Negotiating shot selection in New Zealand secondary school boys' basketball: A case study

By

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Abstract

Competitive basketball teams around the world attempt more three-pointers than ever (Quealy & Hoffman, 2019; Wilco, 2019). The change in shot selection is rationally strategic and stems from an intensifying quantitative imperative (Baerg, 2015; Goldsberry, 2019). However, de-contextualised analyses do not include situational realities (Baerg, 2015; Hutchins, 2016). For this reason, the recent proliferation of data-driven quantitative analyses is limited as a tool for understanding collective and individual improvement in sport (Beer, 2015; Millington & Millington, 2015). In particular, current shot selection research neglects complex understandings of the teaching and learning process (Cushion, 2007; Lyle, 2018; Saury & Durand, 1998), including frameworks that link decision-making to coaching practice and the team environment (Jones & Wallace, 2005; Mouchet, 2005).

Building upon complex notions of the coach-as-orchestrator (Jones & Ronglan, 2017) and athlete decision-making as emergent phenomena (Mouchet, 2005), this study re-framed shot selection as a negotiation between coaches, players and their environment. Using a qualitative and ethnographic case-study design, this study investigated how a secondary school senior boys' basketball team in New Zealand negotiated shot selection over a competitive season. Through formative intervention methodology (Engeström & Sannino, 2011), the researcher partnered with the team to support improvements in decision-making, including shot selection. The outcomes of research were three case narratives that situated shot selection over three terms in the academic calendar.

The case narratives depict a conscious reflective struggle with shot selection. In so doing, this study humanises the experience by highlighting the complex social and pedagogical realities of decision-making. Findings reveal the ways in which shot selection was linked to changes in offensive system design, an evolving training environment, contradictory goals between participants, the players' embodied history and the confusion that arose when moving between different teams. Furthermore, the findings reinforce the need to manage complexity when coaching (Jones & Ronglan, 2017), including using game scenarios in training, making the implicit explicit, embracing conflict as a stimulus for growth, developing complex concepts, noticing to inform action and embracing complex sensibilities. This study enriches pedagogical theorising by linking movement behaviours and pedagogical decisions to the complex social realties of players, coaches and their local environments. In so doing, this research expands the boundaries of pedagogy research to include the broader problematic situation of the team.

Chapter 1 Introduction

Shot selection is a principal question for offensive basketball strategy (Skinner, 2012). In a dramatic recent development, teams around the world have shifted their approach by attempting more three-pointers than ever before (Quealy & Hoffman, 2019; Wilco, 2019). Changes in strategy stem partly from the intensification of quantitative performance analyses and innovations in data collection technologies (Baerg, 2015; Goldsberry, 2019). Despite generating strategic insights, the emergence of big data in sport raises questions around the epistemology of coaching (Millington & Millington, 2015). This includes concerns that data-driven analyses may promote de-contextualised judgments of athletes (Hutchins, 2016), measurement culture in team sport (Beer, 2015), and a mythology around the superiority of objectivity (Beer, 2015; boyd & Crawford, 2012; Millington & Millington, 2015).

Researchers can support complex sensibilities in coaching by studying shot selection ethnographically, as it emerges in the lived context of coaches and players. Given the relative absence of contextual information, shot selection research can benefit from integrating complex understandings of both athlete decision-making (Araújo, Davids & Hristovski, 2006; Mouchet, 2005; Ovens & Smith, 2006) and the coaching process (Cushion, 2007; Jones & Ronglan, 2017; Jones & Wallace, 2005). On this basis, the present study approached shot selection as an interdependent phenomenon that unfolds over time, shapes (and is shaped by) the social environment and resists straightforward solution, prediction or control. Whereas predominant approaches attempt to represent shot selection quantitatively, this study represented shot selection qualitatively, in the form of a narrative. As a complex sense-making mechanism, narratives promote complex sensibilities by telling the story of human decisions in context, against the backdrop of history, relationships, tensions and dilemmas (Browning & Boudes, 2005; Bruner, 1991; Tsoukas & Hatch, 2001).

With respect to the sport-coaching field, a narrative representation of shot selection contributes to complex sensibilities in coaching by departing from the predominance of objectivist science and the current focus on both internal body systems and training methods. Given the messy realities of coach teaching and athlete learning, Jones and Wallace (2005) understood coaching as a process of orchestration. In so doing, the authors called on researchers to illustrate the complexity of coaching before prescribing

best practice methods. Despite acknowledging the complexity of coach teaching and athlete learning, comparatively little research attention has been paid to capturing and understanding this complexity as it unfolds in concrete settings (Jones, Edwards & Viotto Filho, 2014; Jones & Wallace, 2005). In particular, the emphasis in nonlinear pedagogy on perception-action coupling suggests a need to expand the boundaries of research to include socio-cultural dynamics (Smith, 2013). In that respect, this study addresses the need for contextualised forms of research that capture the ambiguity of coaching practice while also linking athlete movement behaviours to the social environment, of which coaches are included.

The remainder of this introduction expands on the rationale for research. A discussion of the three-point revolution in competitive basketball foregrounds an exploration of the tensions between big data, coaching and the athlete experience. In asserting the complexity of coaching and athlete decision-making, this section highlights the need for a contextualised investigation that brings coaching and athlete decision-making into view together. The remainder of the introduction outlines the core elements of the study, including the guiding theoretical framework, research questions and case study design. A road map to the thesis concludes this chapter.

1.1 The three-point revolution in competitive basketball

Around the world, competitive basketball teams attempt more three-pointers than ever. Among American professional teams, 27 of 30 recently surpassed their historical record for attempts in a single season (Quealy & Hoffman, 2019). Similarly, three-pointers attempted by Division I universities in the United States skyrocketed (Wilco, 2019). The change was rationally strategic. A statistical turn in competitive sports, including an emphasis on efficiency in basketball strategy (Kubatko, 2007; Maymin, 2013; Reich, 2006; Wu, 2017), provided players, coaches and team management around the world with statistical insights that shaped performance (Burgher, 2017; Goldsberry, 2019; Morey & Hinkie, 2013). In this respect, observers noted that the growing rate of three-pointers has been sparked by a change in their perceived value:

> The strategy may rankle older fans and coaches who still view the 3-point line as some sort of gimmick, but more than ever, N.B.A. teams understand the probabilistic value of a [three]-point shot. If a 24-foot shot has almost the same likelihood of going in as a midrange jumper, but it's worth three points instead of two, why bother with the 2-pointer at all? (Quealy & Hoffman, 2019)

Drawing on data from the American professional ranks, Oliver (2004) pioneered quantitative investigation of efficiency in basketball. Dating back to the 1974 season, Oliver calculated points scored and allowed per 100 possessions then compiled an historical top 25 ranking. Offensively, Oliver revealed that championship teams were more statistically efficient. For example, despite a slower pace that yielded fewer possessions within each match, the Chicago Bulls (1997-98 champions) and Utah Jazz (1997-98 finalists) scored more points within each possession. Through this analysis, Oliver reconceptualised successful basketball performance to foreground the idea that, "when a team is referred to as good, it is because they are efficient, not because they score a lot of points" (p. 25).

Building on the work of Oliver (2004) and others, industry researchers investigated post-hoc study of shot choice[1] (Chang et al., 2014; Sampaio, Lago & Drinkwater, 2010; Skinner, 2012). As elaborated by Skinner and Goldman (2015), interest in this area of strategy stems from recognition that shot selection is a central problem to the game of basketball:

> When planning its offensive strategy, the primary decision faced by a basketball team is this: which shots should the team take, and which players should take them?" In general language, the question becomes: how does the team optimally allocate its shot attempts, between different offensive options? Or from the perspective of players in the flow of the game: which shooting opportunities are good enough to be taken and which should be passed up? (p. 2)

Using innovative camera tracking technologies,[2] quantitative analyses have revealed how shot location, shot type and defender distance can predict shot value (Chang et al. 2014; Lucey et al. 2014). Counter intuitively, a long-distance shot just behind the three-point line (22-24 feet away) can produce more points per attempt than a 'midrange' shot taken from a closer distance inside the three-point line but outside the key (8-22 feet away) (Chang et al. 2014; Goldsberry, 2019; Quealy & Hoffman, 2019).[3] Defender distance to the shooter also impacted conversion rates, particularly when attempting shots behind the three-point line. Lucey et al.'s (2014) analysis of 20,000 three-point attempts found that when a player

[1] Post hoc refers to an aggregated analysis of shots after they have been attempted.
[2] Sport VU data comes from GPS trackers that athletes wear during games. The technology generates information on player activity relative to court location.
[3] Assuming the same number of attempts, a three-point shot converted 33 percent of the time would yield the same number of points as a two-point shot converted 50 percent of the time. For example, converting two of six three points shots (33%) would yield six points just as converting three of six two-point attempts (50%) would yield two points. Strategically, the implication is that each player should take a two-point shot only if it is likely to be converted at a rate of 50 percent or higher. Open shots and layups are more likely to be converted at this rate. However, any two-point shot that would be converted at less than 50 percent (contested shots and midrange twos) could be replaced by a three-point shot that can be converted at 33% or higher.

is ‘open’ they convert three-point attempts at a rate of 40 percent. In comparison, a defender within six feet reduces the conversion rate to 32 percent, on average.

1.2 Limitations of the quantitative imperative for coaching practice

Despite widespread embrace of the strategic insights from ‘big data’ analytics, coaching is not a wholly rational activity (Jones & Wallace, 2005). In that respect, quantitative data-driven research can become problematic when interpretations of findings result in oversimplified assessments of individual and team performance. In a discussion of the three-point revolution in American basketball, Goldsberry (2019) mapped differences in points per shot according to shot location. Noting the significant difference in value between midrange shots (under 0.85 points per attempt) and corner three pointers (1.10-1.20 points per attempt), Goldsberry asserted the non-problematic status of this trend, “no wonder the midrange is dying. It’s basic economics” (p. 3). A similar assessment emerged when Chotiner (2019) interviewed former professional player Jalen Rose. In discussing the proliferation of three-point attempts, Chotiner proposed that the mathematics of points per attempt now make shot selection common sense:

> But it doesn’t seem that controversial – and correct me if I’m wrong, because I am not an expert – but you are not going to shoot that much better from nineteen feet than from twenty-three feet, and you get one and half times as many points for taking one and a half steps back. That’s common sense, no? (para 6)

Chotiner’s (2019) comment reveals how data-driven analyses can reinforce an objectivity bias, including a crude faith in numbers (boyd & Crawford, 2012). Such assessments neglect the context-specific dynamics that cannot be measured. In a reflection on the use and availability of numerical data for analysing sport performance, Hutchins (2016) questioned an uncritical embrace of de-contextualised data given the ambiguities and tensions inherent to competitive sport participation. Primarily, Hutchins worried that de-contextualised findings neglect situational demands, leading to unfair judgments:

> Even the most complex algorithms that cross reference multiple data points have difficulty in accounting for all existing contextual factors, such as the game day mindset of the athlete, the quality of a coach and the (in)consistency of their instructions, changing roles within the team over the course of a game, conditions in different sections of a playing arena, hidden injuries and illness, and the attitudes of individual referees and unpredictable interactions between game officials. (p. 505)

Hutchins’ (2016) concerns about de-contextualised findings build on current directions in pedagogy and skill acquisition research. A growing body of sport pedagogy scholarship acknowledges the complexity of both athlete decision-making (Araújo, Davids & Hristovski,

2006; Mouchet, 2005; Renshaw, Davids, Shuttleworth & Chow, 2009) and coaching (Cushion, 2007; Grehaigne et al., 2005; Lyle, 2018; Light, Harvey & Mouchet, 2014; Jones, Edwards & Viotto Filho, 2014; Jones & Ronglan, 2017; Jones & Wallace, 2005). From this complex perspective, decision-making is not located inside an individual, irrespective of one's surroundings. Rather, decision-making is embodied (Mouchet, 2005; Ovens & Smith, 2006), "situated in, and specific to, the local and specific circumstances of the game situations while being located in a socio-cultural context and shaped by the decisional background (Light, Harvey & Mouchet, 2014, p. 261). From this complex perspective, athlete decision-making inherently includes coach-player interactions, including the dynamics of the training environment, interpersonal relationships and organisational conditions.

A similar view of coaching practice exists. Models of coaching receive criticism when they fail to appreciate the complex social and situational realities that make coaching a messy process (Cushion, 2007; Lyle, 2018). Increasingly, researchers attempt to capture how expert coaches adapt their behaviour to meet situational demands (Cöté & Gilbert, 2009; Saury & Durand, 1998). This includes keen attention to the performance requirements of their sport as well as the needs and behaviours of their athletes. *In situ* studies reveal how effective coaching involves flexibly navigating changing circumstances. In their study of expert coaches, Saury and Durand (1998) found that the "actions of coaches were full of context based, opportunist improvisations and extensive management of uncertainty and contradictions" (Saury & Durand, 1998, p. 268).

Considering its improvisational nature, coaching has been conceptualised as a process of orchestration (Jones & Ronglan, 2017; Jones & Wallace, 2005). From this standpoint, coaches manage their limited control and awareness by employing hands-off methods, embracing daily dilemmas and actively monitoring evolving circumstances (Jones & Ronglan, 2017). Consequently, coach teaching and athlete learning are seen as interdependent phenomena that inherently include interactions between players, coaches and the team environment (Jones, Edwards & Viotto Filho, 2014). Such interdependence reinforces the need for context when attempting to understand how coaches can approach an issue like shot selection. Historically, contextual information remains largely absent from both coaching pedagogy research (Jones & Wallace, 2005) and tactical analyses of collective behaviour in basketball (Courel-Ibanez, McRobert, Ortega Toro & Cardenas Velez, 2017).

Such a gap may stem from the typical starting point of research. Jones and Wallace (2005) noted the tendency in sport pedagogy research to seek "positive improvements through identification and prescription of best practice methods" (Jones & Wallace, 2005, p. 123). Such knowledge-for-action research leads scholars to pursue immediate improvements in practice without understanding the phenomenon in depth. For Cushion (2007), such representations are problematic in that they "lead us to reduce the effect of the context and reduce coaching to the outcome of direct action actualised during an interaction" (p. 398). Unsurprisingly, Cushion argued that the field understands much about "the 'what' of coaching, but less about the 'why' and 'how'" (p. 398).

1.3 Investigating shot selection as a constant negotiation

Using a coaching-as-orchestration framework (Jones & Wallace, 2005), the aim of this study was to advance a complex perspective of athlete decision-making and the coaching process. Importantly, this study intentionally linked coaching and playing as interacting practices that shape, and are shaped by, each other. This occurred by examining shot selection as a constant negotiation between coaches and athletes, contingent on interacting objectives, constraints and relationships (Jones & Ronglan, 2017).

Through a qualitative case study research design, the present study asked how a secondary school boys' basketball team in New Zealand negotiated shot selection over a single season (Table 1). Principally, the research questions demanded an interpretive paradigm founded in complex assumptions and focused on the concrete realities of practice (Jones, Edwards & Viotto Filho, 2014; Jones & Ronglan, 2017; Jones & Wallace, 2005). Drawing upon the assumptions of third generation Activity Theory (AT), I employed formative intervention (Sannino & Engeström, 2011) to co-investigate shot selection as a member of the team. Positioned as a team advisor, I became a researcher-pedagogue who collaborated with the coach and players to identify, analyse, and then scaffold solutions to offensive decision-making challenges. During this process, shot selection emerged as a point of focus. Synthesised in narrative form and told from the perspective of the researcher-as-pedagogue, the case findings present the experience of the team across three terms and through three overlapping lenses: 1) cultural and historical conditions of basketball activity, 2) conflicts and dilemmas in shot selection, and 3) individual experiences of shot selection.

