and questioning to promote a shared understanding as a group of coaches and between themselves and the children. The purpose of developing shared understanding between themselves as coaches was to develop consistent language and verbal definitions to enable them to move flexibly between groups, ensuring clarity of message to promote

children's learning. For example, creating a definition around the concept of support; with support defined as 'helping the ball carrier advance the ball forward into space.' This was developed as a result of open dialogue between the group of coaches and I, where the coaches shared their ideas of coaching support and discussed the children's play from the previous week. Creating precise contextual language, firstly as a group of coaches, emphasised the joint construction of knowledge and understanding that Vygotsky advocated (Vygotsky, 1987). The role of the MCO came into focus, with the critical friends acting in that role with me, before I became the MCO with the coaches, who in turn adopted that role with the children (Vygotsky, 1978). The below extract illustrates this:

*Following discussions with my critical friends, we established that there was an issue with the children's understanding of 'support'. But also, how it is taught. I introduced the structure of the session, which is still using the TGA, but emphasised the 'how' in the teaching of a 2 v 1 and how do we generate the understanding to support close to the ball carrier and to try and beat the defender first? The boys (coaches) recognised the challenges in the discussion. However, support was defined as 'helping the ball carrier advance the ball forward into space.'*

(Reflection Pre-Session Week 5)

Despite creating a definition around the concept of support, none of the coaches explicitly defined the term to the children. I did not explicitly state to the coaches that they needed to use the definition in practice, which on reflection, created the freedom of interpretation for the coaches, meaning different language was being used. This contrasted to the intended outcome of having shared language to enable the coaches to coach across all groups in cycle two, without different meanings and messages being shared with the children:

*David talked about preserving space and started to question around hitting the gaps. The children recognised they needed to get into space, but he started getting them to think about where they were on the pitch, questioning around how near the line they were and about getting close to the ball carrier... Henry started introducing language phrases. He introduced the phrase 'win the race into space,' to support the ball carrier.*

(Observation of Session Week 5)

At the end of cycle one, the coaches acknowledged the importance of language in their instruction. However, rather than emphasising the importance of shared understanding

between the coaching group, it was focused on the shared understanding between themselves and the children. They argued it was important to develop contextual language in collaboration with the children, as per Vygotsky's approach to learning and teaching. During cycle one the coaches were working with the same groups each week, therefore at this stage the variations in language could have been beneficial as the coaches were considering the differences in learning and understanding of the children:

*John: What's helpful is actually letting them come up with the language. So, ask questions and they will come out with words that they use and then you can use those words that they've come out with rather than words that they might not understand. This way they already have an understanding.*

(Mid-Point Focus Group)

Furthermore, the initial concept used in delivery had evolved from focusing on *move forward into space* to incorporate *width* and *depth*, as a result of the coaches identifying the importance of language and the need to be more specific in their messages. Incorporating *width* and *depth* was intended to align the focus of the coaches around the concept, whilst still providing the flexibility to address the learning needs of each group. Rather than define terminology as a coaching group to present to the children, the coaches now had the autonomy to co-construct meaning with the children in their own group as Vygotsky advocated (Vygotsky, 1986, 1987). However, this meant taking care with language became even more of a priority due to the increased number and complexity of the concepts. This was in terms of how I used language with the coaches and how they used it with the children:

*I emphasised that it is important that whatever they do, it is their approach that's important, including the language that they use to mediate learning, and that it is a collaboration with them as the 'more capable other' with the children.*

(Pre-Session Reflection Week 8)

As cycle two progressed, developing my relationship with the coaches helped them build on the children's knowledge and understanding through facilitating activities in game contexts, exploring the abstract through discussion, questioning and using cultural tools such as cones. Further, by drawing on the use of scientific concepts in my own thinking and introducing them in the form of precise verbal definitions, the coaches continued to define terms more

collaboratively with the children (Vygotsky, 1978; 1987). This allowed the children to share their ideas and understanding within their group:

*One of the children in the group explained what was meant by width. In his explanation he said, "width doesn't have to be wide; it can be narrow." Jake asked him, "What do you mean?" "Well it doesn't have to be on the side-line, it can be in between 2 defenders, so it is narrow width."*

(Observation of Session Week 10)

In the final focus group, language was a theme that the coaches again identified as being vital to their practice, emphasising the value of a collaborative relationship with the children to enhance their learning by valuing the importance of listening to the children and what they had to say:

*Edward: They put it into their own words as well. Maybe one or two of the pupils couldn't really articulate what we were saying as they didn't understand the words, but classmates would put it into a more simple form they then understood.*

*John: Ummmm...I think language, not just our language but their language. Getting as much from them as they're talking as well is really important. During the game, just listening to every word that they say, as that can structure what you're going to ask your questions around when you bring them in. So, you'll mention about little things that they mention, so you know what to ask them about.*

(Final Focus Group)

The above example highlights the importance of collaboration in the use of language for learning, with the coaches facilitating the children's learning by listening to what they were saying, before considering the language they then used to further develop the children's understanding.

#### **4.3.1.4 Discussion for use of language**

Learning from a Vygotskian perspective occurs in a social context and the ideas an individual learns are mediated through their social interactions and relationships with a MCO (Wertsch, 1991; Smidt, 2009; Jones et al, 2018), with language as a key mediator (Vygotsky, 1978). Despite my Vygotskian thinking and drawing the coaches' attention to the use of language in the first focus group, the use of language was not prioritised by myself or the coaches until near the end of the first cycle, as more time than anticipated was needed to assist the

coaches' in applying GCA. Here, my role as the MCO needs to be considered, as if I had been more precise with the language I used in my interactions with the coaches around their use of consistent and agreed verbal definitions and wider pedagogy, these issues may not have arisen. As a result, my ambiguity around the explicit use of precise verbal definitions seemed to influence what the coaches did and did not internalise (Jones and Ronglan, 2017; Jones and Thomas, 2015). As a coaching group we created joint definitions, however the coaches did not always apply them in practice. Although we agreed on joint definitions of some terms as a group, when it came to practice the coaches felt it best to develop a more 'local' definition with the pupils in their own groups— using the children's own language to do this. Vygotsky's approach to scientific concepts is that they are easily transferable from one context to another and are introduced in the form of precise verbal definitions (Vygotsky, 1987). Therefore, not introducing consistent terminology across all groups could potentially cause a different understanding of the rugby principles of *move forward into space, width and depth*, which could cause confusion and misunderstanding for both the coaches and children. If I had been more explicit around the use of precise verbal definitions, it may have led to the coaches recognising the importance of a shared understanding of language amongst the coaching group to enable consistency across all groups in terms of the knowledge and understanding being developed earlier in the AR cycles.

However, by not being explicit enabled the coaches' to create individualised definitions with their groups, which seemed to enhance the children's understanding. Here a consideration of Vygotsky is that learning happens initially at the group and secondly at the individual level, highlighting the importance of social relations and context as crucial to development (Jones et al, 2018). Therefore, it became apparent that the coaches were Vygotskian in their approach, by considering their social relationships with the children, whilst also contextualising the learning environment to facilitate the development of the children; just as I had done with the coaches previously.

Using the notion of scientific concepts (Vygotsky, 1978) became more prominent in how I attempted to facilitate improvement in the coaches' practice, and how they improved the children's learning during the second cycle through the use of language. Vygotsky noted that "the fundamental difference between the problem which involves everyday concepts and that which involves scientific concepts is that the child solves the latter with the teacher's



help” (Vygotsky, 1987, p.216). The scientific concepts during the second cycle had evolved to incorporate *width* and *depth*, increasing the complexity of the understanding required of the coaches and, subsequently, the children. Therefore, how the coaches’ facilitated the children’s learning would either inhibit or enhance their understanding (Vygotsky, 1987; Davydov, 1988). Incorporating the use of verbal definitions collaboratively with the children (Vygotsky, 1978; Smidt, 2009) enabled them to create terminology to assist with their understanding and gave structure to their problem solving (Karpov, 2003). This collaborative relationship was identified by the coaches as being important in the final focus group, supporting Vygotsky’s insistence on collaborative instructional practice, and the use of language to collaboratively construct shared understanding of concepts (Daniels, 2006). Working collaboratively, firstly between the coaches and I and then the coaches with the children, enabled the coaches to discuss terminology with the children and create shared understanding, thereby privileging the importance of the meaning attached to the words spoken, as opposed to the words themselves (Jones et al, 2018). Developing a shared understanding of the language used also enabled some of the children, whose knowledge and understanding were perhaps greater than their peers, to act as the MCO to them. Here, the MCO as the peer emphasised their joint construction of knowledge and understanding between them and the coaches and subsequent internalisation, allowing them to articulate their understanding to their peers. This suggests the more capable peer internalised the concepts of *move forward into space*, *width* and *depth*, allowing them to apply it independently in practice (Moll, 2014).