In drawing upon AT as a methodological framework, this study sought to capture the cultural and historical conditions from which patterns in shot selection emerged. In the tradition of AT, culture refers to history in the present (Cole & Engeström, 1993), or the "artefact saturated world that is the product of prior human activity" (Cole & Gajdamashko, 2009, p. 129). As a property of groups, culture exists in the tools and symbols that mediate learning and human behaviour. Primarily, these include material objects and language but also include movements and gestures. In this respect, shot selection was investigated culturally through researcher efforts to capture the material and symbolic artefacts that "regulate interaction with one's environment and one self" (Cole & Engestrom, 1993, p. 9). A specific emphasis was placed on how cultural artefacts evolved to mediate style of play, particularly forms of talk and movement that expressed ways of playing offensive basketball among the coaches and players of the basketball team under study.

Table 1. Research questions

Primary question	Secondary questions
1) How does a senior boys' basketball team in New Zealand negotiate shot selection over a competitive season?	a) How do cultural and historical conditions constrain shot selection? b) What are the conflicts and dilemmas in shot selection that emerge? c) How does the team respond to shot selection? d) How do individual players negotiate shot selection?

In these respects, this study attempted to capture then represent the culturally mediated and socially interactive nature of shot selection. Because this depiction necessarily included the coaching process, findings were generated that reveal the ways in which coaches can attempt to manage complexity. Such insights have value for coaches by provoking critical reflection, including greater attunement to their limits to awareness, control and prediction of athlete learning and decision-making.

1.4 Researcher motivation: Making sense of the complexity of sport

The underlying motivation for this research was to better understand the complex practice of coaching and playing competitive team sport. Inspired by a concern for unfair judgments and stereotypes of sports participants, the origins of this investigation date back to my experiences as a youth basketball coach then a counsellor for student-athletes at a tertiary

institution in the United States. In my role as a counsellor, high performing male and female basketball student-athletes engaged my academic support and career guidance. Our conversations frequently turned to their playing experience, including the challenges they faced in adjusting to a higher level of play. This included concerns about decision-making, coaching style and strategy. Ultimately, their stories triggered a concern that the teaching and learning of decision-making was not well understood.

Stimulated by that experience, I sought a more rigorous theoretical understanding of coaching and playing team sports. In hopes of demystifying the process by which competitive school-aged players develop an advanced understanding of the game, sport pedagogy and athlete decision-making became my academic interest. On this journey, I rejected traditional command-and-control efforts by coaches and instead embraced notions of athlete-centeredness, empowerment and discovery in training. Importantly, I developed a specific interest in athlete intelligence that unearthed problematic trends. For instance, Mahiri and Van Rheenen (2010) highlighted negative perceptions that competitive athletes can face. Namely, because sport involves significant corporeal activity, it is somehow discounted as a serious intellectual endeavour:

> That this form of literacy relies on fast-twitch muscles and split-second decision-making does not make the reading of the game any less skilful. The process is active and analytical. But because this action is primarily physical, of the body, the strategic and purposeful analysis is somehow discounted intellectually. (p. 114)

In this regard, I grew especially dissatisfied with oversimplified judgments of competitive athletes. For instance, African-American athletes in the United States faced stereotypes that they succeed because of their natural athletic ability (Harrison & Lawrence, 2004; Zachary, Perry and Darley, 1997). Similarly, talent identification programmes in New Zealand and Australia can shape perceptions of sport by systematically targeting ethnic populations based on perceived inherent physical advantage. According to McDonald (2014), talent development programmes historically emphasise the identification of individuals with “sporting genes” (p.1333). Problematically, those efforts have shifted from an original focus on the general population of aspiring athletes to specific targeting of ethnic populations. McDonald (2014) explained that:

> [T]he logic of the programmes is based on the belief that Pacific Islanders already possess advantageous genetics for rugby (hence testing is redundant). For Pacific Island boys, the motivation to attend such [talent identification programmes] is enhanced by the cultural importance placed on rugby as a legitimate place to express masculinity. (p. 1333)

The persistence of problematic generalisations toward sport participants underpins the

concerns of this research. In these respects, this study provides a means to provoke a more nuanced conversation. Investigators can do more to capture the complexity of decision-making, including using qualitative and ethnographic approaches to understand the messy realities of coaching and playing team sports. Without contextualised perspectives, scholars of sport (including pedagogy, skill acquisition and performance analysis) risk tacitly reinforcing oversimplifications of coaching and playing decisions.

1.5 Road map to the thesis

The thesis proceeds as follows. As a review of literature, Chapter Two first draws a distinction between the quantitative imperative that currently predominates shot selection research and the alternative, complex view taken. This includes extended discussion of athlete decision-making as emergent and irreducible. Building on such notions, Chapter Two then asserts the need to expand the boundaries of complex-aware research given the absence of contextualised and integrated study of coaching and decision-making. Drawing on the work of Jones and colleagues (Jones & Ronglan, 2017; Jones et al., 2014; Jones & Wallace, 2005), orchestration provided a conceptual framework for organising such an investigation of shot selection in competitive basketball.

Chapter Three outlines the research design and methodology. This study employed a short-term, qualitative case study design using formative intervention (Engeström & Sannino, 2011; Engeström, Sannino & Virkkunen, 2014) and ethnographic methods. This design involved the researcher becoming a part of the system under study, collaborating with members of the team, documenting interventions then synthesising ethnographic data into three chronological case narratives. Chapter Three includes extended discussion of narrative as a complex sense-making device (Tsoukas & Hatch, 2001).

Chapter Four outlines the pragmatics of research, including a review of participant selection, ethical considerations and the writing process. The site for investigation was a senior secondary school boys' basketball team from a suburban school east of Auckland, New Zealand. The participants were primarily the coaches and players of the senior team. Secondary participants included the Sport Director, parents and personal trainers. To ensure privacy, real names were replaced with pseudonyms. In total, data collection took place over 15 months. Common to ethnographic forms of research, analysis began during data collection.

Chapter Five presents the findings as three chronological case narratives. Taken together, the case narratives illustrate how the secondary school boys' basketball under study negotiated shot selection during the period of investigation. Told through the researcher's perspective, the cases align with three distinct periods of the team's season: 1) off-season training, 2) preparation for Premier grade qualifying, and 3) the winter season. Each case depicts a conflict in shot selection that emerged, and actions taken collectively and individually in response. Within each case, a player within the team serves as a focal case study within the broader team-as-case study.

Chapter Six draws upon the case narratives to discuss the complexity of shot selection and its implications for coaching practice. First, the chapter makes sense of shot selection as it unfolded in the context of the team. This included both a broad discussion of shot selection in relation to the wider situation of the team and a narrow focus on five distinct perspectives on shot selection: 1) changes to the offensive system of play, 2) an evolving training environment, 3) contradictory goals between participants, 4) the players' embodied history, and 5) movement between teams. Second, the chapter explores the pedagogical implications of this complexity, including six perspectives on the coaching process that support a coaching-as-orchestration framework.

Chapter Seven outlines the implications of this study for current research in shot selection, nonlinear pedagogy and sport coaching. In contrast to predominant forms of shot selection research, this study humanises a complex phenomenon by linking changes in movement decisions to the complex social realities of the team and school. This study provides rich case material to illustrate the emergent and non-reducible nature of shot selection. For coaching pedagogy, this study extends interest in orchestration as a framework for understanding coaching practice (Jones & Ronglan, 2017; Jones & Wallace, 2005) and contributes to movements that call for a complex epistemology of coaching (Bowes & Jones, 2006; Cushion, 2007; Jones et al., 2013).

Chapter 2 Literature Review

This literature review begins with a discussion of the quantitative imperative (Andrews, 2008; Hutchins, 2016) in competitive sport, including the proliferation of big data analytics (Baerg, 2015; Millington & Millington, 2015). I address the limitations of this movement for understanding how coaches and players improve decision-making. This review then presents complexity thinking as an alternative philosophical position, embraced by some scholars of physical education and sport pedagogy (Hopper, Ovens & Butler, 2013; Ovens & Godber, 2013). Nonlinear, embodied and situated conceptualisations of athlete decision-making (Grehaigne et al. 2005; Mouchet, 2005; Ovens & Smith, 2006) provided theoretical support for a contextualised approach to studying shot selection. However, this review acknowledges calls to expand the boundaries of pedagogical research when taking a complex view of learning in sport (Light et al., 2014; Smith, 2013). Despite acknowledgements of the complexity the process, contextualised study of athlete learning experiences remains rare in the sport coaching pedagogy field (Jones et al., 2014; Jones & Wallace, 2005). This study furthers pedagogical theorising by drawing upon practice-oriented perspectives that understand coaching as a complex social process (Cushion et al. 2006; Cushion, 2007; Jones & Wallace, 2005). Specifically, orchestration (Jones & Ronglan, 2018; Santos, et al., 2013) provided theoretical grounding for conceptualising shot selection as a 'constant negotiation' between coaches, players and the environment. This review concludes with extended discussion of orchestration, including guiding assumptions and empirical support.

2.1 Quantitative imperatives, sport performance and coaching epistemology

This section begins with a discussion of the quantitative imperative in competitive sport (Hutchins 2016), including the relationship between quantified analyses of performance, and the potential costs of measurement culture in sport (Beer, 2015; Millington & Millington, 2015). Historically speaking, coaching theories, performance strategies and modes of sport analysis emerge from (and contribute to) ways of knowing the world (Keidel, 2014; Millington & Millington, 2015; Puerzer, 2002). In European football, Dutch professional clubs developed a countercultural form of play that shared the bohemian, anti-establishment ethos of the 1960's (Wilson, 2009). Conceptualised as a position-less art form rooted in individual creativity, 'Total Football' challenged the strict confining English practice of assigning fixed player positions. Wilson (2009) noted the connection between Total Football and the socio-political climate of the time:

> It is not hard to see a link between Dutch soccer and the intellectual spirit of the time – and it is a beguiling coincidence that the two greatest exponents of system as an attacking force, Ajax and Dynamo Kyiv, sprang up in the Netherlands and the USSR, arguably the most secular societies in Europe at the time. (p. 209)

Similarly, scientific baseball emerged during the late 19th century in the United States as a synergy between the industrial revolution and a rational approach to sport. Drawn from Taylorist notions of the efficient worker, statistics emerged as formalised measures that could establish indisputable standards of performance excellence in baseball (Puerzer, 2002).

In these respects, the intensifying quantification of sport warrants attention as both an extension of the tendency to measure performance and a manifestation of prevailing neoliberal values (Beer, 2015). Beer understood neoliberalism as an economic, social and political agenda that privileges the market over government regulation. As governments shifted away from interventionism, marketplace competition became the primary arbiter of social positioning. Critically, data metrics and analyses helped to enact this ideology. Across industries, organisations capitalised on large-scale shifts in computing power to digitise market information, including new forms of tracking technologies that radically increased the volume, velocity and variety of performance data (Kitchin, 2014). Resulting data sets have afforded analyses that can identify then exploit inefficiencies leading to market advantage. Kitchin (2014) characterised this shift as the continuous generation of exhaustive and finely grained data, a process that is both “flexible and scalable in production” (p. 2).

In a case study of measurement culture in English football, Beer (2015) described an industry-wide embrace of data-driven decision-making that cut across organisational levels. Organisations hired teams of performance analysts and used data to market themselves to the public. Coaches used data to evaluate players and select teams. Players became obsessed with performance data while coaches used data to shape practices and direct player decisions on the field. In these respects, a situation emerged where organisational leaders, coaches and players made decisions according to the metrics, including a picture of “a game that is managed, sometimes potentially micromanaged, by the metrics” (p. 6).

In its most extreme forms, Beer (2015) observed a crude faith in numbers. The systemic effort to make decision-making more data-driven and objective also included reducing “the

need for human intuition, discretion and agency" (p. 6) so that decision-making can be "more accurate and value generating" (p. 6). Observers of big data in competitive sport acknowledged a mythology associated with its rise. Specifically, boyd and Crawford (2012) noted how the institutionalisation of big data in sport has included a belief that large sets of data can produce knowledge and hidden truths not possible with "human agency alone" (Beer, 2015, p. 8). This included a sense that when decisions are more objective, performance becomes more reliable.

Similar commentary exists at the level of sport governance. Analyses of New Zealand sporting policy reveal the ways in which the country's small size, neoliberal values and bureaucratic tendencies have produced an ethos to not only perform at elite levels, but to compete with much larger nations and thereby punch above its weight (Sam, 2017). Recently, the government's targeted investment strategies to promote elite achievement symbolised a national commitment to neoliberal notions of performance and efficiency in sport (Sam, 2017; Keat & Sam, 2013). Following perceived failure at the 2000 Olympic Games in Sydney, Australia and 2004 games in Athens, Greece, government strategy streamlined. As a country with five million people and a GDP of only $140 billion, policy leaders acknowledged the inability to compete internationally based on absolute resources. In its place, the strategy became to invest in those sports with the greatest likelihood of advancing to medal contention while slashing contributions to those sports deemed unfit to contend for a top-eight finish in international competition. From 2006 to 2013, total investment in high performance increased from $29 million to $60 million NZD while the number of targeted sports, athletes and coaches reduced by half (Bullen, 2013; in Sam, 2017). Sam (2017) argued that the rationing of resources towards medal-contending sports at the international level reflected a commitment to keep up with larger nations.

Importantly, sociologists noted that big data does not necessarily imply progress when used to evaluate performance and development in competitive sport (Millington & Millington, 2015). Sociologists of sport highlight this contradiction when disputing taken-for-granted assumptions that sport achievement has inherently positive value (Pringle, 2001; Falcous and McLeod, 2012; Coakley, 2010; Hartmann & Kwauk, 2011). For example, while international rugby achievements may contribute to forms of national, regional and cultural solidarity, uncritical acceptance of the sport can mask many of its divisive and unsavoury qualities (Light & Kirk, 2000; Pringle, 2001). Similarly, Falcous and Macleod's (2012) case study of a tennis club in New Zealand illustrated how tennis participation can

result in the socialisation of dominant European, middle class values. In this respect, de-contextualised assessments of sporting outcomes (especially performance) ignore the social effects of participation, including reinforcement of divisions in society (Hutchins, 2016; Pringle, 2001).

Pedagogically, Frey and Eitzen (1991) warned that an overemphasis on measurable performance outcomes invariably produced investment in the engineering of competitive advantage. This process could result in a struggle over the athlete body. For instance, scholarly interest in rugby and Aussie Rules Football recently focused on the conflicts that emerged as sporting organisations attempted prediction, surveillance, regulation and discipline of player behaviour (Kelly & Hickey, 2009; McDonald, 2014). In this respect, the intensification of performance quantification can raise new questions about a historical struggle for control between coaches, sport leaders and athletes. Ajana (2013; cited in Beer, 2015) suggested a need:

> To challenge the label of newness that is often stapled on [data in sport] and to draw attention to the fact that the body has for so long been the subject of control, measurement, classification and surveillance. The digitalisation aspect of biometrics has certainly intensified such processes and opened up the body to further dynamics of power and control. (p. 3)

The intensification of performance data comes at an especially challenging time for New Zealand school sport. Sport New Zealand (2015) recently outlined the current milieu surrounding physical education and school sport (PESS) at the primary and secondary levels. Importantly, findings highlighted tensions in how competitive sport operates in schools,[4] including an explicit connection between poor behaviour by codes and an overemphasis on measurable performance outcomes:

> The sports sector needs to revisit its influence…the current competitive sport business model is driving many sports codes into poor behaviour. (p. 20)
>
> Sport NZ [should] change its investment outcomes in regard to young people…be more specific about the quality outcomes (not quantity) they expect from investment partners who deliver PE and/or sport in schools. (p. 22)

[4] Sparked by concerns of inequitable access to sporting opportunities, decreasing physical activity and reductions in teacher engagement, the authors interviewed stakeholders in order to better understand the educational value proposition of school sport. Drawing upon more than 600 interviews with young people, administrators, parents and coaches, the report addressed emerging concerns that New Zealand faced a 'tipping point' with respect to its status as an active sporty nation. Regarding the supposed educational benefits of sport, issues emerged with respect to the ways in which sport meets the needs of young people, relates to other learning areas in schools and connects to broader outcomes associated with the educational mission of schools.