#### **4.3.2 How the coaches’ created a good learning environment**

##### **4.3.2.1 Applying rugby principles within the game context**

Vygotsky emphasised that it is important that scientific concepts are learnt in the context in which they are familiar with, otherwise they will be removed from everyday practice (Vygotsky, 1987). Therefore, ensuring the coaches’ contextualised the learning environment for the children was important. At the start of the study, I asked them about the context they thought rugby should be coached in:

*David: Game based scenarios.*

*Jake: Mine was all game based. Even stupid things like rugby-netball, it’s about getting people into space and passing the ball.*

*Ryan: I get games based, like rugby-netball like you say (Looks at Jake) but it's pass forward and not realistic to a game.*

(First Focus Group)

The coaches' identified GCA as the approach they should use in practice, but their discussions were brief and lacked depth. However, Ryan recognised passing the ball forward would de-contextualise the learning environment in a rugby context<sup>3</sup>, highlighting the importance of keeping it realistic to the game. Despite the acknowledgement of GCA, on reflection, I did not ask the coaches to elaborate on their experiences or how they would deliver using GCA. I presumed they would be able to apply the concept of *move forward into space* within GCA, as a result of their previous experiences. Despite feeling that the guidance and planned session content was clear, the coaches' struggled with applying GCA:

*Me: I felt the aims and objectives of the following session were clarified and that I got my point across regarding detail. In this initial phase, I think giving more structure to the coaching group will help with their development.*

(Pre- Session Reflection Week 2)

*The coaches moved away from the planned content. The coaches introduced passing to the group in isolation, which was not part of the planned activity or how they should have been coaching. They had removed it from the context of rugby.*

(Observation of Session Week 2)

I had taken for granted the coaches' ability to contextualise the learning environment and presumed that, as they played themselves and been coached using GCA, they would be able to apply the pedagogical principles. Here, my social interactions with the coaches as the MCO came into play, recognising the need for more structure to support the coaches. To provide structure, I discussed with the coaches about introducing the Tactical Games Approach (Oslin, Mitchell and Griffin, 2013). This approach follows a four- step sequence of (1) initial game, (2) question-answer session, (3) practice task, and (4) final game:

*The coaches seemed keen and understood the model as it was clear to follow. What they also identified was the fact that they wanted me to be clear/strict on timings to aid their organisation.*

(Pre-Session Reflection Week 3)

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<sup>3</sup> In rugby union and league, you can only pass the ball backwards. Therefore, passing the ball forwards would remove one of the fundamental laws of the game.

Utilising the TGA seemed to have a positive impact, allowing the coaches to expose the children to games or game like activities from the start of the session. The added structure enabled the coaches to address the children's understanding of *move forward into space*, as a result of the question and answer section contained in the TGA:

*Placing the children in a 3 v 3 or 4 v 3 game for the majority of the session, seemed to engage the children, and progress them quicker than they had in the previous weeks. Having a section for questioning seemed to help the coaches, as they could structure learning opportunities.*

(Observation of Session Week 3)

Towards the end of the first cycle, as a result of my constant social interaction with them and increased practical experience, the coaches started to think more about how they provided greater context to the activities they were coaching. All sessions were informed by the concept of *move forward into space*, with different elements of how to facilitate this being explored: *David got the attack moving forward and the defence moving back. He initially made it more challenging for the defence, but gradually made it harder for the attack* (Observation of Session Week 5). As a result of me guiding the coaches to manipulate the game elements and expose the children to different situations within the game, the children's understanding around *move forward into space* improved. The improved pedagogical approach I had scaffolded with the coaches manifested itself in the children as they shared their ideas with each other in the form of creating and developing strategies:

*In David's group, his children were engaged and talking about their approach to the game even when they were not being questioned. They were creating strategies and David could facilitate with one or two probing questions around the game. John emphasised his group were doing something similar and were able to develop attacking strategies*

(Reflection on Session Week 5)

Learning how to manipulate the game context was alluded to in the mid-point focus group, with Jake recognising that it provided the coaches with the ability to facilitate the children's learning. However, all coaches did not feel the same, with Henry acknowledging challenges when applying GCA:

*Jake: I think the TGA has enabled us to facilitate a lot more and aid development. We have been able to be flexible within our coaching to manipulate the sessions.*

*Henry: I feel that last week, sticking to the game centred approach, it didn't work for me at all.*

*Me: In what respect Henry?*

*Henry: Considering the theme, move forward into space and giving that environment and freedom to manipulate that, I felt that I gave the children too much freedom.*

(Mid- Point Focus Group)

Initially I did not respond to Henry as I wanted the focus group to naturally evolve and the discussion to flow, whilst also considering how I could best support Henry. However, I did address it later, as shown below. It was clear Henry had been reflecting on his own practice in considering how he can improve his delivery and consequently the experience of the children. This enabled him to elaborate on my supportive suggestions in my subsequent social interaction with him:

*Me: Okay, so what about developing their understanding a bit further? Have you thought maybe in a Q and A session about giving them a whiteboard? You could ask them to draw how you could beat the opposition or what you're going to do?*

*Henry: That is something that I was thinking about in previous sessions. Directing them with more tasks to do, as I feel that I wasn't really facilitating that and harnessing that energy in a more productive way. Doing stuff like using whiteboards will help narrow the focus of the children.*

(Mid- Point Focus Group)

Following challenges faced by Henry and with the concept evolving to incorporate *width* and *depth*, I suggested initial ideas to the coaches as to how they could coach aspects of *width* and *depth*, which I noted in my reflective log; *such as slowing the play down and walking it through, putting different coloured bibs on defenders or using channels* (Pre-Session Reflection Week 8). The forms of mediation in this context were; specific use of language in relation to the concepts of *move forward into space, width and depth*, use of coloured bibs to demarcate defenders to simulate space or the use of cones to split the playing area up into sections to enable the coaches to facilitate the children's understanding of *width*. The suggested applications were not prescriptive but intended to provide social assistance to the coaches in the development of their ideas and coaching. The coaching group then discussed

their own ideas in addressing *width* and *depth* before being tasked with planning their sessions independently. The coaches then started to adjust their practices to address the children's development of *width* and *depth*:

*To create space, Jake flipped the pitch to make it wide. When he flipped the pitch back to make it narrower, the children stopped just running to the outside and tried to run into the gaps between two defenders...Ryan slowed it down and started collaborating with the players on the actions that they could take when they had the ball and linking it around width, space and depth...Edward facilitated favouring the attack. Sent the defenders back, to the side, to the floor, giving them different ways to go to create different pictures to the attack... He confidently slowed the play down and helped them identify where the space was.*

(Observation of Session Week 9)

The developing practice of the coaches represented their immersion in wanting to improve their knowledge and pedagogical application, but also emphasised the importance of my use of Vygotskian notions in achieving that learning. The ideas were developed and created through collaboration between the coaches and I, between the coaches as a group, before they planned their sessions independently. The emphasis was on collaboration in the learning process through social interaction facilitated by me as the MCO and the mediation of these ideas for the coaches to internalise before they used the same ideas in practice with the children (Vygotsky, 1978). The coaches increasing focus on the context within GCA, enabled the children to repeatedly share their developing understanding of space, width and depth:

*When he (Jake) questioned the group as to why they were going between defenders one of the girls replied: "Well it makes sense, there is space in between them so you run in between it and if one of them comes near you, you pass it to the next person." When the situation occurred again and one of the girls ran a short line to score, Jake rewound the play and asked the girl to explain what she did and why it was good.*

(Observation of Session Week 9)

#### **4.3.2.2 Discussion of applying rugby principles within the game context**

This section addresses the importance of coaching within the game context, and how I used Vygotskian notions to guide the coaches in improving their pedagogy. The specific Vygotskian notions I used to develop the coaches' ability to contextualise the children's learning were

concept formation and the MCO (Vygotsky, 1978, 1987). Furthermore, this section addresses the importance of history and its impact on learning (Vygotsky, 1978; Jones et al, 2018).

The difficulties in initially applying GCA draws attention to the importance of history. Vygotsky claimed, “human behaviour and learning could only be explained through recourse to history and culture; that is, humans produce and reproduce their existence through social relations, which, in turn, are experienced in the activities they perform” (Jones et al, 2018, p.2). Despite the coaches initially stating they felt game-based scenarios embedded learning in the appropriate context, they still introduced passing in a technical drill-based environment. This suggested the interpretation of their previous experiences were not of GCA but were of simply playing games. Arguably, the coaches had not been taught about the principles and theoretical concepts of these approaches and only experienced them as players or coaches, with Vygotsky stating that an over reliance on everyday experiences causes misconceptions to develop, which supports and suggests their experiences were of the technical approach (Vygotsky, 1987). This finding is consistent with other researchers (Cassidy et al, 2009; Maclellan et al, 2018) who found that, despite game-based approaches being heavily advocated, traditional coaching methods still dominate. An inherent problem of the traditional approach is that learning is decontextualised (Potrac et al, 2000), whereas the emphasis in this study was to embed learning in its relevant context; that of GCA, informed by Vygotskian concepts. Initially, the lack of guidance provided by me to the coaches, resulted in a return to the traditional approach (Jones et al, 2018).

Introducing and discussing the TGA facilitated the coaches’ practice in terms of embedding learning in the context of games. Initially, the coaches had been drawing on their everyday understanding of GCA through their previous experiences. However, through our social interactions, acquiring knowledge of the TGA in terms of how to structure a session in relation to the concepts of *move forward into space*, *width* and *depth* and the pedagogical approaches behind it, helped transform their everyday knowledge. Consequently, the coaches’ everyday concepts around GCA became structured and conscious, whilst restructuring them to a higher level (Karpov, 2007; Vygotsky, 1987). Consistent with Vygotskian thinking, the development of this knowledge was rooted in the social relations and interactions between the coaches and the coaching group and I (Vygotsky, 2012). Vygotsky emphasised the importance of inter-personal communication and relationships in the

learning process. This was evident in this process with all knowledge development negotiated as a result of the collaborative and co-operative learning relationships developed (Vygotsky, 1987). The importance of social interaction in developing knowledge and understanding of both the rugby union principles and the application of GCA cannot be underplayed. Acquiring scientific concepts of the TGA as a result of social interaction, began to mediate the coaches' thinking and problem solving in terms of how they contextualised their practices to best develop the children's knowledge and understanding of rugby (Vygotsky, 1986; Vygotsky, 1987). Following the introduction of the TGA, the coaches' practice improved. This was illustrated by Jake's viewpoint in the mid-point focus group and observations of practice in week 9 (evidenced above), where the TGA focused their thinking in terms of contextualising the sessions within game or game like scenarios and mediated their thinking when coaching. In turn, this enabled them to develop the children's learning, rather than revert to the traditional approach as had happened at the beginning of the study.

Adopting the TGA was not a seamless transmission of knowledge between myself and the coaches, as alluded to by Henry in the mid-point focus group, with the frequent social interactions and negotiation of knowledge and understanding being evidence of that. This recognises coach development and player learning as a non-linear, social process (Evans, 2012; Jones and Thomas, 2015). As a result, when mediating coach learning, it was important to consider the intricacies of the coaches' application of the TGA, such as what they did to contextualise the game scenarios, whilst still paying attention to the interactions they had with the children. As the MCO, I provided the scaffold to the coaches to help facilitate learning through social interaction.

The scaffolding metaphor can be described as how a learner can be assisted by another and is a process of guided mediation within a socio-cultural framework (Wood et al, 1976; Engin, 2014). Although not originally a Vygotskian principle (Bruner, 1966; Wood et al, 1976) similarities can be drawn particularly in terms of pedagogical scaffolding at the micro level in terms of interactional talk (Engin, 2013; Jones and Thomas, 2015). My questioning of the coaches was evident all the way through the study, however it was a reformulation of the Henry's understanding of *width* and *depth* that required further scaffolding to continue the evolution of his rugby knowledge. Here, the need for bespoke scaffolding was evident to develop his knowledge of rugby principles and how to coach them. My scaffolding practice

used in this context was the specific use of language in relation to the concept (for example, defining space as helping the ball carrier advance the ball forward into space), the use of cones and bibs to act as cultural tools to demarcate defenders, and simulating space by splitting the playing area up into sections to enable the coaches to contextualise the learning environment. Although social interaction was underlying throughout the study, my knowledge and understanding of the concepts being coached was imperative in this example, to ensure that Henry received the required scaffold necessary for him to excel.

Discussions between the coaches and I were consistent during their delivery around what they were doing, how they were doing it and why. Furthermore, when I presented potential suggestions as to how to develop the children's understanding of *width* and *depth* to the coaches, these ideas were discussed and evolved as a result of the interaction between the coaches and I. Presenting initial ideas to a specific task was consistent with Vygotskian thinking as a form of social assistance from the MCO to the learner (Vygotsky, 1978; Moll, 1990; Daniels, 2006). The social interaction between the coaches and I around developing the game context was fluid, emphasising the collaborative relationship in the learning process and a deliberate method on my part to apply Vygotskian thinking to practice (Vygotsky, 1987). Engaging with new concepts, highlighted that the coaches engaged with ideas beyond what they would have been capable of unaided, emphasising the importance of the MCO in promoting coach learning (Jones et al, 2018). This reaffirms Vygotsky's viewpoint that the ideas and concepts an individual learns are mediated through their social interactions with a MCO (Vygotsky, 2012).

#### **4.3.2.3 Developing the coaches' ability to address children's misconceptions of rugby concepts**

Everyday concepts are the result of everyday experiences in the absence of systematic instruction; therefore, these concepts are unsystematic and often wrong (Karpov, 2014). As a result, empirical learning has the potential to create misconceptions in understanding (Davydov, 1990). Considering this perspective, developing the coaches' abilities to address the children's misconceptions in their understanding of rugby concepts was a key area to concentrate on. Despite introducing the notion of concept formation to the coaches in the first focus group, I did not explicitly ask them to address misconceptions in the children's play, rather just reinforce the concept of *move forward into space* as the focus for delivery. This



lack of direction from myself resulted in the coaches' missing many learning opportunities and allowed misconceptions to develop in the children's play:

*There were opportunities where the children stopped or ran backwards, yet this was not identified by the coaches or acted on...it is important that they begin to recognise these learning opportunities. Clearing up misconceptions is vital.*

(Reflection on Coaching Session Week 1)

After the first week, despite me planning the first session activities, the coaches needed more structure and support to promote their development of how to teach *move forward into space* and their ability to address misconceptions in the children's play. Rather than me telling them what to do, I drew on Vygotskian thinking regarding his insistence on collaboration by involving the coaches in recognising their areas for development (Vygotsky, 1987; Daniels, 2006). Privileging social interaction, I asked the coaches how they thought their first session had gone in relation to promoting the concept of *move forward in space*. Here, they recognised they had missed opportunities to develop this understanding in the children:

*Henry and Jake recognised that they had missed learning opportunities in relation to the overall objective of moving forward into space. That was the big focus for the session to correct any misconceptions.*

(Pre-Session Reflection Week 2)

As previously stated, I introduced the TGA to them before the third session which helped structure learning opportunities in the form of the question and answer session. This provided opportunities for the coaches to address the children's misconceptions without stopping the flow of the game. The coaches acknowledged the benefit of this to their practice and ability to address misconceptions:

*The coaches felt the Q and A helped develop learning and John highlighted that things came out of it that he was not expecting. After the first 5 minutes Henry, thought it was going to be a disaster; however, he said by persisting with it and reminding the children about moving forward into space, they gradually developed and the standard improved.*

(Post Session Reflection Week 3)

The question and answer session helped create opportunities for the coaches to address children's learning, however the ability to recognise and address misconceptions was

dependent on the coaches' ability to 'see' performance (Jones et al, 2018). That is to recognise potential misconceptions developing in the children's understanding and execution, but also positive aspects of performance that encouraged the children to verbalise their learning. As the concept moved from *move forward into space* to incorporate *width* and *depth* in the second cycle, there were inconsistencies in addressing the children's misconceptions and identifying learning opportunities between coaches:

*...the children improved and were passing a lot shorter, however were not moving forward into space as much. Ryan was not interjecting, so I asked him what they needed to do to improve their play instead of shipping the ball wide all the time or trying to throw long passes. He replied, "they need to come short." ...John consistently reinforced the use of width and depth in his practice, referring to the learning objectives displayed on the screen. He gave the children opportunity to play and let the game play out but would interject at appropriate times to emphasise learning and question them around their understanding.*

(Observation of Session Week 8)

The gap in some of the coaches' application of the concepts needed to be addressed in terms of their identification and understanding of how to address misconceptions, to ensure the children had the opportunity to develop their knowledge and understanding of the principles of rugby equally across groups. This once again emphasised the importance of individual support for the coaches, but also the emphasis on my ability to have an understanding of the coaches subjective ZPDs to provide personalised support. As detailed below, at times, I interjected to address the developing misconceptions, but also provide the children with the opportunity to share their understanding. Along with promoting learning in the children, the intention was to provide social assistance to Ryan in terms of illustrating an initial method as to how to address misconceptions. He demonstrated that he had an understanding of the misconception in the children's play (identified above), therefore it was his ability to address it that needed support. As a result of these interactions with Ryan, he later demonstrated his ability to engage with the social assistance provided, which manifested in his improved application of addressing the children's misconceptions the following week:

*One of the girls put a 6-7m pass across to her teammate who was opposite a defender, however they had a support player in between, but too deep. I froze the game and asked the support player how she could get the ball. She replied, "Get closer." So, she moved closer. I*

*then asked her what was in front of her and all the girls replied with "space.". As the play progressed, they started attacking more and throwing shorter passes.*

(Reflection on Session Week 8)

*During the middle part of the session, he (Ryan) slowed it down and spoke with the players on the actions that they could take when they had the ball, linking it around width, space and depth. He drew on their opinions to involve them in the process.*

(Observation of Session Week 9)

At the conclusion of the study the coaches' shared the increased confidence in their coaching, identifying their knowledge and understanding of rugby and that their coaching had improved. Despite not explicitly stating their ability to address misconceptions had improved, their confidence in how they talked around their development alluded to an improved ability to confidently interject within sessions, demonstrating an increase in their own criticality. Furthermore, they emphasised the importance of the relationship between them and I in moving their practice forward:

*Edward: The way that you've addressed us, taught us things as we have been on the go, has meant that I have been able to change sessions to address the children's learning.*

*John: I'm becoming more critical about what people are saying about certain things. I am becoming more critical of what I am seeing and what I am hearing, which enables me to address the children's play.*

(Final Focus Group)

#### **4.3.2.4 Discussion of developing the coaches' ability to address the children's misconceptions of rugby concepts**

This section addresses the coaches' improved ability to address misconceptions in the children's play and how I used Vygotskian notions to help guide them to achieve this. The specific Vygotskian notions applied were concept formation and identifying the coaches' subjective ZPD and their ability to imitate (Vygotsky, 1978, 1987; Chaiklin, 2003).

For formation of scientific concepts, instruction must be planned to foster conscious awareness of conceptual form and structure, thereby allowing an individual access and control over acquired scientific concepts (Vygotsky, 1987; Daniels, 2006). Furthermore, it must enable interaction and development of everyday concepts with scientific concepts

(Daniels, 2004). Nurturing the coaches everyday understanding of what they perceived as the children's misconceptions in rugby in relation to the scientific concept development of *move forward into space, width and depth*, was important for them to be able to access this knowledge individually and in turn develop the children's play. Facilitating the coaches' ability to 'see performance' emphasised the importance of the MCO, both myself to the coaches and the coaches to the children (Vygotsky, 1978). Rather than being dictatorial in nature, the co-operative relationship I had developed with the coaches was intended to liberate their practice and provide a supportive structure to enable them to develop their coaching practice over the course of the study (Vygotsky, 1978). The improved application of the coaches' addressing misconceptions and accessing control over scientific concepts was demonstrated by Ryan in his practice from week eight to week nine (as evidenced earlier); where he had the ability to not only 'see' the children's performance more clearly, but also understand how to address their learning within that.

The differences in the coaches' ability to address the children's misconceptions in their play, emphasised the importance of identifying the individuals subjective ZPD to provide an insight into what individual support was needed to aid development (Chaiklin, 2003). A person's ability to imitate according to Vygotsky is the basis of a subjective ZPD (Vygotsky, 1997). Vygotsky's view was that imitation is not a mindless copying of actions but refers to "all kinds of activity of a certain type carried out by the child...in cooperation with adults or with another child" (Vygotsky, 1998, p.202). In this context, John could confidently address the children's misconceptions, demonstrated by his ability to coach competently and confidently on a weekly basis, as highlighted in week eight's observation. He was able to engage with support from myself as the MCO in terms of how to address the children's misconceptions and knowledge of the rugby concepts. As a result, he needed less support and guidance when applying the concepts of *move forward into space, width and depth* and addressing the children's misconceptions within that, assuming a greater ability to imitate (Vygotsky, 1997, 1998).