> Sports are effective when they are open to moving beyond purely sport outcomes…they are also successful when they can adapt to the needs of the kids. (p.19)

Ultimately, an overemphasis on objective, predictive and data-driven decision-making may bias practitioners by ignoring the contextual realities they face. Kitchin (2014) noted how the quantitative imperative sacrifices "complexity, specificity, context, depth and critique for scale, breadth, automation, descriptive patterns and the impression that interpretation does not require deep contextual knowledge" (p. 8). This limitation stems from underpinning philosophical assumptions. Implicitly, the rise of big data and measurement culture includes an implicit assumption that the world can be broken down into constituent parts and separately analysed to produce hidden truths (Baerg, 2015; Osberg, Biesta & Cilliers, 2008; Stetsenko, 2008). In a discussion of knowledge management, big data and analytics, Snowden and Pauleen (2017) acknowledged the limits of inductive and deductive forms of reasoning (as employed in computer algorithms) when compared to the abductive reasoning that is unique to humans:

> I think there's a huge amount of value we can get from big data---but they're limited in what they can do. For a start, there are limitations to what can be written down, maybe 3 or 4 per cent at best. Then you've got the assumption that computer algorithms interpret facts the same way that human beings interpret them, which is dubious. (p. 12)

2.2 Complexity thinking as an alternative starting point

Considering the limitations associated with the quantitative imperative in sport (Andrews, 2008; Baerg, 2015; Beer, 2015; Hutchins, 2016), a need exists to shift the conversation from quantity to quality. For researchers, this means changing the philosophical starting point when investigating decision-making. Andrews (2008) noted how "ways of knowing associated with the active body/human movement are not the exclusive domain of the quantitative data-driven logical positivist" (p. 48). However, Meadows (2008) noted that change demands more than simply pointing out "the failures and anomalies in a paradigm," (p. 164) but also "speaking loudly and assuredly of the strengths of a new one" (p. 164).

Heeding such calls, this research takes complexity thinking as an alternative starting point for studying coach teaching and athlete learning. Embraced recently by some scholars of education, pedagogy and sport (Davis, Sumara & Luce-Kapler, 2015; Hopper, Ovens & Butler, 2013; Sumara & Davis, 2010), complexity thinking reflects a sensibility, or attitude, that "pays attention to diverse sensibilities without making claims to, or being trapped by,

universals or absolutes" (Ovens, Hopper & Butler, 203, p. 3). Capra and Luisi (2014) proposed eight central shifts that characterise this philosophical movement:

- Shift in perspective from parts to whole.
- Inherent multidisciplinarity.
- Shift from objects to relationships.
- From measuring to mapping.
- From quantities to qualities.
- From structure to process.
- From objective to epistemic science.
- From Cartesian certainty to approximate knowledge. (p. 79)

Distinguishable from hard complexity science (Davis & Sumara, 2010a), complexity thinking is not a formal theory, nor does it exist within a single discipline. Rather, complexity thinking entails "a sort of border crossing – a need to step outside the limiting frames and methods of phenomenon-specific disciplines" (Davis & Sumara, 2008, p. 35). Complexity thinking has received attention from similar fields, including management (Snowden & Boone, 2007; Tsoukas & Hatch, 2001) and education (Davis & Sumara, 2010a; Davis, Sumara & Luce-Kapler, 2015; Osberg, Biesta & Cilliers, 2008; Sumara & Davis, 2006).

Complexity thinking acknowledges a difference between complex from complicated systems (Snowden & Boone, 2007). Complicated systems, such as technological machines (e.g. computers, car engines), have linear relations between cause and effect that can be concisely traced, predicted and controlled. These systems are also referred to as closed, deterministic systems. Conversely, open systems (e.g. rainforests, school classrooms) have dynamic properties that cannot be precisely isolated, controlled or predicted for they emerge from the interaction of elements in the system. A wide range of phenomena have been described as complex systems, including schools (Johnson, 2008), cities (Wachsmuth, Madden & Brenner, 2011), geopolitical conflict (Dittmer, 2014)) and teacher teams (Davis & Sumara, 2010a).

Complexity thinking is increasingly being used to study human development and learning. Sen (2012) illustrated complexity thinking when comparing a school to a wine vineyard. Education, like winemaking, is not a straightforward process. According to Sen, "In the same winery, with the same recipe, unique wines come into existence each year. There is no standard or certain outcome. Making wine is a uniquely complex phenomenon" (p. 70). In comparing schools to wine vineyards, Sen encouraged educators to think of student learning as an emergent process that resists standardisation and central control while

being clearly shaped by one's surrounding environment. For instance, winemaking is subject to climate, particularly the unique combination of rain, soil and humidity. Next, the time for harvest will influence the acid, sugar and tannin of the grapes. During fermentation, temperature, yeast level and barrel material become especially important. Of course, even if these factors unfolded according to expectations there would be no guarantee for good wine because "anything can happen in the bottling process" (Sen, 2012, p. 69). Sunlight, cork quality, bottle position, access to air and storing time all still matter. Consequently, Sen notes that even accomplished winemakers cannot guarantee certainty of taste, for "the relationship of all the variables in the winemaking process [that] will determine the outcome" (p. 69).

From this complex perspective, coach teaching and athlete learning can take on new meaning. Like winemaking, performance does not occur in isolation from neighbouring systems of activity. Just as winemaking might involve such environmental dynamics as climate, time to harvest and fermentation, game play decisions are connected to systems and interactions that operate simultaneously above, below and beside on-court activity. Examples can include team strategy, feedback from others, previous learning, global trends, future aspirations, health, family resources and peer group influence. How these dynamics unfold cannot be fully explained or predicted for what emerges will always depend upon what interacts (Haggis, 2008).

2.2.1 Complexity of basketball decision-making

Shifting to a complex perspective has implications for understanding shot selection given the tendency to de-contextualise shot decisions and ignore neighbouring systems or emergent forms of interaction. If coaching and athlete decision-making do not occur in isolation from the environment (Grehaigne et al. 2005; Renshaw et al., 2009), scholars should re-frame decision-making as "situated in, and specific to, the local and specific circumstances of the game situations while being located in a socio-cultural context and shaped by the decisional background (Light et al., 2014, p. 261). In this section, I elaborate on how a complex orientation has influenced scholarly understanding of decision-making in team sport. This begins with an emphasis on the nonlinear dynamics of invasion games and expert decision-making. In so doing, I highlight the need to understand decision-making as a dynamic, embodied, social and situated process.

2.2.1.1 Basketball

A complex view of basketball decision-making exists in the recent application of systems

logic to the study of invasion games (Chow, 2012; Glazier, 2010; Grehaigne et al. 2005). Here, the dynamics of game play have been theorised as self-organising systems with interacting elements that produce rich and diverse patterns of behaviour (Balague, Torrents, Hristovski, Davids & Araújo, 2013; Garcia, Ibañez, Canadas & Atuñez, 2013; Glazier, 2010; Grehaigne & Godbout, 2014; Grehaigne et al., 2005). Therefore, the dynamic and collective nature of basketball means that numerous factors constantly interact to produce unpredictable patterns of movement.

As an invasion team sport, basketball presents a unique set of task constraints. In a comprehensive review of teaching and learning for invasion games, Grehaigne et al. (2005) employed systems thinking to explain the oppositional relationship between two competing teams. Like most invasion games (Table 2), basketball is a struggle for territorial dominance (Brakenridge, 1979; cited in Grehaigne et al., 2005); that is, a confrontation between two opposing teams with competing interests. Primarily, scoring requires that an offensive team attack or invade the opponent's territory through manipulation of an object, the loss of which can result in immediate change of possession.

Table 2. TGFU Games classification (adapted from Butler & MacCahan, 2005)

Target	**Striking/Fielding**	**Net/Wall**	**Invasion/Territorial**
Archery	Baseball	Badminton	Basketball
Billiards	Cricket	Squash	American football
Bowling	Softball	Table Tennis	Team handball
Croquet	Kickball	Tennis	Hockey (field, ice)
Curling		Volleyball	Lacrosse
Pool		Handball	Netball
Snooker		Paddleball	Rugby
		Racquetball	Australian Rules Football
			Soccer (Football)
			Water polo
			Ultimate Frisbee

Importantly, basketball demands that players and coaches continuously manage four interrelated dimensions of play; opposition to opponents, cooperation with teammates, attack on the opposing team's camp, and defense of one's own camp. The configuration of players can be viewed from different scales at any given time, such as moving from two teams (5 on 5), to two sub-groups (2 on 2) or two specific players (1 on 1). As athletes develop ways to makes sense of these dynamics they become increasingly "capable of initiatives that each teammate can decode, react to accordingly or can even anticipate"

(Grehaigne et al., 2005, p. 24). Grehaigne and colleagues understood this capacity as a "double dimension of a collective frame of reference" (p. 24).

A fluid and dynamic game, basketball presents broad strategic challenges for coaches and players. First, teams must coordinate offensively to make forward progressions into scoring zones. In basketball, advances are made via the pass or dribble and end successfully in either a made shot attempt or opponent foul. Unsuccessful possessions typically end in a turnover or missed shot attempt. Defensively, players challenge offensive advances by bringing forward obstacles that slow or stop forward progression, such as placing one's body in the path to the basket or placing two defenders on a single ball carrier. Second, players manage information bi-directionally by both producing uncertainty for the opponent and also reducing uncertainty for their teammates and coaches. For instance, offenses often introduce uncertainty through an element of misdirection, such as when using an initial play to occupy two defenders on the near side of the court before switching to the far side and taking advantage of open space. In contrast, team defence can confuse an opposition team by changing their strategy unexpectedly, such as when shifting from man-to-man to zone defence after a timeout.

To formalise their strategies, teams develop systems of play (Teodorescu, 1956; cited in Grehaigne et al., 2005). A system of play is a form of organisation that structures specific actions in relation to the broader strategy:

> The general form in which players' offensive and defensive actions are organised by establishing a precise arrangement of certain tasks in relation to position and field coverage and certain principles of cooperation among them. The system of play is the basic structure of team tactics. (p. 8)

Systems of play establish a basic relationship between player positions, configurations of play and tactical rules for action. In this sense, systems formalise the synergy between tactics and strategy. Tactics refer to actions that occur "during the game by the players to adapt to the immediate requirements" (p. 29) while strategy reflects performance decisions that organise tactics but are made away from the immediate requirements of play. Tables 3 and 4 outline tactics common to invasion team sports. Grehaigne et al. (2005) suggested that players perform tactics when they execute operations that "adapt to the immediate requirements of an ever-changing opposition, their spontaneous actions, or those organised through the predetermined strategy" (p. 36). With respect to basketball, Keidel (2014) identified a dialectical partnership between decisions made in the flow of play and those made upon reflection, detached from the immediacy of the game.

Table 3. Offensive action rules in invasion team sports (Grehaigne et al., 2005)

Keeping the ball	Playing in movement	Creating space	Creating uncertainty
Protecting the ball (using one's body as an obstacle)	Reducing the time used to bring the ball into the scoring zone and shoot	Using the depth and width of the field	Keeping the alternative direct play/indirect play
Keeping the ball away from the opponent and close to oneself	Moving when space is free	Locking the defence in one zone and playing in another	Luring opponents into one zone to conclude in another
Directing passes into space behind the defender and in front of the attacker	Creating passing angles	Alternating direct play, indirect play, short passes and long passes	Increasing the number of players involved in the action
Moving to be at passing distance, seen by the ball owner and away from the defender	Passing the ball ahead of the receiver	Locking opponents to free some partners	Faking or combining the change of rhythm, space and orientation
	Favouring instantaneous passes	Changing direction of play	
	Continuous movement after having released the ball		

Table 4. Defensive action rules in invasion team sports (Grehaigne et al., 2005)

Defending the target	Regaining possession	Challenging opponents
Putting as many players as possible between the ball and target	Recovering the ball as close as possible to the opponent's goal	Reducing number of receivers
Reinforcing and covering constantly the axis of the goal	Increasing the numerical density in the middle of the field and the attack area	Keeping attackers and ball in view
Organizing the team along lines of strength	Impairing progression	Impairing the opponent through one's placement and movements
Putting the attack off centre, towards the outskirts	Challenging every opponent	Faking to trick one's opponent
Moving the ball away	Looking for the interception	Reducing time, space and options
Covering one's partners	Putting immediate pressure on the player with the ball – harassment	Modifying rapidly one's defensive system to adapt it to the game
Preventing shots	Positioning oneself on likely ball trajectories to isolate the ball carrier from his or her teammates	Keeping attack away from the target
		Spotting the favourite sector of one's direct opponent's actions
		Reducing the effective space available to one's opponent
		Delaying the attack whenever the defenders are outnumbered

2.2.2 Expertise in athlete decision-making

When navigating basketball's nonlinear performance landscape, expert performers do not predetermine plans of action. Instead, skilful decision-makers conceive of solutions in the flow of play given that unforeseen events produce a dynamic problem to continuously interpret the game as it unfolds (Ovens & Smith, 2006). Grehaigne et al. (2005) noted how skilled performers flexibly navigate an unpredictable environment by managing "disorder before anything else, while preserving order and thus allowing decisions in a not completely *a priori*, foreseeable environment" (p. 16). In this respect, expert decision-making involves reading the game then selecting the most appropriate option under the pressure of game play (Baker, Côté & Abernethy, 2003). Grehaigne et al. (2005) emphasised the situationally determined and emergent nature of skill. For example:

> [A] player's practical efficiency must be flexible to adapt to constant, varying game situations. Instead of developing one model that will constitute a norm for his or her game play action, a player should focus on the flow of play and the play configuration at hand to detect its coherence and to profile its evolution. One has to detect favourable factors within a given configuration of play and base oneself upon the situation's potential to try and take advantage of it. (Grehaigne et al., 2005, p. 35)

Similarly, ecological psychology (Gibson, 1986; Renshaw et al., 2009), understands skill as a process of solution finding that depends upon the ways in which individuals detect affordances in the environment. Affordances refer to opportunities for action that become available as the athletes explore a perceptual-motor landscape that is shifting and evolving. According to Renshaw et al. (2009), a mutual relationship exists between information and movement in that "information drives movements, but movements also influence what information can be picked up by performers" (p. 9). Said another way, performers both actively construct and are constructed by the environment (Araújo, Davids & Hristovski, 2006; Davids et al., 2013). From this nonlinear perspective, the individual and environment are a relationship rather than separate phenomena.

Drawing on the work of Newell (1986), scholars have highlighted the person-environment relationship by emphasising three key constraints: 1) organismic/individual; 2) environmental; and 3) task (Chow, 2013; Glazier, 2010; Renshaw et al., 2009). Crucially, it is the unpredictable interaction of the person, their environment and the task at hand that "direct the learner to seek out functional behaviours" (Chow & Atencio, 2012, p. 10). Constraints represent conditions that limit what a system can do while also opening possibilities for alternative actions (Ovens, et al., 2013). According to Renshaw et al. (2009), constraints lead to instabilities in learners that coaches should continuously

monitor. For example, height and levels of fatigue represent structural and functional constraints of the athlete that will partly shape the option to shoot. At the same time, the constraints of the task at hand set structural boundaries of the problem situation itself, including the distance of defenders, configuration of players on the field, rules of play, time on the clock, playing area dimensions, and equipment (Chow 2013; Renshaw et al., 2009). Finally, the performance environment can constrain opportunities for action through such features as surface stability or degree of crowd noise.