Considering Ryan's changing practice, he understood the misconceptions in the children's play as a result of his knowledge and understanding of *move forward into space, width and depth*. His lack of ability to address the children's misconceptions meant more support was needed to enable him to apply his knowledge and understanding. As such, a

greater consideration of the individual needs of the coaches was required by me as the MCO (Vygotsky, 1987). Although Vygotsky did not provide any systematic principles or methods that define the social assistance required, I assisted Ryan by questioning one of the children who he identified as developing misconceptions in their play, to provide an example that Ryan and I could discuss and then imitate. As a result, he was able to act on the social assistance and apply this in his own practice the following week (Vygotsky, 1987). It was the consideration of the specific social assistance and the time required for Ryan to internalise the ideas that was needed to improve his practice. This idea is echoed by Jones et al (2018), who suggest “a carefully constructed idea which the learner can only initially imitate but, with further time and assistance, develops into understanding and ultimate internalisation” (p.2). Therefore, a greater consideration at the start of the project of the social assistance needed for each individual coach to flourish, along with time required to internalise new ideas may have resulted in all coaches showing an even greater ability to address children’s misconceptions.

## **Chapter Five: Conclusion**

### **5.1 Introduction**

In this chapter I aim to summarise my findings, whilst drawing appropriate and thoughtful conclusions from them. I will identify the unique contribution to knowledge that this study makes and the implications for coach education and coaching practice. In the introduction chapter, I attempted to contextualise the focus of the study by arguing against the traditional approach to coaching (Cassidy et al, 2009; Maclellan et al, 2018) and advocating GCA (Potrac et al, 2000; Bunker and Thorpe, 1982; Den Duyn, 1997; Mitchell et al, 2006). Furthermore, I made a case for using Vygotskian theory to underpin coach development and the pedagogical application of GCA. This research attempts to build on Jones et al's (2018) call for action in applying Vygotskian concepts to sports coaching and coach education by adding empirical evidence to Vygotskian theory, something that is currently lacking.

In terms of structure, after I have re-stated the aim and objectives of the study, a summary of the key findings and implications for practice will be presented, before outlining some limitations. Some potential directions for future research will then be identified before finally addressing how this study has influenced my own personal and professional development.

### **5.2 Aim and Objectives**

The aim of this study was to show how I, a coach educator, used Vygotskian notions to improve rugby union coaches' conceptual understanding of game principles and how to apply them in their own coaching practice. The aim was addressed through three interrelated objectives:

1. To utilise the notion of Vygotsky's concept formation, as a coach educator, to develop coaches' conceptual understanding about the key principles of rugby union.
2. To assist coaches' to develop their pedagogical ability to apply their conceptual understanding of rugby principles within a game-based coaching approach.

3. To analyse and interpret the coaching issues (dilemmas) experienced by myself and the coaches and how they were dealt with through recourse to Vygotskian notions.

### **5.3 Summary of findings and implications for practice**

As previously acknowledged, the current research on applying Vygotskian thinking to sports coaching is sparse (Jones et al, 2018). Therefore, the findings from this study present original empirical evidence for coaches regarding the applicability of Vygotskian concepts and how they can inform coach education and coaching. The results suggest that the Vygotskian notions can be used to help coach educators understand how to develop coaches' (and subsequently players) knowledge and understanding of the principles of the game, in this case rugby union and how to improve their pedagogical ability to apply these principles through GCA. I will now attempt to separate the findings in terms of some of Vygotsky's fundamental ideas and concepts.

Vygotsky emphasised the collaborative and co-operative approach to learning (Vygotsky, 1987), with this relationship underpinning and facilitating all findings. Rather than being a quick or finite process, coach learning was an evolving process that changed on a weekly basis, drawing significant attention to my role as the MCO in facilitating that (Vygotsky, 1978). As the coaches' practice evolved, they started to take more responsibility for their learning and the content they delivered. At the beginning my role was about providing direction and stability for the coaches, yet as their confidence and knowledge developed, it was more about facilitating their individual learning pathways by guiding and questioning them for understanding. By applying Vygotskian notions, I came to realise that the coaches' knowledge of the game and their pedagogical ability to apply this in practice was a constantly evolving process, and that the collaborative and co-operative relationship between me as the coach educator and coaches was an essential part of this social learning process.

The priority and suggestion for coach education, is to have an appreciation for, and an awareness of, the non-linear, socially situated messiness of coach learning, whilst redefining the role of the coach educator as the MCO to allow for learning to be facilitated. Therefore, providers need to consider different approaches to address this in their provision. Applying a

Vygotskian approach to coach education would privilege providing time to the coaches to internalise ideas before they apply them independently to address particular problems and challenges in their own coaching practice (Daniels, 2001). Vygotsky does not prescribe how long it takes to internalise ideas, therefore providing flexibility to the coaches to access social assistance from coach educators needs to be considered. This would potentially facilitate the coaches' learning, rather than the didactic coaching workshops that still dominate coach education. Utilising coach mentors post workshop delivery to provide support to coaches who are trying to change and transform their practice over a prolonged period of time could be a way to address these issues.

Previous research has highlighted difficulties in the mentee-mentor relationship (Jones and Allison, 2014), inconsistencies and a lack of understanding from coach educators in terms of content delivered (Reid and Harvey, 2014), therefore a reconceptualisation of this role should be considered through the lens of the MCO and who the MCO is (Vygotsky, 1978). A shared understanding of key concepts to be developed between coach educators within the same organisation, would ensure that the MCOs have the relevant knowledge and understanding of key concepts to be delivered, which is imperative to ensure clarity and consistency in coach education. With this shared understanding between coach educators, they can then access the relevant knowledge of concepts and pedagogy to support a broad spectrum of coaches. Having the relevant knowledge of the key principles of the game and a clear understanding of Vygotskian notions and their impact on learning, would allow coach educators to evolve the co-operative and collaborative relationships with the coaches and provide them with the best possible support.

The importance of language and the role of questioning emerged as a key area in developing the coaches' knowledge and understanding of the principles of the game and their application in practice. My use of language when questioning the coaches was carefully considered to facilitate their internalisation of knowledge so that they could 'make sense' of their experiences and have useable knowledge to apply in practice (Vygotsky, 1997). What became apparent was that internalising ideas was not an immediate occurrence. The coaches needed time to develop their knowledge and understanding, along with how to apply that knowledge when coaching. Further, my understanding of this Vygotskian notion meant that I did not get too frustrated with this process and saw it as a necessary stage in the coaches'



learning. The AR approach facilitated the opportunity for the coaches to draw on their practical experiences and apply feedback of their coaching in the following sessions. Allowing time to internalise ideas and thinking enabled the coaches to demonstrate significant improvement in their ability to apply quality questioning to their practice. This manifested in the children's ability to develop and articulate their knowledge and understanding of rugby; as the coaches' improved their practice, so the children's learning developed.

The recommendation for practice here is for coach educators to carefully consider the language used to mediate coach learning whilst also providing time for the learners to internalise new knowledge before it can be applied in practice. Drawing on Vygotskian thinking, coach educators need to initially provide opportunities for interaction with the coaches to promote learning and thinking, before providing time to internalise their ideas. Providing pre-course material in the form of literature or video conferencing with the coaches could create the time to enable coaches to begin to internalise their thinking and ideas before being able to engage with the ideas independently. Within these interactions the specific language used needs to be carefully thought through and scrutinised. Coach educators need to carefully consider the messages they want to portray to coaches they are engaged with as this will influence what the coaches' internalise and how they use the language to shape their thinking.

Developing a shared understanding of contextual language between the coaching group, and subsequently between the children, arose as an important finding. Here, when defining terminology, which was a deliberate application of Vygotsky's approach to introducing scientific concepts in the form of precise verbal definitions (Vygotsky, 1978), working collaboratively within those micro groups was a key factor. Although initially I thought all coaches and children should use the same terminology defined collaboratively between the coaches and I, what emerged was the importance of having the children share their own interpretations and developing contextual language to have more of a 'local' definition. Drawing on the children's knowledge to co-create terminology and meaning of the abstract concepts of *move forward into space*, *width* and *depth*, enabled those children that had a greater understanding than their peers, to act as a MCO and articulate their understanding in a more accessible way for their peers. A peer acting as the MCO was an important finding and one for coach educators to promote with the coaches. This approach

privileges the co-operative and collaborative relationship between the coach and athlete to facilitate player learning, contrasting the dominant discourse in sports coaching of it being a non-problematic process that relies on high levels of direct instruction from the coach (Jones, 2006; Kidman, 2001, 2005).

In terms of coach education, educating coaches on how to reposition their role from the traditional dictatorial persona to engage athletes to be more involved in their own learning is an important implication. Engaging athletes in discussion has to form a key element in a coaches' pedagogical approach to promote athlete learning. This provides the coach with an opportunity to generate an idea from the athletes understanding, better enabling the coach to guide the next part of their learning. Without an understanding of the athlete's knowledge and understanding a coach cannot best promote athlete learning and development, therefore not fulfilling the primary role of a coach. This builds on and applies Vygotskian ideas around the acquisition of scientific concepts, as it builds on the learners everyday understanding of a concept before restructuring it with theoretical knowledge to mediate their problem-solving ability (Vygotksy, 1987). Encouraging athletes to share their knowledge and understanding with both the coach and fellow athletes can help mediate other athletes learning and promote that shared understanding of concepts that is particularly vital to team sports. This will enable contextual language to be co-constructed between the coach, athlete and between athletes which will help facilitate a shared understanding of key concepts such as the team's strategy and tactics (Gréhaigne and Godbout, 2005).

An individualised approach to coach development is an important finding from the study and a challenging concept for coach education. All the coaches needed support in different areas, meaning the interactions I had with each coach varied. Therefore, paying attention to the coaches' subjective ZPD, in relation to the objective (Chaiklin, 2003). Developing an understanding of their historical experiences helped facilitate this. Having an everyday understanding of their knowledge and experiences in relation to rugby union provided a starting point to develop their conceptual understanding of the game and consequently the acquisition of scientific concepts (Vygotksy, 1978). Here the message for coach education is clear, a 'one size fits all approach' to developing coaches and player knowledge and understanding does not work. Coach education providers need to facilitate

opportunities to enable coaches to share ideas and previous experiences before taught content begins. Generating an initial understanding of their past experiences would provide coach educators with an idea of coaches' current knowledge and working context, which would allow them to navigate coach development from a more informed position, something coach education has historically struggled to do (Jones and Allison, 2014). Heeding Vygotsky's thinking in the acquisition of scientific concepts, that learning needs be embedded in its relevant context otherwise it becomes dis-embedded from practice (Vygotsky, 1978) can help develop coach education. Typically, on coach education courses, coaches are asked to participate in the physical activity coached by the coach developers and are then assessed in their ability to deliver to other coaches. Coaches are assessed away from their relevant context, which ignores the messy realities of practice (Jones et al, 2012). Providing coaches, the opportunity to develop their practice in a more natural and context specific environment is a recommendation and key finding to move coach education forward.

Consistent with the literature that it takes time to successfully deliver GCA (Light, 2013), the coaches initially faced challenges in applying this approach in terms of its structure and organisation. Introducing the TGA (Mitchell et al, 2013) scaffolded the coaches' practice. It supported the coaches in helping them transform their knowledge of GCA and mediated their thinking in light of their new understanding of the TGA that, in turn, enhanced the children's understanding. The TGA structured learning opportunities to enable the coaches to address misconceptions. Learning was embedded within a relevant context (Vygotsky, 1978, 1987), whilst drawing attention to the importance of social interaction (Vygotsky, 1978). The coaches' demonstrated improved knowledge and understanding of the principles of rugby and their ability to apply GCA. This improved their ability to address the children's misconceptions and manipulate the context, thereby facilitating the acquisition of scientific concepts, in both themselves and the children (Vygotsky, 1978, 1987). Here, the finding is clear; when developing coaches' practice, marrying up their knowledge and understanding of the game with how to apply that in pedagogical terms is necessary to improve coaching practice. Knowledge of the game is, therefore, not enough to coach effectively. Pedagogical application is also crucial to good coaching. What needs to be outlined here is the importance of social interaction in coach development, and that social relations need to be at the heart of developing knowledge, understanding and pedagogy (Vygotsky, 2012).

Coach developers need to facilitate opportunities to interact with coaches on an individual and group basis, both as coaches are delivering, and away from the practical setting. Providing instantaneous feedback on actions and developing a conversation around these, enables coaches to adjust and address their practice in the moment. This would immediately allow coaches to improve practice rather than miss out on a potential learning opportunity. Providing opportunities for coaches to interact with coach educators away from sessions could help promote discussion and generation of new ideas. This would provide time for coaches to internalise new concepts, rather than seeing coach education courses as just an assessment and opportunity to achieve certification. A reconceptualising of coach education needs to be considered, focusing on the development process of the coach that privileges social interaction with a MCO.

#### **5.4 Limitations of the study**

As with all research, there were limitations. The lack of engagement from the coaches in terms of writing their own reflective logs could be viewed as a limitation. This would have captured richer data on a weekly basis and could have articulated their learnings from an individual perspective, as opposed to the focus group setting where they were asked to share ideas. However, given the already time-consuming demands placed on the coaches, who were all full-time undergraduate students and their expressed concerns at being able to complete the reflective logs in a timely fashion, it was deemed unethical to ask them to persist with this data generation. Further, their thoughts were already being captured in the regular meetings and focus groups, so there was an element of repetition in this data source.

The lack of applied Vygotskian research in the field of sports coaching meant that the study relied heavily on my interpretation of Vygotskian concepts to coach education. Although drawing heavily from the theoretical work of Jones et al (2018) in developing my ideas, how I interpreted Vygotsky's theory inevitably influenced the study. In an attempt to address this issue, I met weekly with my supervisory team (both well versed in Vygotskian theory) who acted as critical friends to discuss progress and draw on their interpretations, whilst also returning frequently to some of Vygotsky's key translated works (Vygotsky, 1978, 1986, 1987). Although I acknowledge the interpretive nature of this research in applying the concepts to coach education, the support and intersubjective agreements with my critical

friends were there to ensure I acted collaboratively in terms of my application of the Vygotskian notions.

Although the design of the AR project produced rich data and facilitated coach development, it was highly intensive for both the coaches and I, which is an important consideration for future research of this nature. There was a significant demand on myself to write reflections and observations in a timely manner, which required writing approximately 3000 words a week to try and capture the richness of data I was seeking. From a coaches' perspective they needed to commit time across two days to ensure content was planned and delivered, whilst also participating in group reflections after each session. The implications of these challenges for replicating the study design, or researching over a longer period of time, are that alternative ways of gathering data should be considered to ease the demands on all participants in sports coaching contexts.

Even though the length of the project was sufficient to ensure rigour, a longer study would have provided the opportunity to explore some of the findings in greater depth. In terms of the coaches' knowledge and understanding of the principles of rugby and their pedagogical application, a longer support programme could have further developed their ability to internalise new ideas. Additionally, as the coach educator, even though I personalised the support provided to the coaches, a longer period of time could have enabled me to create even more of a bespoke educational programme for each of them.

Over the course of the study there were numerous practical issues that had to be overcome to ensure the successful running of the project. Despite block booking an indoor facility for the duration of the study, there were double bookings of facilities, incorrect equipment being supplied, and complaints fielded about the noise volume of the children. This took up a lot of my time leading up to and following each session. Therefore, we moved to a different sports hall to have the facility to ourselves so that the noise was no longer an issue and I sourced appropriate equipment independently. To ensure there was not a repeat of the earlier issues I also met with the Facilities Manager on the morning of each session to eliminate any potential logistical issues.

## **5.5 Recommendations for future research**

The findings from this research open up a number of opportunities for future research. Despite research confirming that interactive experiences within practical coaching contexts are the principal source of knowledge development (Nelson and Cushion, 2006; Chesterfield et al, 2010), coach education continues to be taught on traditional didactic lines (Maclellan et al, 2018). Therefore, research into coach education programmes that address coach development over a prolonged period of time, allowing coaches to internalise ideas and apply them in practice could be developed further. Previous research identified some of the limitations of the coach educators within these programmes (Jones and Allison, 2014; Reid and Harvey, 2014), therefore, exploring the history of the coach educator in terms of their CPD as an educator and ability to develop coaches could be explored. The values and history of the educator needs to be considered in terms of their own philosophical standpoint of how knowledge is constructed and developed. Having an awareness of not only the social and cultural issues that influence practice, but also an acknowledgement of wider influences such as history that could impact an individual's perspective and interpretation (Vygotsky, 1978), are important aspects to consider for future research into coach education.

## **5.6 My reflection on the process**

Undertaking this study as the final part of my Doctorate in Sports Coaching has proved incredibly challenging, and unrivalled by anything that I have done in terms of both personal and professional development. Deciding to enrol as one of the first cohort of students on the Taught Doctorate in Sports Coaching was not a decision that I took lightly. As I made the decision, I was based in Brisbane, Australia developing both my career and experiencing everything the country had to offer. However, deciding to come back after six months to start the course in September 2016 is the best decision I ever made. Over the last four years I have entered into a career in higher education, firstly at Cardiff Metropolitan before moving to the University of Worcester to lead Primary Physical Education. I have taken the opportunity to network and develop as a coach, whilst personally getting married, buying a house and becoming a full-time father to two girls. All of the above have provided different challenges at different points but have all been beneficial to my personal development.

The earlier recommendations for practice are ones that have actively developed in my own role as coach, coach educator and teacher trainer over the last four years. At the time of writing, I am a joint head coach at a semi-professional rugby union club in England, and Vygotskian notions and implications for practice actively inform our collaborative approach as a coaching team. Further, networking and conversing with other coaches has reaffirmed my ideas and thinking with an emphasis on language, importance of embedding learning in relevant contexts and considering the evolving nature of relationships all being prominent themes. Vygotsky (1978) emphasises that all learning is rooted in social relations and this is something that I cannot deny. An underlying theme throughout the learning in this thesis, is the role of people, relationships and social interaction. Throughout, I have tried to capture the importance of this social interaction in learning. Whilst I feel a great sense of achievement in completing my Doctoral thesis, it is the thousands of social learning interactions that I have had, that I will remember, cherish and continue to nurture most, as I further develop my own learning journey and attempt to mediate the learning of others.

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## Appendices

### **Appendix 1: Data Analysis Definitions**

The below tables detail the key definitions that evolved as a result of data analysis. In related to the aim and objectives, two higher order themes, four lower order themes and 8 sub themes were generated. The first higher order theme looks at the coaches developing conceptual understanding of rugby and how I aided in their development. The second higher order theme address the coach's pedagogical application of Game-Centred Approaches. The dilemmas that the coaches and I faced are addressed within both higher order themes.

#### ***First Higher Order Theme: Developing the coaches conceptual understanding of rugby***

Sub Themes	Definition
Move forward into space	This was the overall concept that the coaches used in their sessions. All the coaching that they undertook focused around this concept. As the project evolved, the concept included width, space and depth, under the umbrella of move forward into space.

*Lower Order Theme: What concepts were developed*

Sub Themes	Definition
Questioning	This refers to how I used questioning to help the coaches develop their conceptual understanding of rugby.
Collaboration	This refers to how the collaborative relationship developed between the coaches and I to develop their conceptual understanding of rugby.
Differentiation	This refers to how I had to differentiate my support to each individual coach in developing their conceptual understanding of rugby.

*Lower Order Theme: How were the concepts developed?*

**Second Higher Order Theme: Improving the coach's pedagogical application of Game Centred Approaches**

*Lower Order Theme: Social Interaction- How did I improve the Social Interaction.*

Sub Themes	Definition
Questioning	This refers to what I did to help develop the coaches use of questioning and then what they did as a result in practice.
Language	This refers to what I did to help the coaches focus on their use of language and then what they did as a result in practice.