2.2.3 Emergent and reflective decision-making

Importantly, the complexity of athlete decision-making manifests in the interplay of conscious awareness and subconscious habit. Phenomenological studies suggest that athlete decisions can occur with and without conscious awareness. Mouchet's (2005) investigation of a professional rugby ball carrier's passing-and-running decisions revealed this duality. When the ball carrier arrived at a decisive moment in the scoring zone, his attention had both global and local aspects concerning the situation. This included attention to the strength balance between the teams as well as the sudden appearance of a defender wishing to tackle. When asked to reflect upon his decision, the athlete articulated both a reflective 'thoughtful' consciousness and an emergent, direct consciousness. Reflective decisions occurred when the player was further from action and had more time to reflect consciously upon play. A player can make reflective decisions in play while reading the configurations of the defence and deliberately changing his/her orientation in relation to the situation. For instance, when a player is advancing the ball up court against a set defence, he/she can recognise that the defence has changed from a man-to-man to a zone and then respond appropriately by signalling to teammates to change their offensive configuration.

At the same time, embodied 'at-action' decisions occur independent of conscious awareness (Light, Harvey & Mouchet, 2014), based in instinct and enacted in the split-second moments of the game. For instance, an emergent decision in basketball occurs when a shooter contorts his/her body in the air to elude an oncoming defender. Mouchet and colleagues understood this as an intrinsic form of knowledge where history with teammates, prior experiences in similar situations, preferences and customs thread together in nonlinear and idiosyncratic ways to produce action that is not consciously controlled. Mouchet (2005) explained:

> A powerful hooker...operates on a quickly played penalty, a strategic decision which seems almost conditioned by his preferences for physical challenge ("personally I like to challenge defence, it is my way"), as well as a mentality predisposed to the fight ("I want all the time to cross the defensive line in my head"). (p. 32)

In emphasising decision-making as a process that can occur without conscious reflection, scholars reject the notion that decisions in play can be reduced to the conscious rationality of a brain inside the skull; what Smith (2013) referred to as "internalised abstractions of the external environment" (p. 268). Instead, decisions can emerge without conscious reflection and as a result of an athlete's exploratory movements (Araújo et al., 2006; Renshaw, et al. 2009). Such views challenge the mainstream tendency to distinguish motor skills from decision-making, with the former belonging exclusively to the coordinated movement of the body while the latter is associated with cognitive functions of the brain.

The association of brain with mind, and the subsequent separation of mind from body and world, perpetuates a premise that the body is simply a tool of the brain and that individual minds operate in isolation from complex social and historical environments (Hutchins, 2014). Such an assumption underpins Chotiner's (2019) off-hand comment that shot selection can be reduced to common sense. When narrowly attributing decisions to the brain, issues pertaining to the body, emotion, context and history tend to be ignored, dismissed and marginalised. In particular, usage of the computer-brain metaphor has reinforced attempts to compartmentalise, fragment and separate brain from body and world (Hutchins, 2014).

Segregating tactical learning from movement techniques can reinforce a separation of mental and physical. Ovens and Smith (2006) expressed this concern when they argued that "cognition is given primacy over action…the mind, expressed in its various capacities to think, reason, understand and know, assumes dominance over the body whose role is to perceive cues and affect action" (p. 74). Whereas cognitive psychology draws a distinction between the inner and outer realms of human cognition, ecological psychology fits within a family of theories that understand cognition as existing neither in the world nor in the self-contained individual but at the intersection of the two (Stetsenko, 2008). Here, cognition is a process deeply coupled between brain, body and environment. In this reconceptualisation, cognition becomes a whole-body process. While the brain is a structure implicated in much of cognition, it is not the only structure.

In acknowledging a relationship between its conscious and subconscious aspects, decision-making emerges as complex phenomena. Particularly, the embodied nature of decision-making suggests that knowledge is expressed in action and decision-making is distributed through the environment (Mouchet, 2005). For example, a basketball player's jump-shot includes not only the motion of the release, but also the coordination of balance, explosion and arm strength with the quality of the shoes – which ensure a hard stop and quick elevation. In this frame, decisions are enacted through a tightly coupled relationship between technique, physical disposition and equipment that is uniquely assembled and not pre-programmed (Ovens & Smith, 2006).

2.2.4 Skill as situated practice

In acknowledging the embodied decision, Mouchet (2005) also identified the relationship between the personal game logic of a player and the situation of the team. Mouchet (2005) emphasised how experiences, trust in teammates and personal preferences contribute to the emergence of possibilities for action:

> This logic expresses itself according to subjects, by a more or less strong mobilisation of certain aspects of the decision-making background: faiths on partners and opponents, common marks, previous experiences in this situation category, player customs and preferences. (p.31)

Mouchet alludes not only to the immediate game dynamics, but also to the customs and prior experiences that make up the current situation of the game and team. Critically, it is the interaction of a player's personal game logic with the team's collective strategy, player preferences and the current moment that create a set of totally unique conditions for decision-making. On this basis, Mouchet (2005) theorised the situated nature of decision-making when arguing that a "decision constitutes a practical fulfilment, situated in a peculiar context because circumstances are never identical (sore, tiredness, players in presence, personal purposes…)" (p. 25).

The interrelatedness of interpersonal dynamics and individual reflection with emergent action suggests that shot selection cannot be viewed monodisciplinarily. Instead, shot selection warrants attention as a transdisciplinary phenomenon. Ovens and Smith (2006) asserted a relationship between learning and the sociocultural conditions of the environment when they stated that "skill is a specific form of competency inseparable from its context" (p. 75). Therefore, what is considered skilful depends on features of that situation. As elaborated by Ovens and Smith (2006):

> The act of shooting a basketball will always be situated as either 'shooting with friends,' or 'practice' or as part of a 'game.' In fact, the very act of throwing a ball at an elevated ring is meaningful because it is situated as one of the practices of basketball. (p. 75)

In this respect, an inseparable relationship exists between individuals and collectives in learning (Lave & Wenger, 1991). In a study of Danish under-18 footballers, Christensen, Laursen and Sorensen (2011) examined football as a situated activity "that concerns not only the specific skills to be learned by the players but also – and perhaps primarily – the experience of meaning and identity formation in the players participating in the ball game" (p. 164). These authors noted that the ways in which the athletes participate in the community of the club is "influenced by the actual physical and social organisation of practice" (p. 164). Similarly, Light and Nash (2006) compared four young people's experiences in a surf club to their experiences in sports clubs and school. The authors found that by studying learning outside of the context of traditional institutions, learning becomes connected more to the social practices of the club. Membership in the surf club involved more powerful forms of human growth compared to the school, such as "becoming a member of the adult world" (p. 91), by being given responsibilities as lifeguards and for patrolling, teaching and mentoring children in the community.

2.2.5 The complexity of athlete decision-making: A summary

Recent advances in the study of decision-making, skill acquisition and athlete learning provide theoretically grounding for a complex view of shot selection in competitive basketball. More than the simple application of a schematic or data-driven insight, shot decisions will depend, in part, upon how individual, task and environmental constraints interact to shape opportunities for action. In this nonlinear process, decisions can unfold without conscious awareness. While athletes do engage in reflective forms of decision-making in the course of play, decisions also unfold in split-second moments through a personal embodied logic. By implication, decisions cannot be reduced to a rational cognitive process. Instead, decisions are distributed across a tight coupling of the brain, one's body and equipment. Moreover, decisions do not occur independently of one's community, particularly in team sports where athletes identify with group norms and decisions tacitly represent membership in a group.

2.3 Acknowledging the complexity of decision-making in pedagogy research

In presenting shot selection as a complex phenomenon, the previous section foregrounds the need for researchers to explore implications for the teaching and learning process. As

a field, sport pedagogy increasingly acknowledged the nonlinearity of decision-making and explored changes in coaching methods (Renshaw et al., 2009). In the following section, I review the evolution in this body of work. I begin with a broad overview of sport pedagogy, including traditional conceptions of the role of the coach in decision-making. I then discuss athlete-centred coaching, a challenge to traditional coaching characterised in part by efforts to develop independent decision-making (Kidman, 2005; Kidman & Lombardo, 2010). More recently, scholars of nonlinear pedagogy explicitly ground task designs in motor learning principles that emphasise emergence, representativeness and the coupling of organism and environment (Renshaw, et al. 2009)

2.3.1 Pedagogical methods for developing decision-making

Jones (2006) described coaching as a practice that depends upon the teaching-learning interface and the myriad ways that coaches influence athletes to develop and improve. Field studies of coaching behaviour have suggested that instruction is the dominant act engaged in by coaches at all levels (Hodges & Franks, 2002; Protrac, 2000; cited in Jones, 2006). Even for top-level coaches, instruction and facilitation play a large role in coaching (Jones, Armour & Potrac 2004; Kidman, 2005). In this respect, pedagogy may rest at the heart of the coaching process (Cassidy, Jones & Potrac, 2009; Jones, 2006; Jones, 2007).

Watkins and Mortimer (1999; cited in Cassidy et al., 2009) defined pedagogy as “any conscious activity by one person designed to enhance learning in another” (p. 17). Penney and Waring (2000) offered a similar but expanded description:

> Our pedagogy, or pedagogical stance, shapes our actions in every dimension of our teaching, including the aims that we choose to pursue and prioritise, the activities, skills, knowledge and understanding that we privilege in curricula and lessons, the teaching approaches that we adopt, the relations that we seek to establish with pupils, the learning that we are concerned to develop, and that we recognise and value. (p. 6)

In this respect, it is more appropriate to consider pedagogy as a process, rather than an act (Lusted, 1986; in Cassidy et al., 2009). Because there are many ways to teach and things to learn, students learn from the formal and overt as well as the informal and covert. In this way, pedagogy emerges from a range of actions, including the design of activities, the nature of feedback, beliefs about the nature of ability, the content of communication, the relationship between player and athlete, and more. These elements constantly interact to create an integrated pedagogical process. Therefore, pedagogy may not always be intentional. Without always knowing it, coaches may exhibit an action, idea or behaviour that influences player learning.

Notably, affirmations of pedagogy in sport bring coaching into conversation with teaching. Bergmann-Drewe (2000) suggested that traditional conceptualisations of teaching and coaching unfairly distinguish the two on the basis that teaching reflects an effort to connect learning to a wider system of beliefs while coaching has historically emphasised domain specific training. Essentially, the dominant discourses of physiology, psychology and biomechanics associate coaching with training given the emphasis on specialised knowledge and the sequential attainment of physical skills tested in competition. Traditionally, the field of motor learning conceptualised skill learning as a matter of error correction as one acquires and transfers an optimal movement pattern (Macdonald, Kirk, Rovegno, Brooker & Abernathy, 1994; cited in Ovens & Smith, 2006). In this frame, a correct pattern or technique existed and the athlete's role was to replicate those patterns determined by the coach, as prescribed. In the traditional approach, learning was the passive transmission of knowledge from coach to athlete (Butler, Storey & Robson, 2012).

2.3.2 Athlete-centred coaching

Inspired by the introduction of humanist ideals in sport (Kidman, 2001; Lombardo, 1987), a movement within coaching challenged the traditional coaching model by pushing coaches to approach the learner as a social being with emotions and feelings who participates in a world outside the learning activity. In this vein, Jones (2006) suggested that scholarship on coaching should make a more concerted effort to connect coaching and teaching because "more than at any time in history, coaching and teaching can now be viewed as more similar than different" (Jones, 2006, p. 27). Akin to similar trends in education (Gidley, 2010, 2012), coaches were encouraged to take a long-term view that emphasised play and discovery over immediate performance. Light, Harvey and Mouchet (2012) adopted such a holistic coaching approach to improve decision-making, including the "need to focus on the game as a whole entity, where players, individually and collectively, attempt to manage disorder in the face of an opposition" (p. 258). Such an emphasis coincided with a greater recognition of the person-environment relationship (Balish & Côté, 2014; Cassidy et al., 2009; Côté & Gilbert, 2009; Fraser-Thomas, Côté & Deakin, 2005; Kidman, 2001, 2005; Kidman & Lombardo, 2010; Lombardo, 1987).

An athlete-centred coaching style was understood to support independent decision-making by making athlete learning and development a central objective over game outcomes. Recommended methods emphasised empowering learners to resolve situations on their own rather than through direct coach instruction (Kidman, 2005, 2011). This development

challenged traditional views of teaching and learning in sport (Butler et al., 2012; Jones, 2006; Mageau & Vallerand, 2003) by re-structuring the relationship between coach and athlete. Coaches were encouraged to view their practice as an interpersonal relationship between people (Lombardo, 1999).[5] Using a symmetrical and non-dominated discourse (Cassidy et al., 2009), coaches were encouraged to approach athletes as knowledgeable and creative beings able to think for themselves. In this way, coaches could value the personal knowledge of the athletes, building on what they know and integrating it into their coaching. This form of coaching required a shift in focus from the coach to the player.

Pedagogically, coaches were encouraged to place the athlete's understanding at the centre of the coaching process (Kidman, 2001; 2005; Kidman & Hanrahan, 2011). Principally, this occurred by moving away from traditional methods of direct instruction and rote drilling (Butler & Griffin, 2010; Grehaigne et al., 2005; Harvey & Jarrett, 2013). Vygotsky (1972) questioned the effectiveness of direct instruction, a methodology that resulted in a superficial level of understanding. Instead, proponents of athlete-centred coaching argued for an approach built around strategically modified games and open-ended questioning. Common manifestations include Teaching Games for Understanding (TGfU) (Griffin & Butler, 2010), game sense pedagogy (Pill, 2014) and tactical learning games (Grehaigne et al., 2005). The focus on understanding was believed to support an athlete's ability to make decisions without direct instruction (Kidman, 2001; 2005). Motivational research into autonomy-supportive coaching (Mageau & Vallerand, 2003) complimented this work by encouraging coaches to provide choices and rationales, acknowledge feelings, provide opportunities for initiative taking, use non-controlling feedback and avoid overt control.

2.3.3 Game-like situations, representative design and nonlinear pedagogy

Nonlinear principles build on previous imperatives in coaching research. A recurring point of emphasis in sport pedagogy is to teach decision-making through game-like situations that have relevance for competition (Kirk & McPhail, 2002). Grehaigne et al. (2005) argued that the authenticity of the learning task is what makes it situated, for "legitimate peripheral participation is intended to convey a sense of authentic, meaningful and purposeful participation" (p.161). In this respect, nonlinear pedagogy shares some athlete-centred values. Using TGfU as a pedagogical benchmark, Renshaw, Araújo, Button, Chow et al.

[5] On this point, recent scholarship reveals that the quality of the interpersonal relationship between player and coach plays an essential role in athlete performance and motivation (Jowett & Poczwardowski, 2007; Mageau & Vallerand, 2003)

(2016) argued that a Constraints Led Approach (CLA) shares a commitment to holistic skill acquisition, accommodating individual differences, coaching in a hands-off way and using game forms that allow athletes to “explore and solve game-based problems” (p. 468).

In taking an explicitly nonlinear perspective, Renshaw et al. (2009) articulated the motor learning principles that underpin a constraints-led approach (CLA) to pedagogy (Table 5). From this nonlinear perspective, a core aim was to facilitate transfer of learning from training to competition. In order to facilitate transfer, coaches must understand the performance demands of their sport then design tasks in training that are representative of them (Araújo et al., 2006). Renshaw et al. (2009) encouraged coaches to facilitate transfer by manipulating task conditions, such as court size, location of defenders and time on task, so that they may “adequately replicate the performance environment” (Pinder, Davids, Renshaw & Araújo, 2011, p. 148).

Table 5. Nonlinear pedagogical assumptions for coaching (Renshaw et al., 2009)

No.	Nonlinear pedagogy principle
1	The mutuality of the performer and the environment
2	Perception and action are coupled
3	Performance emerges as a consequence of the interaction of individual (and team constraints)
4	Performance development is a nonlinear process
5	Variability is essential to the development of performance
6	The individual is the focus
7	The team as an open dynamical system
8	Coaching is a balance between maintaining stability versus creating instabilities
9	Co-adaptive moves: Implications for practice
10	Encouraging creativity in learning and performance
11	What do we mean by natural learning (implicit?)
12	Blocked versus random practice; An ecological explanation

Importantly, representative design demanded tasks that allow “functional movement behaviours to emerge” (Pinder et al., 2011 p. 150). Rather than provide individuals with prescribed movement behaviours to reproduce under the guidance of the coach’s expert knowledge, coaches can instead manipulate the constraints of a task in ways that lead individuals to find a movement solution on their own. To illustrate this nonlinear approach, researchers frequently contrast static drills from dynamic tasks, such as when using immobile equipment (cones, dummies) in place of live bodies. For example, Pinder et al.

(2009) studied the difference in movement responses when facing a batting machine versus a live bowler in cricket and found that the removal of the bowler limited the batter's ability to pick up key information. Specifically, removing the bowler resulted in less pre-release kinematic information of the bowler's actions and led to delayed movement initiation times. Conceptually, it was theorised that the live bowler has greater potential to facilitate transfer of performance because the task included higher fidelity. Drawing upon the notion of action fidelity, it was argued that a degree of association exists between the experimental task and the intended performance setting.

Importantly, nonlinear principles have been applied to study of decision-making in team invasion games. In the context of rugby union, Passos and Araújo (2008) identified a tactical problem and detected action possibilities then built an action model before building a training exercise. The goal of the exercise was to improve the quality of their decision-making by allowing players to explore multiple options. The exercise facilitated learning through an intentional manipulation of rules, field dimensions, player starting positions and player numbers.

Importantly, scholars of nonlinear dynamics identified important differences between a constraints-led approach (CLA) and game-centred approaches in physical education and sport. Renshaw et al. (2016) proposed that CLA does not specifically share a goal of fostering intrinsic motivation in participants, nor improving understanding. Instead, CLA aims simply to "achieve the task outcome goal" (p. 470). Moreover, Renshaw et al. (2009) argued that game-centred approaches locate learning "in the mind (or in the brain)" (p. 470). In contrast, CLA focused on changes in the individual-environment relationship. In particular, the authors focused narrowly on the coupling of perception and action while patently rejecting any explicit link between CLA and a constructivist view of learning. This includes a view that asking questions was not inherently necessary to facilitate learning. According to Renshaw et al. (2016), questions were but one of many possible constraints on learning:

> This type of verbal approach merely forms just another possibility, amongst many others, to constrain emergent learning behaviours (including no reflection at all, e.g. how much reflection does a child need in satisfying the constraints of gravity when changing from crawling to standing to bipedal walking during upright stance and locomotion?). (p. 471)

2.4 Expanding the boundaries of pedagogy research

Despite a growing body of research that acknowledges the complexity of decision-making,

a need exists to expand the boundaries of research. In order to link an emergent, situated and nonlinear view of decision-making to contextualised study of shot selection, researchers need a practice-oriented perspective that includes more than coaching methods in training. Currently, nonlinear pedagogy remains narrowly focused on perception-action dynamics and task design in training. This makes the approach limited in its ability to understand shot selection as a problem linked to history, prior experience, interpersonal relationships and on-going socio-cultural dynamics. On this point, Smith (2013) argued that nonlinear theorising would benefit from more explicit consideration of the relationship between decisions, reflection and a changing social environment:

> The introduction of dynamical systems theorizing has broadened our understanding of skill acquisition, but dynamical systems research is still very much focused on internal body systems. As such, it does not readily serve to explain the broader physical and social dynamics of the situated contexts involved in our typical physical education lessons. When confined to the examination of the internal systems, research within the broad field of human movement tends to separate the analysis of movement and the physical body from the embodiment of skilfulness because it too often fails to recognise the relational properties that exist between performers and their social as well as their physical setting. (p. 266)

Smith challenged an overemphasis in nonlinear pedagogy on non-conscious decisions. Because decisions are expressed through actions, the dynamics of conscious thought and intentional human action receive comparatively less attention in nonlinear pedagogy. In particular, Smith saw a gap in the field and asked, what is the place and nature of conscious goal-seeking behaviours in this nonlinear, self-organising process? Stetsenko (2008) similarly challenged the tendency of some ecological theorists to narrowly understand learning and development as a strictly implicit process. This included scholars of ecological psychology (Gibson, 1986) and enactivism (Varela, Thompson & Rosch, 1993). Specifically, an overemphasis on the implicit can render invisible how individuals make meaning and exert human agency.

In order to investigate shot selection in practice, a need exists in pedagogy research to build on nonlinear understanding while expanding the boundaries of investigation beyond task design and perception-action dynamics. A similar concern exists in education research. Doll and Trueit (2012) asserted the need for contextualised studies of the teaching and learning process. Rather than learning being linked to a specific teaching approach *per se*, the control of education resided “in the situation itself, inherent in the activity of people doing, sharing and reflecting together” (p. 86). Drawing on Dewey, Doll situated teaching and learning within a broader problematic situation where teachers support learners in the process of solving authentic problems. Through such an approach,

teaching and learning could be productively understood as a collaborative “journeying with others on a path of learning engagement and personal transformation” (p. 97).

In effect, Doll and Trueit (2012) called for a de-centring of method in the study of teaching and learning. In a reflection on research in education, Doll and Trueit (2012) noted the tendency in educational research to make method the major focus of teaching and challenged the temptation to seek methods that are pre-set and prescribed. With respect to sport coaching, Rink (2010) raised similar concerns. While games-centred approaches have clearly advanced the field, Rink argued that pedagogical models often become recipes that limit the “learning experiences of the student” (p. 37). Moreover, the dichotomy of rote-drilling and modified games contributed to moral judgments for those who do not follow the model. Rink suggested, “the literature seems to infer that anyone who uses a technique model believes in a factory ideal of education and mind-body dualism and values performance rather than thinking and making decisions” (p. 37).

Like education, a tendency exists in coaching research to seek “positive improvements through identification and prescription of best practice methods” (Jones & Wallace, 2005, p. 123). Such knowledge-for-action research leads scholars to pursue evidence-based improvements in practice without understanding the phenomenon in depth. Even if the methods under study are underpinned by valued assumptions, such research remains limited as a tool for guiding coaching without appreciation for the context of implementation. In this respect, researchers can do more to capture teaching and learning dynamics as situated (Cushion, 2006: Jones, 2006; Jones, 2007; Jones et al. 2014; Jones & Wallace, 2005).

2.4.1 Coaching as orchestration

Orchestration offers a path forward for investigating the shot selection in relation to coaching practices, the broader problematic situation of a team and the socio-cultural environment. Acknowledging a need to relocate the coaching discourse away from recipe-like formulas and best-practice methods, orchestration reinforces a complex, social and situated understanding of the coaching process (Jones & Ronglan, 2018; Jones & Wallace, 2005; Sophia, Jones & Mesquita, 2013). Jones and Wallace (2005) originally defined orchestration as:

> A coordinated activity within set parameters expressed by coaches to instigate, plan, organise, monitor and respond to evolving circumstances in order to bring about improvement in the individual and collective performance of those being

coached. (p. 128)

Orchestration makes visible an image of the coach as stage manager, unobtrusively steering a changing situation over which he/she has only limited control. In this “humble process of incremental coping” (Jones & Wallace, 2005, p. 128), the coach must learn how to manage “relative uncontrollability, incomprehensibility, contradictory values and novelty as normal parts of everyday life” (p. 128). Jones and Ronglan (2017) called on coaches to embrace paradox given that mixed messages, opposing perspectives and conflicting demands were “immanent and intrinsic to coaching” (p. 910). This meant seeing paradox as a potential opportunity for learning and development within a team. Jones and Ronglan (2017) called on coaches to “maintain and hold [paradox], in order to preserve the creative tension and uncertainty it provides” (p. 910).

In response to criticisms of orchestration, Jones and Ronglan (2017) noted that the concept does not reflect a purely relativistic position where anything goes in coaching. Instead, orchestration reflects the epistemological attitude that coaching cannot be a “wholly rational activity” (Jones & Wallace, 2005, p. 128). In this respect, notions of orchestration reflect something of a third space (Star, 2010) where coaches acknowledge the ambiguity and uncertainty inherent to the process while also acting intentionally to bring order to it.

Importantly, orchestration builds on complex sensibilities towards the coaching process (Cushion, 2007; Jones, 2007). Central to this movement has been illustrations of social, cultural and organisational constraints on coaching behaviours (Balish & Côté, 2013; Côté & Gilbert, 2009; Saury & Durand, 1998). In this respect, pedagogical complexity emerges from the collective interdependence over time for coaches, athletes and other key stakeholders. In addition to organising and facilitating the immediate coach-athlete environment, coaches interact with parents, athletes, staff and organisational leaders in the design, preparation and evaluation of the team. As these contexts interact and change over time, circumstances evolve. Cushion et al. (2006) defined this multi-layered process:

- The coaching process is not necessarily cyclical, but is continuous and interdependent.
- This process (and practice) is continually constrained by a range of objectives that derive from the club, the coach and the athlete.
- The process is a constantly dynamic set of intra- and inter-group relationships. These relationships are locally dialectic between and among agents (coach, player) and structures (club, culture), and are subject to a wide range of pressures.
- The coaching process is embedded within external constraints, only some of which are controllable.

- A pervasive cultural dimension infuses the coaching process through the coach, the club, the players, and their interaction. (p. 94)

Historically, the lack of conceptual clarity regarding the coaching process has led to a competition of 'importances' over the component that defines coaching (Cushion et al., 2006). Today, sport coaching receives attention as a multifaceted discipline made up of multiple interacting competencies (Cöté & Gilbert, 2009; Cushion, 2006; Lyle, 2018). Martens (1996; cited in Jones & Turner, 2006) argued that effective coaches need the pedagogical skills of a teacher, expansive technical know-how of their sport, the counselling wisdom of a psychologist, the training expertise of a physiologist and the administrative leadership of a business executive. In this sense, coaching involves more than an on-court transaction where athletes acquire sport skills. Rather, coaching is an interactive workplace with competing egos, hierarchical constraints, and opportunities (Cushion et al., 2006; Jones, 2007; Jones et al., 2004; Jones & Wallace, 2005).

Lyle (2002) contributed to this complex view in specifying the interdependent functions that make up the process of coaching. These functions included: 1) direct intervention; 2) intervention support; 3) contingency management, and 4) strategic coordination. Direct intervention involves purposeful activities for performance enhancement, including instruction, feedback, demonstration, rallying, observation, organisation and recording. Intervention support involves supporting and preparing athletes for direct intervention, including counselling athletes, managing data, planning practice and administrative duties. Contingency management reflects the management of situational factors that influence direct intervention and intervention support, such as training access, competition scheduling, funding, equipment and personnel. More broadly, contingency management involves interacting with external constituents, including parents, faculty and governing bodies. Strategic coordination integrates these functions.

With respect to how coaches approach athlete learning, orchestration reinforces some principles of nonlinear pedagogy. First, orchestration retains an impetus to see sport performance as an emergent feature of a person-environment relationship. Jones and Ronglan (2017) encouraged coaches not to manage away complexity but to instead appreciate how the coaching process is "contingent on many factors, including objectives, constraints and relationships" (p.911). The major difference is the lens through which researchers view this relationship. Whereas nonlinear pedagogy focuses on the level of perception-action, orchestration implies a focus on the socio-cultural level of interpersonal

relationships, emotions and intentional goal pursuits.

Second, orchestration reinforces a ‘hands-off’ style of coaching, representativeness in training and creating instabilities in learners (Renshaw, et al. 2009). When designing training, Jones and Ronglan (2017) understood orchestration as working through game scenarios in order to enable “transference between ‘situations like this’ to occur, whilst the relational nature of sporting performance within team games is respected” (p. 913). Through a rugby example, Jones and Ronglan (2017) described a principled approach that retains live offence and defence in situations that are common to match play. In these scenarios, the coach adjusts the conditions of the situation to both restrict and enable opportunities for action:

> What we try to do is to engineer a number of archetypal situations that players face in real-time games. The point is to make them recognise and subsequently excel in these typical situations. However, as no two situations or scenarios are ever identical, the prescription cannot be too tight; there must be room for athlete discernible judgment, which again is actively factored into the practice. (Jones & Ronglan, 2017, p. 911)

Jones and Ronglan reinforced the need to see such coaching decisions contextually, as coaches exercise “judicious discernment within the cloudy imprecision of practice” (p. 907). Considering the interdependencies that make coaching a fluid process, representative design may be coloured by socio-cultural dynamics. For instance, Santos, Jones and Mesquita (2013) found that Portuguese coaches differed in the intentions behind their use of game scenarios in training. While some valued game-scenarios and manipulating task constraints as ways to foster curiosity, others used competition in training to preserve players’ insecurity about their place in the team. Consider the following two examples from Miguel and Luis:

> When I want the players to learn something new, I firstly create in them some curiosity about it by presenting it through a specific game-problem. I create a game scenario where players apply this new concept under well-defined conditions. As the players get to better understand what is required, I remove some constraints (e.g., allowing more active opposition), so the players have to deal with more unstable situations. However, if they feel too much “openness” to take decisions, I go back and again impose some constraints to help them to understand the learning objective. I do it, going ahead and back, all the time, which creates for the players the conditions to learn the tactical concepts that they can later use autonomously, under pressure in real game situations. –Miguel (p. 269)

> Athletes can never think they have a place in the starting line-up; so, I try to put them up against other players in their positions in training. Sometimes this gives them the idea that the place will be theirs, although at other times it creates doubts

depending on the performance of the other. – Luis (p. 269)

Santos et al. (2013) captured how task design can mediate coach and player goals for the team. Whereas Miguel expresses a desire to instil curiosity and facilitate the learning of tactical concepts, Luis uses competition as a form of social control. Both responses speak to a struggle for power and agency. Whereas Miguel seeks to empower players through internal competition, Luis manipulates competition to assert his own authority over them.

2.5 Coaching shot selection: A constant negotiation

Findings from Santos et al. (2013) point to the ways in which orchestration can frame a study of shot selection and thus support a shift in the epistemology of coaching. Rather than reduce complexity to design decisions in training, orchestration expands the boundaries of research to include interpersonal, cultural and historical information regarding how and why decisions are made. In this respect, orchestration has the potential to humanise coach-athlete interactions by articulating how they unfold within a broader social situation that includes conscious motivations, power struggles and interpersonal relationships. For that reason, Jones and Wallace (2005) described orchestration as a framework that could "provoke thought about the nature of coaching and how we should view it" (p. 124). As part of an agenda to help coaches prioritise "the daily dilemmas they face and why" (p. 132), orchestration can potentially facilitate a more nuanced conversation about the conflicts, dilemmas and opportunities that coaches may encounter (Jones, 2016). For this reason, Jones and Wallace called for efforts to carry out research "framed by the notion of orchestration" (p. 132) across a variety of contexts.