*Lower Order Theme: How to create a good learning environment?*

Sub Themes	Definition
Addressing Rugby Principles within the Game Context	This refers to what I did to help the coaches understand and develop an appropriate learning context and then what they did as a result in practice.
Developing the coaches' ability to address the children's misconceptions	This refers to what I did to help the coaches understand the importance of addressing misconceptions in the children's learning, and then what they did as a result in practice.



## **Appendix 2: Example Reflection**

The first session arrived today, and I was very excited, as were the boys I felt. However, the ambiguity of social situations played out at the start of the day. The facilities department told me that there was not a booking, even though it had been approved. Therefore, I had to spend time in the morning meeting with the facilities manager to solve the issue. One job down.

The coaches had organised themselves when they were meeting beforehand, plan was sent to me this morning and they all seemed eager to go. As part of the process, I am assisting the school escort the children onto campus. As I arrived at the school, I had an email to ask me to call the facilities manager. I called her and she said that the archer's arena was unavailable due to other use. I explained that we were at the school, this is our booking and we needed to ensure the space was there for us as we were bringing children onto campus and could not disappoint them etc. One of the lecturers volunteered to come off the court (even though it was our space in the first place) enabling the session to take place and for the boys to set up. All sorted, I went into school and met the children. A few keen boys started speaking to me immediately and asked if I was the 'rugby guy'? They seemed very keen to engage. I had a brief conversation with the children's teacher before coming up to campus and she identified quite a few children who were not as enthusiastic.

As I walked into the Archers Arena, the court was set up with the activities ready and the boys greeted the children with a smile. I sat the children down and explained to them that they would be experiencing rugby activities for 10 weeks. The six coaches introduced themselves to the children. Then I split the children into two groups. The class teacher had given me a list with four groups on which enabled the facilitation of this process and enable a smooth transition into activities.

The focus of the session and the overall project is to build on the child's everyday knowledge of rugby and focus on the concept of 'moving forward into space'. This was the overall aim that was negotiated in the first focus group. Aside from the overall aim, the coaches decided on the aims as:

- To ensure mass participation and for everybody to feel included
- To make it enjoyable
- To build on their everyday knowledge

Ensuring that they find the sessions enjoyable is vital to the children's learning, as if they enjoy themselves, they will be more motivated to learn. This is in line with Vygotskian thinking. They wanted to understand the history of the players, their experience of rugby and how they find sport etc. Again, links to Vygotsky and is very important in moving practice forward.

As the groups split, the respective coaches of the two groups used one of the lines on the floor to show the children where to sit. Group 1 were David and Jake, with Group 2 were Henry and Ryan. This was pleasing to see as it showed organisation and structure to the children. Both groups did exactly the same activities (Jailbreak: balls in the middle, one member if your team runs into the middle and gets a ball and brings it back and the next person goes until all the balls have gone, then you can go and steal balls from others) , however their approaches were very different. The activity was to get the children running and finding space, as they had to evade each other, but also get used to having the ball in two hands.

Group 1 sat the children down, explained what they were doing briefly, then numbered the children and got them on their corners ready to play. Once on their corners, they re-explained and walked through a demonstration before starting their activity of 'Jailbreak'. During the activity, Jon was going around the groups and 'scooping' up any children who did not grasp the activity at first, asking them what they did not understand and would clear up any misconceptions around expectations. The children seemed to enjoy the game. The coaches got the children to play the game twice, with the second time being lively once the children had got used to it. The coaches encouraged and praised the children when they had done something positive and kept the praise high throughout.

Group 2 sat their group down, however, they did things a bit differently. Firstly, they asked the children their names, who played rugby and what they thought it was. They then explained the game that they were doing but asked the children what skills they needed during the game. Through asking questions such as "What do we need to do to get a ball?" and "How do we avoid others?" The coaches got the children thinking about they needed to do, rather than just going straight out into playing. One of the children said that they needed to dodge and run fast to get the ball. Following of from that response, Ryan said, "Yes, that is right. Another word for dodge is evade. What do we mean by evade?" The children did not really come forward with an answer, so Ryan explained to them that it meant 'avoiding people

when running'. This group tried to understand where their group had come from, but also introduce language to them that they might hear moving forward. They gave the children the freedom to split into micro groups, which took them a bit longer than the coaches anticipated. Moving forward, they need to ensure that they give more structure to their group.

During the game, Ryan and Henry varied their position well, standing back and letting them play, but also interacting with the children making sure they understood and were enjoying it. The little interactions I feel are important for the coaches to build a rapport with the students. I will continue to encourage these moving forward. A child is more likely to question the coaches if there has been a positive relationship built.

Once the group has played the first game twice, they moved onto playing a version of Bulldog. Players running to get from one side of the court to the other were carrying a rugby ball. Both groups used lines and cones to get effect. For example, identifying specific lines that they had to stay in, and defenders could not get them until they had crossed the line. Using the lines and cones effectively was pleasing regarding organisation.

During this activity, the four coaches all homed in on the players moving forward into space. If a player was stood still, you could repeatedly hear the coaches' say, "move forward". David started asking the players, why they ran to a certain position. This was to draw information out of them but was also good to see him trying to engage and collaborate with the children. Again, group 2 did it slightly differently. They grouped their defenders in a big bunch allowing more space for the attackers to run into. I liked this as it gave the children a high success rate and were confident enough to move forward and run into space, because there were lots of it. As the game progressed, they spread the defenders out making it more challenging to find space. The success rate dropped considerably, so they changed it to having the defenders turn their backs initially. This was brilliant to see as they were manipulating the environment to encourage the children to run into space.

During both the game in both groups, there were learning opportunities missed around questioning the children about why they decided to run where they did, why they ran backwards etc. Moving forwards, I will be looking for the coaches to identify those learning opportunities to build on their knowledge.

Groups 1 and 2 then moved on to a 1 v 1 activity. They split the group again, so the children were split into four groups of six or seven. This enabled maximum activity time, but also the opportunity for the children to have many opportunities to participate. The activity was focused purely on moving forward into space. During the activity, all coaches missed opportunities to build on the children's learning around the main concept. There were opportunities where the children stopped or ran backwards, yet this was not identified by the coaches or acted on. Moving forward into space is the whole premise of rugby so it is important that they begin to recognise these learning opportunities. Clearing up misconceptions is vital for the development of scientific concepts. I will look to that for them to focus on that moving forward.

At the end of the session, both groups concluded and asked for feedback and asked questions around what the children had learned. Furthermore, the coaches reiterated that the game was about 'moving forward into space', but also re-emphasised key words in the context such as evade. Getting the children's motivation and willingness to return was a primary aim of the coaches and one that they achieved wholeheartedly. The children were shouting about how much they enjoyed it, talking about moments in their games and asking the coaches about their rugby. The children all seemed very motivated and enthusiastic about the next session.

The first session was about motivating the players and getting a baseline idea as to where the coaches were in relation to their coaching. Moving forward, I will be focusing on the coaches identifying good play around move forward, drawing the information out of the players and addressing misconceptions.

### **Appendix 3: Example Observation**

The focus for the coaches this week was around moving the children's learning forward and not missing any learning opportunities. Engaging with the element of Vygotsky's work around addressing misconceptions and the use of precise verbal definitions. For the ease of reflecting, I have split the observations into the two groups.

#### **Group 1 (Ryan and John)**

Once the coaches had the children, they sat them down in a semi-circle around them. They asked questions around their prior learning from last week. They questioned effectively and drew information out from the children, but also correcting and manipulating answers to draw the maximum knowledge from the group.

**Bulldog:** during the game of bulldog, the two coaches manipulated the defence to favour the attack to ensure a high success rate. The overall concept they are working on is 'move forward into space' and the environment that was created favoured that. It helped support the aim. As they increased the challenge, some children would start to run backwards, instead of trying to evade the defenders. Both coaches actively sort those children out, got on their level and drew the information out of them, but also reinforced the point of move forward and what are we looking for. This was good engagement and emphasised the use of language and the importance of how it can mediate learning.

**Introduction of passing backwards/ 2 v 1:** As the session developed, the players moved away from the planned content. I just wanted them to add a slight increase in challenge, without going too far. The coaches introduced passing to the group in isolation, which was not part of the planned activity or how they should have been coaching. They had removed it from the context of rugby, put it out of a game, but were not clear with their language in instruction. The children struggled to grasp the idea of the technique of passing or passing backwards. The coaches were not detailed enough in their explanation. Even though they have good rugby knowledge themselves, they did not home in on any detail for the children to 'hang their hat on'. Therefore, initially the activity was very stagnant and had a low execution rate, in essence the task was far too challenging for their ability.

However, the coaches recognised this and scaffolded the learning environment accordingly. They brought the players in, changed the activity, demonstrated and explained in detail to the children what they were going to do. In addition, John went around, questioned the children, and checked for understanding. This was better to see as they were

beginning to realise that there was not much learning-taking place due to the task being too hard.

During the 2 v 1 practice, the coaches noticed some learning opportunities to establish learning and get the children to verbalise what they did well or perhaps what they could have changed. They missed some of the opportunities, however I stepped in on these occasions and took this role on and explained to the coaches why I was doing it. As the 2 v1 game progressed, the coaches manipulated the playing space to make it more challenging. They had recognised that the attack had it easy so altered accordingly. This was good to see that the coaches recognised that their needed to be added challenge.

Moving forward, the coaches will focus on putting it in the context of the rugby and ensuring that it is game based throughout. In addition, the group sizes will be halved to ensure greater activity time. This will challenge them with their use of tools and how they control and manipulate the environment. In addition, they will look at to continue to correct misconceptions.

Group 2 (David and Edward)

Group 2 started very similarly to the other group by asking their group what they could remember from the previous week. Both coaches ensured that everybody could hear the points being made ensuring that everyone had received the information. As the children were discussing last week, the coaches went around the children to draw information out of them, which was pleasing to see.

Passing activity: the coaches introduced passing to the children. They got the children running around, 1 ball between two, passing to each other as they avoided others. They kept it in the context of the game by having other people around, which would perhaps simulate defenders. However, what was pleasing that when the coaches questioned the children, they focused on them evading people and finding space, rather than the technicality of passing the ball. They also reinforced key points around finding space, building on their prior knowledge.

Bulldog: Children played bulldog. The defence was manipulated in different ways to create different challenges and opportunities to the attack. This was to build on the idea of moving forward into space and trying to avoid the defenders. During this, the coaches missed one on one opportunities to build on learning and what they have done. This would have been a good opportunity to see how language can help learning and address that instant learning opportunity. However, when the coaches did bring the players in, they were very clear in what

they were saying, asking how they move forward into space, what do they look for etc. For them to push forward, they need to begin to define specific things such as 'evasion'.

2 v 1 activity: The 2 coaches kept a large group together, which was detrimental to the activity, but also keeping the children active and motivated. The activity was too complex for the children, but the coaches changed it as they progressed by using cones to help scaffold and help the children. This had a positive impact as they were starting to become more successful. Throughout the activity they were very precise with their instructions and made it very clear to the children, however it was probably the activity, which was too difficult for their level.

Plenary: The children could verbally explain quite clearly what they had done or how they were supposed to do something. The children showed understanding, but the coaches recognised that it was the how. Moving forward, they need to focus on the game- based pedagogy and how they can get them to apply that understanding in practice.

## Appendix 4- Action Research Week by Week Procedures

### Cycle 1

#### Week 1

The first week consisted of a focus group with the coaches to collect baseline data around their knowledge of rugby union and how they thought rugby should be coached, where they shared some of their experiences. Although the coaches were not being asked as part of the project to develop their knowledge and understanding of Vygotsky, I introduced theoretical knowledge on concept formation by presenting key ideas around concept formation through a PowerPoint presentation. Related to the aim of the study, I wanted the coaches to have an awareness of the position I was coming from in the role of coach educator; before discussing how concept formation relates to rugby union, the coaching environment and how it could inform coaching practice.

I established with the coaches that *move forward into space* was the initial concept that they would use to facilitate learning in the coaching sessions by building on the children's everyday knowledge and understanding of rugby. This concept was informed with literature by Thorpe and Bunker (1986), Light (2013), Vygotsky (1978), but also my experiences, understanding and coaching of rugby union. To develop the coaches' understanding of everyday knowledge of rugby, I asked them to draw on their own experiences of rugby union and how they developed their knowledge of the sport. Following this, we discussed what constituted everyday knowledge (playing in unstructured environments without instruction) and scientific knowledge or concepts (knowledge acquired through formal instruction such as rugby coaching).

As a group, the coaches discussed how they thought rugby should be coached and ideas around the type of activities could be included in the first session. I established that the sessions would be encased within GCA, so the coaches led discussion around the type of activities they could do, whilst I helped facilitate this. The coaches had some knowledge around GCA and were asked to go away and think of ideas of how to apply *move forward into space* in practice. This focus group acted as the beginning of the first cycle of action research.



The day before the first coaching session, the coaches and I met to establish the content of the following day's session. The coaches came to the meeting with their ideas, before I helped shape the activities into a session. The process was intended to be collaborative in nature. The activities included 'eggs in the basket'<sup>4</sup>, 'bulldog'<sup>5</sup> and '1 v 1'<sup>6</sup>. During the session, the coaches were asked to begin to build relationships and interact with the children as Vygotsky highlighted that what an individual learns is mediated by and cannot be separated from his or her social interactions and relationships with a MCO (Wertsch, 1991; Moll, 2014). Furthermore, they were asked to correct any misconceptions, such as children running backwards as opposed to forwards.

Within twenty minutes of the session finishing, the coaches and I met in a coffee shop on the university campus to reflect and deconstruct the session in relation to their application of coaching *move forward into space*, developing relationships with the children and their impact on the children. Through discussion, they shared how they thought the session went, how they found applying GCA and what they felt they needed to change for the following session. I shared my observations of their practice in relation to their application and any issues that related to the delivery of the session. The coaches missed many opportunities to identifying good play around *move forward into space* and did not address misconceptions, such as running backwards, so were asked to address that the following week. Throughout sharing of their perspective and my observational notes, discussion flowed to promote coach reflection to co-construct a shared understanding of the session. I wrote bullet pointed notes throughout these meetings and wrote them up as part of my weekly reflective log within four hours of the meeting's completion (McKernan, 1996).

The day after each coaching session I met with both critical friends where they evaluated all aspects of the research project by challenging my assumptions, which helped

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<sup>4</sup> - Children split into four teams in each corner, the children, one team member at a time, must run and get a ball (lots of balls in the middle) from the middle of the pitch and return it to their corner before another team member can run and get another ball. Once all the balls are taken from the middle, the children can go and take others from the other team's corner.

<sup>5</sup> Each participant has a ball and one defender in the middle, then the attackers will evade the defender by running to find space while carrying the ball in two hands. The defender will try and touch the players two handed with a ball as they run from one side of the pitch to another. As the attackers get touched, they place their ball outside the pitch and become another defender, making it progressively harder for the attackers.

<sup>6</sup> One attacker starting with the ball tries to evade a defender before scoring a try. Start in a big area before gradually making the area smaller to make it more challenging for the attacker.

reduce the subjectivity of my research (Koshy, 2010). Being present at each session enabled them to scrutinise the coaches' practice, from an informed position. These meetings supported a Vygotskian approach to learning with the collaborative and co-operative nature of the meetings (Vygotsky, 1987). Each meeting lasted approximately an hour and the feedback from the critical friends was incorporated into the weekly reflective logs.

## Week 2

The day before the second coaching session, the coaches and I met to establish the content of the session. The coaches came to the meeting with their ideas, before I helped shape the suggested content into a session, and despite me intending to work collaboratively, on reflection, I was quite direct in my approach by controlling the session content. The focus of the session was still on the concept of *move forward into space*. The activities included 'bulldog', with the coaches specifying where the defenders started, such as grouping the defenders in one place to provide different challenges to the attackers. They also did '1 v 1s' and '2v 1s'<sup>7</sup>. During the session, the coaches were asked to continue to build relationships with the children, correct misconceptions, whilst also trying to draw information out of the children. This supports a Vygotskian perspective as Vygotsky emphasised the joint construction of knowledge and understanding between the learner and the MCO (Vygotsky, 1987).

As detailed in week one, the coaches and I met post session to reflect and deconstruct the session in relation to their application of coaching *move forward into space*, developing relationships with the children and how they attempted to mediate the children's learning. I shared my observations of their practice in relation and addressed any issues that emerged. The coaches found it challenging to coach as they were disorganised meaning that they found coaching through GCA challenging.

## Week 3

Following the previous week's session and post session meeting, where the coaches struggled to structure the session due to a lack of organisation, I gave them theoretical input via a

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<sup>7</sup> One attacker starting with the ball and another in support. The attacker tries to evade the defender before scoring a try. If the ball carrier wishes, they can pass to the support player to continue the attack to try and score. Start in a big area before gradually making the area smaller to make it more challenging for the attackers.

PowerPoint presentation on the Tactical Games Approach (TGA) (Oslin, Mitchell and Griffin, 2006), to provide more structure to the coaches and help facilitate the sessions. Following introduction of the theory, I discussed with the coaches around their understanding of the model and established their application of it in the following day's session. Here is what the session structure using the TGA looked like for week 3:

- 3 v 3 whole game: Coach facilitates how the game re-starts after each score
- Question and Answer session: Focus on *move forward into space*
- Practice Task: 1 v 1s. Start the attackers and defenders in different positions. Play around with their set up.
- 3 v 3 whole game: Coach facilitates how the game re-starts after each score

The focus of the session was to continue to build relationships with the children, correct misconceptions, consider how to mediate the children's learning, whilst also incorporating the TGA. As detailed in week one, following the session the coaches and I met to reflect and deconstruct the session in relation to the session aims. I shared with them my observations of their practice and they identified the need to develop the children's support play.

#### Week 4

The focus of the session in relation to the coaches' pedagogy was the same as in week three. The session structure was the same as week three with just the Practice Task altering to '2v1s'. This was as a result of the coaches identifying that they needed to focus on the use of the support player. What emerged during the session was that the coaches needed to be supported more on an individual basis, as they were finding different challenges and at different stages of their coaching. For example, Ryan struggled to contextualise the learning and went away from using the TGA and would therefore need more support around how to structure his sessions. In addition, they identified that they needed to use similar phrases and language in instruction to promote a shared understanding across all the groups.

#### Week 5

The TGA structure was used with the Practice Task continuing to focus on 2 v 1s, before evolving to practice '3v1s'<sup>8</sup> to provide the children with more options of support. The coaches

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<sup>8</sup> The same as 2v1s, but with two support players instead of one.

were asked to focus on how they used language in instruction to create shared understandings. I interjected on a number of occasions during the session to support the coaches as they found some of the children's behaviour challenging, but it also provided me the opportunity to model the expected level of detail within their use of language when interacting with the children.

### Week 6

There was no coaching session this week as it was the children's half term, but we had a pre-planned focus group instead. The focus group lasted approximately one hour and was recorded via an iPad. In this focus group we discussed the progress of the study in relation to the aim and objectives, but also discussed areas for future focus. This focus group completed the first cycle of action research.

### **Cycle 2**

#### Week 7

Prior to the start of the session, I introduced the Learning Objective (LO) and Success Criteria (SC) to the children and displayed it clearly for the children on a television screen. The LO was:

- To develop understanding of space.

With the SC being:

- In a 3 v3, recognising when and where to pass
- As a support player, deciding whether to support close or wide
- Investigating who decides where the space is.