Arguments from Jones and colleagues made orchestration valuable for helping coaches understand the pedagogical challenge of shot selection. As outlined in the introduction, shot selection in competitive basketball tends to be studied as a strategic matter and through quantitative methods (Chang, et al., 2014; Lucey, et al., 2014; Skinner, 2012). Driven by the rise of big data in sport (Baerg, 2015), mainstream shot selection research fits within the paradigm of objectivist science. Moreover, quantitative data-driven shot selection research has already impacted coaching behaviours and athlete decision-making. Popular evidence suggests that the insights produced from quantitative analyses are significantly impacting the strategic direction of teams around the world (Goldsberry, 2019; Quealy & Hoffman, 2019; Wilco, 2019). Given concerns about the relationship between data-driven findings and measurement culture in sport (Beer, 2015; Hutchins, 2016; Millington & Millington, 2015), a need exists to shift the paradigm in order to think

about shot selection holistically and contextually.

In this respect, orchestration served the broader aim to re-frame shot selection as a pedagogical matter grounded in complex social relations. Jones and Ronglan (2017) regard coaching as a constant negotiation that, within structural limits, involves directing and re-directing agency across training and competition. Implied in this work is a flexible disposition to maintain awareness to changing conditions, adapt to circumstances and understand what is (and is not) within the coach's control. According to Jones and Wallace (2005):

> Steering the coaching process through orchestration is thus evolutionary, flexible within limits, and as often unobtrusive as overtly directive. It operates as much by channelling athletes' agency through encouragement and incentives as by delimiting their agency through sanctions. It also includes continual close attendance to the athletes' individual and collective performance and motivation. (p. 129)

In the following section, I elaborate on orchestration as a framework for investigating shot selection in New Zealand secondary school basketball. Applied to competitive school sport in New Zealand, this discussion addresses notions that coaches "instigate, plan, organise, monitor and respond to evolving circumstances" (Jones & Wallace, 2005, p. 128). Specifically, circumstances can be understood as the pursuit of alternative goals, limits to control/awareness, the presence of contradictory beliefs and novelty of conditions.

2.5.1 Pursuing alternative goals in sport

Shot selection may depend on the ways in which sport participation is framed, including the overarching goals for joining and/or hosting a team. In this respect, the orchestration framework highlights the ways in which fluid goal conditions can make the teaching and learning process ambiguous (Jones & Wallace, 2005; Santos, et al., 2013). Specifically, the presence of multiple, often competing goals, presents coaches with dilemmas in how they approach their work with athletes. Sport organisations commonly position teams as entities that pursue achievement, development and/or participation. Invariably, Jones and Wallace (2005) suggest that coaches must prioritise some goals over others, "a hierarchy of priorities amongst goals has to be established where it is impossible to pursue them all simultaneously with the same vigour" (p. 125). For example, Kelly and Hickey's (2009) investigation of professional identity in Australian Rules Football (AFL) revealed how performance goals undermined an espoused goal of personal development:

> At the end of the day, they're here to play football. If they can do other things that's fine, but first and foremost they need to perform as footballers. I mean, they might

> be doing all right in a business or in a course, but if they aren't getting a kick they're going to come under pressure. Like all the [club] coaching staff, we're in the business of producing a successful football team and no matter what else we do, it's the success of our team that is going to judge us. (p. 40)

Goal divergence pervades New Zealand sport. Following a 1985 inquiry that deemed New Zealand far behind other western industrialised nations, the government instituted the Hillary Commission for Sport and Recreation to "develop and encourage sport and active living for all" (Pringle, 2001, p. 59). Achieving this mandate revolved around two primary goals: 1) to increase participation in sport, fitness and leisure, and 2) to achieve high levels of international sporting success. According to Sam (2017), the government's simultaneous concern for elite achievement and increased participation generated a nation-wide commitment to professional, modernised and commercialised national sport organisations. A dual aim existed to systematically develop a membership base at local and regional levels while simultaneously establishing elite programming pathways up to senior levels.

In taking a twin-track approach, New Zealand followed a global trend. The dichotomisation of elite and non-elite sport has become ubiquitous to how sporting institutions conceive of organised sport. Collins et al. (2012) noted how frequently sports governing bodies utilise this framework, arguing "almost all structures, systems and initiatives are built on this twin track approach, where competitive sport and (non-competitive) physical activity are seen as separate concerns" (p. 226). An example can be found in the New Zealand Community Sport Coaching Plan (Figure 1). The coaching plan suggests that foundation and development coaches should pursue learning and increased participation, respectively. In contrast, performance and high-performance coaches pursue performance and excellence, respectively. In school sport settings, the progression from junior to senior levels of high school implies a similar divergence. Whereas junior coaches are encouraged to orient their behaviour towards participant-focused development, senior level coaches are understood to orient themselves towards athlete-focused performance (Table 6).

Figure 1. The Community Sport and High-Performance Coaching Plans (Sport NZ, 2015)

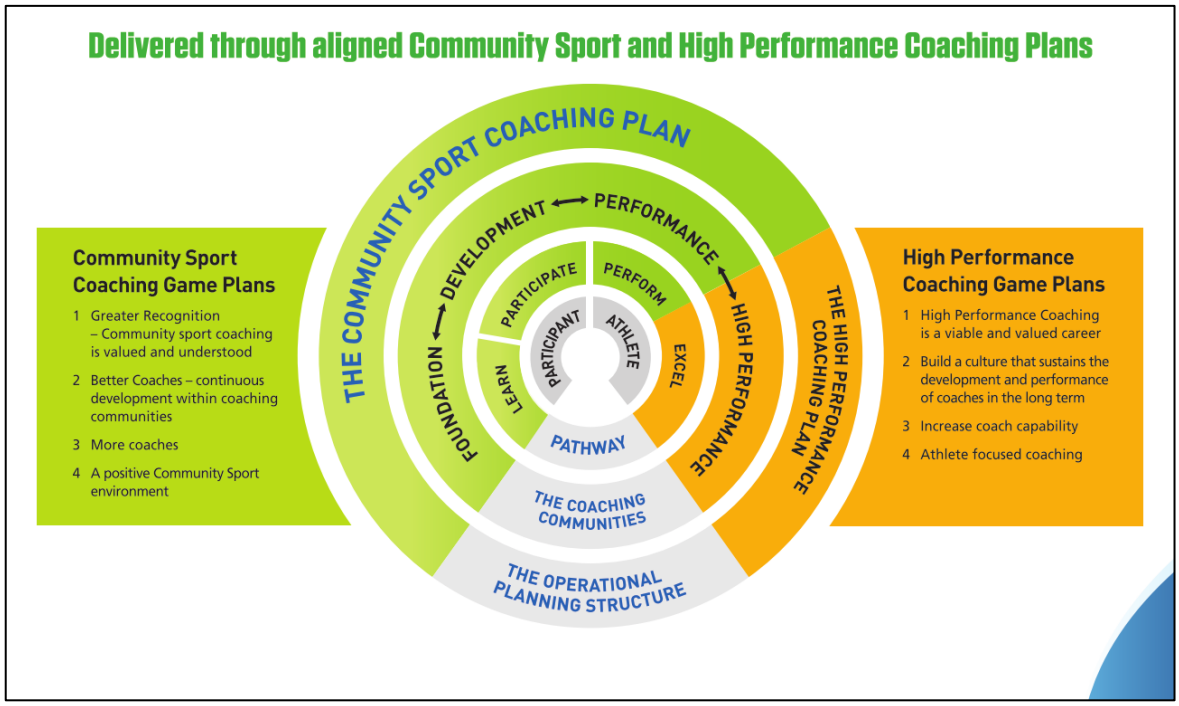


Table 6. Coaching communities serving secondary school sports in New Zealand (Sport NZ, 2012)

Participation-focused development coaches	**Athlete-centred performance coaches**
Nurture a love of multiple sports	Nurture a love of competing and being the best they can be
Focus on skill development and decision-making	Focus on skill development and decision-making in a competitive environment
Reinforce ethical approaches to sport and recreation	Help athletes develop a wider sense of sporting ethics
Provide for participant need and aspiration	Provide appropriate sequences, development opportunities and guidance

Performance goal orientations can reinforce coaching actions and tools that may thwart young people's motivational needs (Fraser-Thomas, Côté & Deakin, 2008; Lauer, Gould, Roman & Pierce, 2010). Current criticisms highlight an overemphasis upon winning and achievement (Andronikos, Elumaro, Westbury & Martindale, 2016; Côté, Lidor & Hackford,

2009; Côté & Vierimaa, 2014; Fraser-Thomas, Côté & Deakin, 2007). This literature highlights problematic rates of dropout, burnout and overuse injury in school-aged sport participants (Bergeron et al., 2015; DiFiori, 2010; Luke et al., 2011). These and other findings raise important questions about how participants negotiate conflicting goals. Sam (2009) argued that despite intentions to balance elite achievement and broad-based participation, national sporting organisations have over-emphasised elite results while ignoring or undermining grassroots and recreational streams.

Taken together, goal conditions in both basketball and secondary school sport warrant attention as constraints on the teaching and learning of shot selection. In the context of basketball, participation in New Zealand secondary schools rose dramatically in the last decade. As of 2016, basketball stood as the fourth most played secondary school sport in New Zealand with an 18 percent three-year growth rate and a six percent annual growth rate (NZSSSC, 2019). If such participation trends continue, basketball will become the most popular secondary school team sport in the next five years. Rising interest domestically coincides with a growth in basketball internationally. The competitive success of the New Zealand Breakers in the Australian National Basketball League (ANBL), and Steven Adams in the United States' National Basketball Association (NBA), contribute to growing enthusiasm in New Zealand (Anderson, 2016).

Considering the dramatic rise in participation, development has become an area of focus. This includes the need for consistent coaching strategies for the skill development of young players at the secondary school and representative association levels (Basketball New Zealand, 2012). Specifically, the national governing body has called for a renewed emphasis on player development, including attention to "improving the capability and skill level of players" (p.1).

In the context of schools, the impetus of school leaders to emphasise broad based participation frequently contrasts the competitive urge of others to win now (Sport New Zealand, 2015). Evidence suggests that these contradictions in the goals of sport can create tension for participants themselves (Mahiri & van Rheenen, 2010; Sperber, 2000; Van Rheenen, 2013). For instance, competitive high school athletes in New Zealand increasingly hide injury for fear of losing their place on the team (Whatman, 2017).

2.5.2 Contradictory beliefs and limits to control and awareness

Shot selection may depend on how participants understand themselves, the team and

their role in it. In this respect, the orchestration framework highlights the ambiguity that emerges from interpersonal differences in a competitive sport environment. Specifically, contradiction in beliefs stem from diverse backgrounds, experiences and value systems among a multitude of people. Among the players themselves, diversity in a team can exist with respect to age, position, role and areas of strength/weakness. Similarly, staff diversity includes managers, sports coordinators, medical staff, administrators and parents. In high performance and/or professional settings, staff can also include performance analysts, strength and conditioning coaches, video coordinators, sports information directors and equipment managers. In this diversity of priorities, conflicts emerge over how best to respond to events or structure training. For instance, Jones and Wallace (2005) discussed how beliefs can shape response to injury or the design of training:

> Slightly injured players may want to keep playing against impartial medical advice. Their motives may be to impress other watching clubs while their coaches' reason for selecting them may be to put their perceived 'best' team out. The managers meanwhile want the players not to play, so as to protect some of their biggest assets from further injury. Similarly, coaches, operating at a recreational level may adhere to an inclusive, 'fun' ideology whereas a few children attend because they genuinely want to improve their skills. Hence, they resent having to sit out while less enthusiastic and less talented children take their place. On the other hand, some children may not want to attend the practice at all, doing so only on their parents' insistence. (p. 127)

The presence of multiple subjects with contradictory beliefs and diverse perspectives reinforces the idea that coaches are but one of my many influences on athletes. Traditional conceptions of coaching position the coach as the autocratic centre of a young athlete's life (Frey & Eitzen, 1991; Lombardo, 1987). Historically, the organisational structure of a competitive team resembles a vertical hierarchy as coaches assume management positions at the top while athletes assume worker positions at the bottom. Kidman and Lombardo (2010) described how such arrangements locate power in the coaches' hands and lead to controlling methods.

Despite their position atop the social hierarchy of a team, coaches lack complete control of performance and knowledge of their players (Jones & Wallace, 2005; Readdy, Zakrajsek & Raabe, 2016). Young people participate in multiple settings simultaneously and thus have competing influences (Light & Nash, 2011). Peers, parents and significant others can impact motivation and thus alter decision-making. For instance, a large body of work acknowledges the influential role that parents play in sport (Elliot & Drummond, 2015; Harwood & Knight, 2009; Holt et al., 2008; Keegan, Spray, Harwood & Lavallee, 2010;).

Parents react to their children's sport performance in multiple ways, including supportive praise, performance contingent feedback, instruction and derogatory comments (Holt et al., 2008). Through such efforts, parents can impact athlete decision-making by providing conflicting feedback and overloading their child with advice (Keegan et al., 2010, p. 99). Similarly, peers can impact performance through tacit evaluations of play leading to social judgments. In their study of coach, parent and peer influences, Keegan et al. (2010) found a link between competence in sport and peer social outcomes, "like if you get on well with them and you like do a really poor performance they like, don't wanna be your friend anymore" (p. 99). In this sense, game play and group affiliation/identity may have a reciprocal relationship in that game play shapes belonging, but so too does belonging shape game play.

Considering multiple competing influences, coaches "can never know all that is going on within the environment all of the time" (Jones & Wallace, 2005, p. 126). Coaches thus face an ongoing challenge to make decisions with incomplete information. Jones, Bailey and Thompson (2013) proposed that in order to effectively manage this uncertainty, coaches engage in noticing (Mason, 2002). Jones and Ronglan (2017) described noticing as "the ability to systematically observe events as they happen, to be more sensitive to opportunities of the moment" (p. 906). For instance, Elite Portuguese football coaches manage the limits to their knowledge by "noticing to inform action" (Santos, et al. 2013, p. 270). This attention to the "general atmosphere" (p. 270) included watching pre-practice behaviours, monitoring how players react to changes in a task or listening to a player's tone of voice before acting. Drawing on Jones et al. (2004), Santos et al. (2013) understood noticing as intentional effort to take account of situational details, such as "the general dispositions of individual athletes and the ambience of the group" (p. 270).

2.5.3 Novelty of conditions

Shot selection may evolve as the environment changes. Jones and Wallace (2005) noted the "constant shifting in practice and learning that is required" (p. 127) of coaches and players in the teaching and learning process. As conditions change, it is impossible to guarantee if a strategy will work. For instance, changes in the training environment can alter the developmental trajectories of players without the direct control of the head coach. Phillips et al. (2014) offered a few examples, such as a minor change in technique, an opportunity to play at a higher level, a catastrophic injury or a change in maturation. During such critical periods (Van Orden, 2003; cited in Phillips, Davids, Araújo & Renshaw, 2014, p. 246), large shifts in behaviour result from even small changes in the environment:

> Small alterations in experience, practice and/or development, combined with small variations in genetic structure, might induce continuous and abrupt changes (i.e. bifurcations) in the set of possible behaviours available to a developing athlete as these constraints are satisfied…for example, the emergence of novel actions or responses to performance problems can influence future system behaviours by changing the probability of occurrence of theory potentially functional behaviours. (Phillips et al., 2014, p. 245)

With respect to shot selection, a critical period of change may be puberty in that biological maturation acts as a rate limiter on force production. Before puberty, pre-pubescent athletes lack the strength to shoot the ball from the three-point line with an adult technique. As a result, they rely upon the larger chest muscles to shoot and develop a two-handed shot that must be projected from below the chin. Anecdotally, the lack of strength may discourage players from shooting the ball from farther distances. However, as boys progress through puberty, they develop the strength in their arms and shoulders to shoot the ball from near or above their forehead. This period of maturation can drastically alter shot decisions by increasing the distance from which a player can effectively shoot. Through such a change in maturation, a coach may encounter a more confident player that can better execute an offensive system designed around a deeper shot.