Displaying the LO and SC was to make it clear to the children what the focus of the session was, but also assist the coaches with mediating the children's learning. The TGA structure was used with the coaches starting and ending with games of either 3 v 3 or 4 v 4. The Practice Task continued to focus on the use of support by utilising 2 and 3v1s. To explore the use of cultural tools, prior to starting his group Henry showed the children a video of the World Touch Rugby Championships. The intention was for them to be able to watch rugby and see what it was like, rather than the contact format that they had been exposed to prior to the start of the study, but also to engage the children with the forthcoming lesson.

## Week 8

The day before the session the coaches and I discussed ideas around how to coach *width* and *depth*. I gave them some examples as to what they could do around teaching this, such as slowing the play down and walking it through, putting different coloured bibs on defenders or using channels. One of the coaches felt that from previous experience of him being an inexperienced football player that slowing the play down helped him develop his understanding of the game. The coaches went away and planned the middle section of the session, as they were keeping the beginning and end parts within a game of either 3 v 3 or 4 v 4. The session was structured using the TGA, with the Practice Task being a slowed down version of the full games at the beginning and the end. This was as a result of the previous days discussion and the coaches trying to evolve the children's understanding. After the session the coaches and I met to discuss it. It was decided to continue to experiment with the middle part of the session to facilitate understanding of the abstract.

## Week 9

The coaches and I met the day before. The session content had been clarified the previous week, meaning the meeting was brief. The TGA structure was applied with similar content from the week before. The coaches started to manipulate the middle part of the session more by altering pitch dimensions, starting the attack and defence in different players and increasing or decreasing the number of defenders to attack. This was to manipulate how much space and width was on the pitch, which set different challenges to the attack. The coaches and I met after the session. We discussed the use of cones to assist when explaining to help understanding in the following session.

## Week 10

The coaches continued to use the TGA with the focus in the Practice Task being on developing understanding of the abstract. During the session, Edward used cones to assist him in explaining *move forward into space*, *width* and *depth* to the children. The children in his group used the cones to help further their understanding by having to articulate to the other children in their group what they meant. As this was the final week and we were to have a focus group the following week, the meeting was shorter being only ten minutes long.

## Week 11

The final focus group took place the week after the final coaching session, which lasted an hour.

## Appendix 5- Information Sheet for the School

Dear Sir/Madam

My name is Rhys Pritchard and I am a Lecturer of Physical Education and Sport Pedagogy, whilst also studying for a Doctorate in Sports Coaching. Prior to September 2017, I have taught for seven years, predominantly at the primary age group and lead on any Foundation and Primary Physical Education content on the sports courses at the university.

For my thesis for my Doctorate in Sports Coaching, I am looking to implement game based approaches in the coaching of rugby union. I am asking permission for a class of between 20 and 30 pupils of year 4 or 5 pupils from your school to be the coached participants in this study. They will come onto campus once a week during the Spring Term for 10 weeks to participate in rugby union coaching sessions from Cardiff Metropolitan University students, who are rugby players, hold a minimum of a UKCC Rugby Level 1 coaching qualification and all have an enhanced DBS checked.

All I am asking is from you is to give permission for your children to come onto campus once per week every Tuesday to take part in rugby coaching sessions delivered by the student coaches. The coaching sessions will take place in the purpose built sports hall facility. I will be in attendance in every session and ensure that everything runs smoothly.

There is no requirement from your staff during the coaching sessions as I will oversee everything. However, if they so wish, they can take part as much or as little as they would like and use it as a CPD opportunity for themselves.

When the study is complete, I am looking to publish the results in a prominent academic journal. Any quotes with reference to a school being used will of course be anonymised and the school not named.

If you have any questions then please feel free to ask. I hope you will be willing to allow your student to participate in the coaching sessions.

Kind Regards,

Rhys Pritchard

[RPritchard@cardiffmet.ac.uk](mailto:RPritchard@cardiffmet.ac.uk)

### Study Supervisors

Dr Kevin Morgan

[kmorgan@cardiffmet.ac.uk](mailto:kmorgan@cardiffmet.ac.uk)

Dr Gethin Thomas

[glthomas@cardiffmet.ac.uk](mailto:glthomas@cardiffmet.ac.uk)

Appendix Six- Consent Form for Head Teacher

## CONSENT FORM

Head Teacher:

Name of Researcher: Rhys Pritchard

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**Participant to complete this section:      Please initial each box.**

I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered

I understand that participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I agree for the children to take part in the coaching sessions.

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Signature of Head Teacher

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Date

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Signature of Researcher



## **Appendix Seven- Information Sheet for the Coaches**

### **Project Overview**

The aim of the project is to show how I, a coach educator, used Vygotskian notions to improve rugby union coaches' conceptual understanding of game principles and how to apply them in their own game-centred coaching practice.

The aim is to be addressed through three interrelated objectives:

1. To utilise the notion of Vygotsky's concept formation, as a coach educator, to develop coaches' conceptual understanding about the key principles of rugby union.
2. To assist coaches to develop their pedagogical ability to apply their conceptual understanding of rugby principles within a GCA.
3. To analyse and interpret the coaching issues (dilemmas) experienced by myself and the coaches and how they were dealt with through recourse to Vygotskian notions.

A class of between 20 and 30 pupils from a local primary school year 4 class will come onto campus once a week during the Spring Term for 10 weeks to participate in rugby union coaching sessions.

You will initially be asked to coach a 20 minute session to the group prior to the main 10 weeks action research project starting. This is for you to meet the children and for them to meet you, but also for us to generate a starting point. Following this, they will have a pre-practice interview which will last no more than 15 minutes to enable me to find out your reflections on the session, knowledge and understanding of rugby, perceptions on how the game should be coached. This will allow me to gather base line data as to where you are in terms of your coaching practice.

Following collection of baseline data, you will be asked to attend a seminar where the research project will be explained in more detail and to allow you to ask any questions. In addition, the expectations of you during the project will be outlined. Due to the collaborative nature of the project, I will then ask for your input regarding the first session. The session is anticipated to last a maximum of one hour.

All coaching sessions will be delivered through Game-centred pedagogy (Light, 2013) and underpinned by Vygotskian notions. Employing Game-centred pedagogy is consistent with Vygotsky's work on concept formation, in that it is important that children learn concepts in the context in which they are familiar with, otherwise they will become disembedded from everyday practice (Vygostky, 1987). This line of Vygotskian thinking aligns with Game- centred pedagogy as skills are developed in the context of a game, building on previous knowledge, whilst also improving tactical understanding (Light, 2013).

Following the first seminar and before the first coaching session with the children, I will meet with you as a group to establish how you are feeling regarding the project and I will present you with the first session and establish understanding of the sessions and the approach you will be taking.

After the first session and after every session, we will meet immediately after to review how the session went. I envisage that this will take ten minutes. You will then be asked to write a reflection following the session and to submit it to me via email within 48 hours. I will provide you with the template which will help you structure your thoughts. Using your reflections, my reflection and observation notes, I will then analyse the information before planning the next session. I will then meet with you a few days before the next session to discuss the next session, where we are going next and discuss ideas around Vygotskian notions. This will be the structure for the 10 weeks of the action research project.

Following completion of the coaching sessions, I will then conduct post practice interviews with you to gain an understanding of how you thought the process went and the change it has made to your practice.

### **Data Collection**

Data will be generated through the use of four methods:

- 1) Written reflections by the Head Coach (researcher) and student coaches (you)
- 2) Observation field notes from the Head Coach (researcher)
- 3) Focus groups (informal and formal)
- 4) Pre and Post Practice interviews
  - The study is for my Thesis, which will allow myself, the researcher, to achieve my Doctorate in Sports Coaching.
  - This is an invitation to you to join the study, and to let you know what this would involve. The study is being organised by Mr Rhys Pritchard, Lecturer of Physical Education and Sport Pedagogy, but also Doctorate Student in Sports Coaching
  - When the project is complete we intend to publish the results of the study in a prominent journal.

### **Why you?**

You are studying a sport related degree at Cardiff Metropolitan, play rugby for the university and have a minimum of UKCC Level 1 Rugby Coaching Qualification. You have ability on the rugby field, but more importantly, you are showing a willingness to develop as a coach.

### **What will happen if I join the study?**

As explained above in the information section, there is a time commitment from you, however it will be considerably less than what you would have to commit to in a club coaching environment. You will be exposed to new academic theory and literature and possibly a different way of coaching. You will not be expected to do any extra work out of the meetings and sessions, apart from writing a weekly reflection.

### **Can I pull out of the study at any time?**

If you decide to join the study you can change your mind and stop at any time. We will completely respect your decision. If you want to stop, please let me know as soon as possible.

### **What happens with the data gathered during the study and to the results?**

I am responsible for analysing all the data gathered during the course of the study and analysing the results. I will use it to answer the aim of the study by addressing the objectives stated above. You will have the opportunity to read the study and will be sent any subsequent publications that come out of the study.

### **How we protect your privacy:**

All the information I get from you is strictly confidential, and your privacy will of course be respected. We will take very careful steps to make sure that you cannot be identified from any of the data collected about you.

When I have finished the study and analysed the information, all the forms we use to gather data will be completely destroyed. We will keep the form with your name and we will keep a copy of the attached consent form for 7 years, because we are required to do so by the University.

### **Any Questions...?**

Feel free to ask anything

Name: Rhys Pritchard

Contact Details: [RPritchard@cardiffmet.ac.uk](mailto:RPritchard@cardiffmet.ac.uk)

### [Study Supervisors](#)

Dr Kevin Morgan

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Dr Gethin Thomas

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Appendix Eight- Consent Form for the Coaches

## PARTICIPANT CONSENT FORM

Participant name:

Title of Project: Vygotsky in Practice: Applying Vygotskian notions to improve coach education in rugby union.

Name of Researcher: Rhys Pritchard

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**Participant to complete this section:      Please initial each box.**

I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I agree to the use of anonymised quotes in publications

I agree to the focus group being audio recorded

I agree to take part in the above study.

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Signature of Participant

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Date

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Name of person taking consent

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Date

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Signature of person taking consent

*When completed, 1 copy for participant & 1 copy for researcher site file*