Importantly, coaches must be aware that athletes experience phase transitions that are not strictly physiological (Wylleman & Lavallee, 2000). Transition provides a way of describing the period when a person's position in their ecological environment is altered as a result of a change in role, setting or both. Transitions can be broadly understood as moments where a change event has disrupted the relationships in a system, such as when athletes change levels of competition (Bruner, Munroe-Chandler & Spink, 2008), experience non-selection or face a major injury (Stambulova, 2017). Studies of transition focus on the various "changes that interfere with the athletic status quo" (Samuel & Tenenbaum, 2011, p. 392). In a study of basketball players' transition from junior to senior level in Spain, Pablo, Lorenzo, Borras, Sanchez and Jimenez (2009) found that the players experienced more competitive trainings and an unfamiliar role on the first team that included less responsibility. Similarly, Bruner, Munroe-Chandler and Spink (2008) studied 17-year-old first year minor league hockey players as they moved from home to become paid professionals. In both studies, on-court/on-ice transitions were a major source of personal conflict for the subjects, including dealing with not receiving playing time and adjusting to a new coaching staff.

Wylleman and Lavallee (2000) understood transitions as occurring in two distinct ways; normative and non-normative. Normative transitions are predictable transitions that all athletes experience, such as age-based transitions (e.g. moving up in age groups) and structural transitions (e.g. moving from representative to national level). Conversely, non-normative transitions are unpredictable, such as losing a coach or not being selected to a top team. Notably, scholars of long-term athlete development have taken interest in how athletes respond to transitions in their sporting career (Agergaard & Ryba, 2014; Stambulova, 2017; Stambulova, Alfermann, Statler & Côté, 2009; Wylleman & Lavallee, 2000). In light of their potential to trigger critical refection, Schlossberg (1981) defined transitions as "an event or non-event that results in a change in assumptions about oneself and the world and thus requires a change in one's behaviour and relationships" (in Bruner, Munroe-Chandler & Spink, 2008, p. 5).

As critical periods for development, transitions reinforce calls for coaches to continuously monitor and respond to the evolving circumstances. This includes attention to the world outside of the team. Ubiquitous to our lives, transitions occur when some flux unsettles the person-environment relationship and stimulates human efforts to re-establish equilibrium. In studying the ecology of human development, Bronfenbrenner (1979) previously understood transitions as ready-made experiments of nature with a built-in, before and after design. As a result, transitions have educative potential in that they can stimulate efforts to settle some disturbance that has emerged in their environment. Drawing upon situations where students and workers enter, and/or are confronted by, a changing situation, Beach (1999) illustrated how a changing ecological environment challenged identity, knowledge and skilfulness in ways that led to a change in perspective. A recurring theme in this discourse involves how critical events provoke transformation. Here, some disturbance of the person-environment relationship prompts a self-organising process that can result in changes in behaviour, language, tools, and ultimately, assumptions about the world (Bateson, 1972; Engeström & Sannino, 2010).

In this respect, some understand transitions as boundary crossing (Engeström & Sannino, 2010; Hager & Hodkinson, 2011). Away from sport, examples of transition include adjusting to a technological change (Hungwe, 2017), moving from school to work (Beach, 1999) or giving birth to a child (Elder, 1998). Inherent to social trajectories, transitions give distinct meaning and form to our lives (Elder, 1998). Powerfully, Beach (1999) suggested that transitions could become consequential for development when learners engage in a

conscious, reflective struggle to:

> Re-construct knowledge, skills, and identity in ways that are consequential to the individual becoming someone or something new, and in ways that contribute to the creation and metamorphosis of social activity, and ultimately, society. (p. 130)

2.6 Chapter summary

Building on a nonlinear understanding of athlete decision-making, shot selection warrants attention as a problem of practice. Importantly, orchestration provides theoretical grounding for these notions by changing the horizon of focus from the immediacy of perception-action dynamics to the ongoing and evolving social situation of the team. Through the framework of orchestration (Jones & Ronglan, 2018; Santos et al., 2013), shot selection can be productively understood as a constant negotiation between coaches and players as they respond to evolving circumstances. Through this framing, researchers can capture the complexity of shot selection in order to provoke critical reflection among coaches on the "daily dilemmas that they face" (Jones & Wallace, 2005, p. 132).

To date, researchers have not yet employed orchestration as a lens for examining shot selection in competitive basketball. On this basis, the present study asked (Table 7) how does a senior secondary school boys' basketball team in New Zealand negotiate shot selection over a competitive season? The research questions reflect Jones and Ronglan's (2017) call for coaches to embrace the "mixed messages, opposing perspectives and contradictory beliefs" (p. 910) that invariably arise in coaching. Through this explicit focus on the conflicts and dilemmas that arise in shot selection, this study attempted to capture how contradictions manifested and, to the extent possible, why they unfolded in the way they did.

Table 7. Research questions

Primary question	Secondary questions
2) How does a senior boys' basketball team in New Zealand negotiate shot selection during a competitive season?	e) How do cultural and historical conditions constrain basketball activity? f) What are the conflicts and dilemmas in shot selection that emerge? g) In what ways are conflicts and dilemmas in shot selection negotiated by the team? h) How do individual players negotiate shot selection?

The research questions call for a deeper appreciation of the evolving cultural and historical

conditions from which conflicts in shot selection could emerge. In this respect, the research questions speak to Doll and Trueit's (2012) call to understand teaching and learning as a function of a broader problematic situation. Such a framing reflects an epistemological shift towards seeing decision-making as a complex phenomenon, linked inextricably to the dynamics of collective human activity. Similarly, Ovens and Godber (2013) urged scholars of sport and education to keep the whole system in view when studying learning in sport. It makes little sense to think about "content, function, setting and acting person as independent of each other" (p. 64) because sport, school and social contexts are in constant interaction in ways that force athletes to constantly adapt to emergent situations. Consequently, Ovens and Godber (2013) called for an integrated approach that:

> Attends to the interconnections, the intricate interdependencies, the layers of experiences, events, histories, intentions and biographies that work together to produce emergent effects across a range of embedded and mutually implicated systems. (p. 64)

In situating shot selection as a function of cultural and historical conditions, the research questions also facilitate efforts to understand how coaches and players respond *in situ*. Beach (1999) studied learning experiences where individuals entered, and/or were confronted by, a changing situation that challenged their identity, knowledge and skilfulness. Examples included a college student becoming a teacher, a worker trying to adjust to a management-reorganised job and high school students taking part-time work in fast-food restaurants. Regardless of the nature of their emergence, Beach framed these experiences as consequential for development when "they are consciously reflected on, often struggled with, and the eventual outcome changes one's sense of self and social positioning" (p. 114).

Chapter 3 Methodology and Research Design

Chapter three presents the research design and methodology for this qualitative case study of shot selection in New Zealand senior secondary school boys' basketball. Informed by Third Generation Activity Theory (AT) and complexity thinking (Davis & Sumara, 2006), this study employed a case study method, including participant observation ethnography, inductive analysis and fabricated narrative theory (Polkinghorne, 1995). For a period of 15 months, the researcher-pedagogue became a team advisor for a senior boys' basketball team in the north island of New Zealand. As a process of formative intervention (Engeström, Sannino & Virkkunen, 2014), the researcher collaborated with the coach and players to identify, analyse, and then scaffold solutions to offensive decision-making challenges. During the research process, shot selection emerged as a point of focus. Synthesised in narrative form and told from the perspective of the researcher-as-pedagogue, the case findings present the experience of the team across three terms and through three overlapping lenses: 1) cultural and historical conditions of basketball activity, 2) conflicts and dilemmas in shot selection, and 3) individual experiences of shot selection.

The rationale for the research design is as follows. As a complex relational framework, (Stetsenko, 2008), AT has received scholarly interest as means for studying teaching and learning in team sport (Jones et al, 2014). AT shares ontological agreement with complexity thinking (McMurtry, 2008) while also emphasising change over time in collaborative purposeful activity (Stesenko, 2008). Case study usefully complements AT by enabling researchers to holistically capture how collective activity changes over time and in response to contradictions (Engeström, 2015). Importantly, the goal of AT research is to produce research outcomes that encourage new ways of thinking about the phenomena of interest while also empowering the subjects of research (Engeström, Sannino & Virkkunen, 2014). Such intent serves the goal of this research to expand the boundaries of pedagogy and shot selection research to include context-specific considerations. By engaging the research participants directly as an intervenor and collaborator, the researcher was able to build trustful relationships that enabled the capture of rich case study material. Such material revealed numerous perspectives, events and feelings that are typically hidden from this research area. Finally, a key concern was to develop a process of analysis and representation that could retain the complex, context-dependent nature of events. The process of narrative configuration (Polkinghorne, 1995) allowed this research to establish a sequence of events over time that could historicise participant comments and researcher observations. Told from the researcher's perspective, the case narratives were complex sense-making devices that allowed this study to humanise the

shot selection experience. By illustrating the conscious reflective struggle of participants over time, a narrative of shot selection counteracts the decontextualised and ahistorical approaches that currently predominate research.

Chapter 3 explains the research design by first outlining the central tenents of activity theory as a methodological approach. It then discusses the case study method and research positioning. This section includes the boundaries of the case, rationale for researcher positioning and use of ethnographic metods. It concludes with review of the data analysis process.

3.1 Activity theory as an interventionist approach

3.1.1 Third Generation Activity theory (AT)

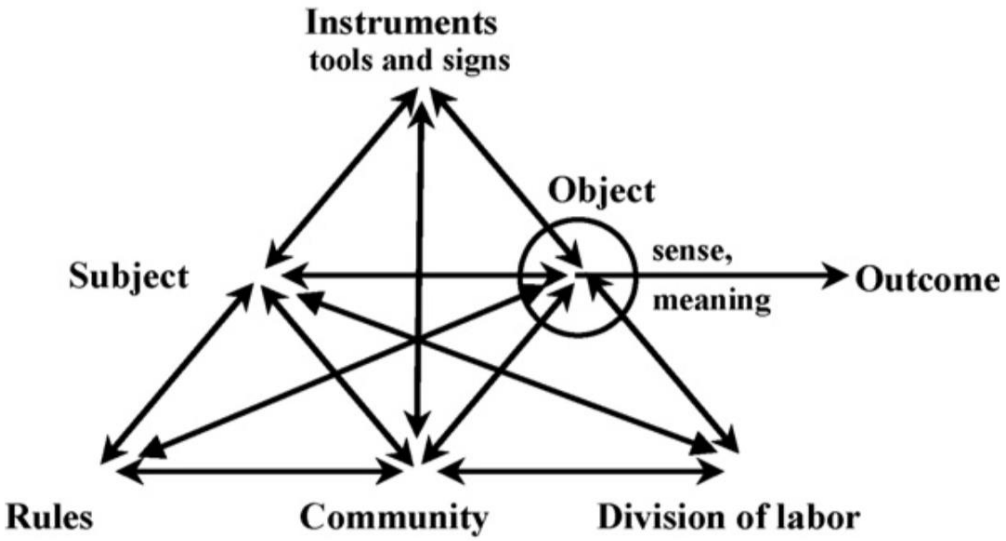
Third Generation Activity Theory (AT) (Engeström, 2011a; Engeström, Metintinen & Punamaki, 1999; Sannino, Daniels & Gutierrez, 2009) provided the methodological foundation for the study. Drawing upon the recent work of Jones et al. (2014), AT provided a conceptual framework that embraces the situational, emergent and embodied nature of human activity. In this section, I introduce AT as a framework that shares fundamental assumptions with complexity thinking (McMurtry, 2006) and has been embraced by some scholars of pedagogy (Hardmann, 2007; Jones, et al. 2014).

Principally, AT is concerned with human development through practical social activities. Activity theorists begin with the premise that activities organise our lives as “the basic unit of concrete human life” (Sannino, Daniels & Gutierrez, 2009, p. 2). In this respect, AT understands individual development as fundamentally linked to collaborative purposeful activity. Sannino, Daniels and Gutierrez (2009) asserted this relationship, “In activities, humans develop their skills, personalities and consciousness. Through activities, we also transform our social conditions, resolve contradictions, generate new cultural artefacts and create new forms of life and the self” (p. 1).

In AT, activity means something more than effortful behaviour or isolated events with clear beginning and end points. Instead, activity is a collective form of practice that has durability over time and moves across physical spaces. Engeström (2018) described activity as “a collective, artefact-mediated and object-oriented system, seen in its network relations to other activity systems” (p. 49). An activity system includes subjects that are part of a community, organised through a division of labour and constrained by a set of rules

(Engeström & Sannino, 2010). Figure 2 presents general model of an activity system. Applied to team sport, the subjects of the activity system are primarily coaches and players (Jones et al, 2014). Together, they form the core of a community with a division of labour that includes both separation of responsibility (position-specific roles within the system of play) and vertical hierarchies of power and status (seniors and captains often assume a hierarchical position over junior players who are inexperienced or new to the team). Within this community, rules constrain behaviour both on and off the court, including coach or sport-imposed rules for play (travelling) and conventions that guide the social order (newcomers carry the water bottles for older players).

Figure 2. General model of an activity system (Engeström, 1987, p. 78)



Importantly, the subjects of activity orient their behaviour around an object. Objects are "resistant raw material and the future-oriented purpose of an activity" (Engeström & Sannino, 2010, p.4). Leont'ev (1978) proposed that motivation for activity resided not in the subjects themselves but in an orienting motive that can (but will not necessarily) be explicitly stated or clearly agreed upon by all. In this respect, objects are subject to change and contradictory interpretations (Engeström, 2018; Engeström & Sannino, 2011; Fenwick, 2011). For example, a case study of television production for a professional bowling league revealed how staff differed in their understanding of the object of television production (Engeström, 2008a). Whereas the command centre understood the object to be a well-produced broadcast, central management and others understood the object as maximising viewer ratings and revenue.

Regardless of conceptualisation, objects come to life through mediating instruments. Owing to its Vygotskian lineage, activity theorists understand all social action as mediated. Instruments are signs, symbols and physical artefacts that mediate a subject's construction of the object of activity. Rabardel and Bourmaud (2003; as cited in Engeström, Kajamaa, Lahtinen & Sannino, 2015) referred to this process as instrumentalisation, "the instrument is not given to users, or subjects. The artefact they take up or with which they are entrusted is only an instrumental proposition that they will elaborate, if they wish and if it is possible, as an instrument" (p. 688).

Using AT, I understood shot selection as actions by coaches and players, mediated through instruments, as they pursued their object(s) of basketball activity. Instruments included on-court movements (layups, jump shots, fakes), verbal cues (taunts, praise), speech actions (instructions, questions) and gestures (body language). Given that they do not engage in on-court movement during play, coaches share in the shot selection process primarily through cues, speech actions and sideline gestures. In this respect, instrumentalisation involves not only single, isolated artefacts but also families of interconnected instruments linked to situations and domains of the activity (Engeström, 2007). Studies in the AT tradition acknowledge that mediating tools include not only physical artefacts and words but also movements and gestures. Examples include the subtle act of turning, laughing together and invoking sarcasm (Engeström, 2008a) or standing up from a chair (Engeström, Nummijoki & Sannino, 2012).

Such theorising compliments holistic and embodied understandings of game play (Light & Fawns, 2003; Mouchet, 2005). Light and Fawns (2003) conceptualised learning as an educational conversation that integrates speech and action. In this continuity, conscious reflection (including verbal conversation) and instinctual movement blend together in ways that cannot be neatly separated. Light and Fawns (2003) explained this relationship in a discussion of cognition in physical education:

> We don't, however, see speech and action as dissoluble; we see them as blended in our teaching. During these periods where students discuss tactics, they analyse their prior performances and create new concepts and ideas that they attempt to put into practice in the following games. Such reflective thinking is, however, only possible because of the students' immediately prior experiences of play and the treatment of the experience as a sign or symbol in subsequent discussion. They can only speak of this action because they have physically experienced it. Engagement in these activities involves forms of cognition and perception that are inseparable from the body's action. (p. 166)

Notably, the integration of speed and action also implies a continuation of learning beyond the training environment. Discussing games lessons in physical education teaching, Light and Fawns (2003) highlighted how learning extended into verbal conversations after lessons ended, “When the class stops the activity to reflect and discuss, thinking is expressed through speech.” (p. 166). While acknowledging that students primarily learned through movement in play, Light and Fawns called attention to how this learning did not occur in isolation from ongoing conversations, “These periods of verbalization highlight the grammar of each game, the tactical complexities that are often not recognized by students. They encourage students to think about the body’s movement and its relationship to the dynamics of space and time” (p. 166).

3.1.2 Contradictions as the stimulus for change

Among activity theorists, contradictions provide the stimulus for system change (Engeström & Sannino, 2015). Contradictions are historically evolving tensions within and between activity systems that manifest as dilemmas, conflicts and misunderstandings in activity (Engeström and Sannino, 2011). A zone of proximal developmental emerges when a need exists to create and/or re-develop objects, tools, rules and distribution of labour to resolve those tensions that underlie the conflict. In its most powerful form, such as double bind, subjects may redesign entire models of activity (Engeström & Sannino, 2010). Table 8 lists descriptions of contradictions.

Table 8. Descriptions of contradictions (Engeström & Sannino, 2012)

Contradiction	Description
Primary	Emerging latent primary contradictions within each and any of the nodes of the activity system
Secondary	Openly manifest secondary contradictions between two or more nodes (e.g., between a new object and an old tool)
Tertiary	Contradictions between a newly established mode of activity and remnants of the previous mode of activity
Quaternary	As external contradictions between a newly reorganised activity and its neighbouring activity systems

An illustrative example of contradiction comes from a study of economic crime investigation (Engeström, Punti & Seppanenm, 2001). In a case study of a Finnish crime unit, economic crimes differed from routine workflows built around more traditional crimes

like homicide and robbery. Traditional crimes followed a linear investigative progression that resembled a track relay. Specifically, “each agency takes care of its own part of the investigation, often sequentially and passing the baton through documents without personal contact” (Engeström, Puonti & Seppanen, 2003, p. 155). In contrast, white-collar crime investigation called for a more flexible model of investigation. Economic crimes tended to resist clear definition, were difficult to pinpoint to a single time or location, and required parallel, simultaneous work between authorities. To resolve the contradiction between economic and traditional crime, a new concept for investigative process was enacted. With no single authority possessing complete control of the investigation, the nature of the investigative process became more flexible and project based.

Importantly, contradictions can emerge in the interaction between systems of activity. In original work on polycontextuality, Engeström et al. (1995) investigated the work of moving between two simultaneous settings. Specifically, the production design and assembly teams within an industrial plant experienced cross-setting conflict when defects emerged after the institution of a new method of tile setting. Traditionally, production design and assembly communicated through a central authority. Considering the delay created by working with a middleman, the assembly foreman and parts production supervisor constructed a new process where they engaged defects in design through direct dialogue and communication on the shop floor. In this case, the workers between activity systems created a new mode of activity where defects were directly addressed in an impromptu fashion by interacting live on the shop floor. Given that the criteria for expertise were different, the workers faced the challenge of “negotiating and combining ingredients from different contexts to achieve hybrid solutions” (p. 319).

Bateson (1972) provided philosophical grounding for conceptualising how contradictions stimulate change in activity theory. Engeström and Sannino (2010) employed Batesonian logic to the ways in which changes in activity result from corresponding degrees of contradiction. The most severe was a double bind, “a social, societally essential dilemma which cannot be resolved through separate individual actions alone – but in which joint co-operative actions can push a historically new form of activity into emergence” (p. 5). Considering Engeström’s commitment to transforming how organisations structure their work, his agenda has focused on tertiary and quaternary contradictions. Manifested a paradox, these contradiction challenge routine taken-for-granted models of an activity. Perhaps unsurprisingly, it was understood that such transformations could be especially painful and frustrating. As alluded to by Bateson (2007),

> The learning is not a smooth curve – it is a jump. A quantum change as they say now. And what I am saying is that there is a particular sort of frustration, of misery, rage, which is imposed upon you when you are asked to behave at the next highest level of abstraction or any higher level of abstraction than that which you were behaving at. You are being forced to a sort of insight which your previous ways of thinking did not contemplate. This can be very painful. (p. 988)

Sterling (2010) similarly drew upon Bateson (1972) when discussing transformational learning. While learning can occur at even the most superficial levels, the deepest learning "touches our deeper levels of knowing and meaning, and, by doing so, influences our more immediate and concrete levels of knowing, perception and action" (Sterling, 2010, p. 22). Table 9 outlines Sterling's (2010) summary of the levels of learning.

Table 9. Levels of learning (adapted from Sterling, 2010)

Orders of change/learning	Seeks/leads to	Can be labelled as
First order change	Effectiveness/efficiency	Conformative
Second order change	Examining and changing assumptions	Reformative
Third order change	Paradigm change	Transformative

Conceptually, contradiction reinforces key assumptions within a coaching-as-orchestration framework. Specifically, contradiction provides researchers with a conceptual device for capturing the conflicts, dilemmas and paradox that coaches and athletes face in daily practice (Jones & Wallace, 2005). Jones and Ronglan (2017) challenged coaches to embrace paradox as a source of learning and development, arguing that opposing perspectives, mixed messages and contradictory beliefs are "immanent and intrinsic to coaching" (p. 910). The empirical evidence from activity theory suggests that such notions are more than mere platitudes. As a dialectical framework, contradiction is understood as the source of transformation. In this respect, a clear opportunity exists to investigate coaching and playing decisions in relation to the historical tensions among agents in open adaptable systems.

3.1.3 Provoking, facilitating and documenting change

As a complex relational framework (McMurtry, 2006; Stetsenko, 2008), the goal of AT research is to produce outcomes that encourage new ways of thinking about the phenomena of interest while also empowering the subjects of research (Engeström, Sannino & Virkkunen, 2014). The interventionist sensibility reflects earlier work by

Bronfenbrenner (1977), Leont'ev (1978) and Vygotsky (1978), Soviet researchers who challenged the tendency of Western social scientists to use research to seek universal laws for human behaviour. The alternate approach was to use *naturalistic* experimentation to probe future possibilities for development. From this standpoint, Bronfenbrenner (1979) encouraged researchers to study the changing relationship between growing people and their dynamic environments through "the systematic alteration and restructuring of existing ecological systems in ways that challenge the forms of social organisation, belief systems and lifestyles prevailing" (p. 41).

Activity theorists pursue this line of thinking by interacting with the system under study in order to provoke, facilitate and document the dynamics of a changing activity (Engeström, Sannino & Virkkunen, 2014; Sannino, 2011, 2015; Sannino, Daniels & Gutierrez, 2009). It is through interaction with participants that researchers can collaborate to produce new configurations that may then "activate previously unrealised behavioural potentials of the subject" (Bronfenbrenner, 1977, p. 528; as cited in Engeström, et al., 2014, p. 119)

Researchers can go beyond providing straightforward explanations of a system by moving towards a role of interacting "with a real complex world and therefore … a role in making that world through their interactions" (Hetherington, 2013, p. 82). Rather than position myself as a neutral observer, I instead positioned myself as an intervener in the basketball activity system under study. Such a position is common in Engeström's approach, as alluded to by Sannino, Daniels and Gutierrez (2009):

> Engeström is concerned not only to describe but also to intervene. His interest in collective development has involved him in detailed studies of particular activities and the tensions they embrace, and the use of such data to support a process of reflection and experimentation. (p. 23)

Such a position embodies a turn towards academic research methodologies that acknowledge the fluid boundaries between object and subject of research (Rosiek, 2013; St. Pierre, 2013). Positioning the researcher as a contributor to the system under study contrasts with traditional anthropological approaches that position the researcher as an unobtrusive observer with a focus "on identifying stable communal structures" (Barab & Kirshner, 2009, p. 9).

In dissolving the traditional boundaries between the subject and object of research, Activity theorists have embraced the effect that research can have on participants. Activity theorists have long conducted research that empowers research subjects rather than

simply observing existing processes or evaluating efficacy in isolated conditions. Interest in AT generally, and an interventionist method specifically, is common among scholars concerned with promoting social change. According to Davydov (1988), the essence of the approach lies in researchers collaborating with practitioners to develop new forms of activity that align with a meaningful social mandate. Early examples included developing theoretical thinking in schools, movement capacity in children with multi-sensory impairment and speech development for patients with trauma or aphasia.

For the purposes of this study, a mandate existed to help coaches understand "the daily dilemmas" that they face in competitive sport (Jones & Wallace, 2005, p. 128). Through shot selection, it was believed that this research could open new lines of thinking for how coaches manage the mixed messaging, contradictory values and competing interests that exist between coaches, players and their host organisations, among others. This work is driven by the historical tension in sport between achievement and human development (Black, 2010; Coakley, 2010; Frey & Eitzen, 1991; Harmann & Kwauk, 2011; Kidd, 2008; Van Rheenen, 2012).

3.2 A case study using formative intervention

3.2.1 Overview of Research Design

As a qualitative case study with formative intervention (Engeström & Sannino, 2011), the research design involved collaborating with the coaches and players of the senior team as they engaged in naturalistic efforts of training and competition. Because formative intervention involves emergent and iterative design through the course of research, these efforts were not predetermined in advance. The reseach approach began as a general effort to work with the team to improve play and prepare for competition. Given its centrality to basketball strategy, shot selection naturally emerged in the course of these events to become a focal issue for the coaches and players.

Over a period of 15 months (September 2015 to November 2016), this research involved intervention with the coach and players of the senior boys' basketball team at Greenwood High School (pseudonym) in Auckland, New Zealand. Located in a suburban neighbourhood east of the Central Business District (CBD), Greenwood is a co-educational secondary school that first opened in 1961 and serves over 2000 students across five school grades (year 9 to 13). With 20 sports teams and over 200 participants, basketball is one of the most popular codes in the school. A programme growing in both

size and competitiveness, the 2014 senior team became the first in school history to advance to the secondary school national tournament.

As the team experience unfolded, I documented the interactions of the team using ethnographic methods. These included:

- Observation
- Informal conversation
- Image and video capture
- Document analysis
- Reflexive memos

Initiated during fieldwork, I collated the ethnographic data and began constructing my understanding of the experience that was unfolding. Upon completion of fieldwork, I continued to construct this understanding before synthesising the elements in narative form. Told from the researcher's perspective, three linked narratives depict how the team negotiated shot selection during the period of study.

3.2.2 Case study and activity theory

In AT, case study is a preferred research design given its suitability for investigating how collective activity changes over time and in response to contradictions (Engeström, 2015). According to Hetherington (2013), case study can be usefully paired with complex perspectives because complex phenomena need to be viewed holistically, thus necessitating a focus on interactions through a contextual approach. In this respect, case study reflects "study in depth" (Hetherington, 2013, p. 75) of the "particularity and complexity of a single case" (Stake, 2013, p. xi). Case study researchers are encouraged to understand interdependencies, be sensitive to relationships, look for the unexpected and focus on process (Anderson, Crabtree, Steele & McDaniel, 2005). When paired with Activity Theory, case study thus provides a means for examining human activity in rich contexts where material, cultural and historical dynamics intersect in the production of meaning (Byrne, 2005; Haggis, 2008).

In line with case studies using AT, the present study began with the basketball activity system then identified a problem of interest that triggered a sequence of learning actions. Approached this way, case studies allowed me to study the negotiation of shot selection chronologically, as a trajectory over time. In an illustrative work, Engeström et al. (1995) designed a case study around a problem faced by an automotive manufacturing team. Engeström et al. (1995) explained their research process in the following way, "after

entering a team, we identified a complex problem, issue or task the team was about to tackle. We followed and recorded the handling and resolution of this problem or issue as closely and completely as possible" (p. 323)

Moreover, case study incorporates multiple perspectives (Haggis, 2008; Stake, 2012). Here, the emphasis upon multiple realities, interpretations and perspectives in qualitative case study enabled me to probe how coaches, players and other key influencers acted and spoke in relation to local basketball problems. Stake (2012) regarded this characteristic of case study research as fruitful for capturing and reporting the complexity of human experience. Stake (2010) described case study research in the following way, "some of us try to extend to readers a vicarious experience of the activities, thus a better opportunity to decide in their own way how things work" (p.65).

Finally, a case study approach helped to illustrate the interdependence inherent to coaching and athlete decision-making. In a study of machinist transitions to computer mediated work, Hungwe (2017) sought to understand individual development in relation to collective activity. Drawing explicitly on Activity Theory, the author highlighted the ways in which growth emerges in concrete activity systems and involves the integration of identity, knowledge and skill. Specifically, Hungwe traced changes in automotive manufacturing at the global (e.g. global competition for better products) and organisational levels (e.g. engine specialisation) to changes in machining activity that disturb previous modes of work and lead to contradictions in workers' tool use and object construction. Hungwe revealed how the cognitive work of machinists changed at multiple levels of experience, including identity formation, knowledge construction and skill development. Hungwe (2017) stated:

> Learning and development could therefore be understood in terms of a duality of co-occurrent meanings, in one sense signifying knowledge and skill and in another identity formations. Furthermore, the consequences of technological change for individual development were mediated. The outcomes could be accounted for in terms of the changes in technology, but they were not deterministically produced by these changes. (p. 173)

3.2.3 The basketball activity system as unit-of-analysis

The present case study involved shifting the unit of analysis from the isolated individual and/or well-bounded physical setting to the activity system. Table 10 provides a description of the activity system under study.

Table 10. Description of the activity system as the unit of analysis

Unit of analysis	Included network of practices
Senior team basketball activity system	Training sessions Competitions Team meetings Travel between locations (e.g. van to the game) In-person and digital conversations Team digital group chat Social media team page

Activity systems exist as a network of practices (Blackler, 2009; Engeström, 2016; Engeström, Kajamaa, Lahtinen & Sannino, 2015). In this sense, activity systems cannot be reduced to a single location. For the purpose of this study, making the activity system the unit of analysis meant expanding beyond the training environment to include the network of practices that make up basketball as an activity, whether they are digital (internet conversations) or in-person (physical training, games and team meetings). Such a shift can afford researchers a more subjective reading of human practice. Sannino, Daniels and Gutierrez (2009) described that effect:

> Object-oriented and artefact-mediated activity as a unit of analysis retains the importance of subjectivity, while integrating it with cultural means and constraints that inescapably characterise human practices. In doing so, this unit of analysis integrates society into activity. (p. xv)

This emphasis on the activity system as the unit of analysis challenges the tendency of researchers to study the effect of learning environments on individual learning (Engeström, 2009a). Such models can draw a false distinction between the person learning and the learning environments. Engeström (2009a) commented, “models such as this take the context as an envelope or container that surrounds human beings engaged in action” (p. 19). Blackler (2009) similarly challenged the tendency in organisational research to take the organisation as the unit of analysis, a view of organisations as “rounded, bounded, purposeful and sovereign entities” (p. 21). Scholarship in this field has been criticised for focusing too much on formal organisations “by assuming that these are both solid and enduring” (Tsoukas, 2003; cited in Blackler, 2009, p. 22).

3.2.4 Formative intervention

Taking inspiration from sociological intervention studies, formative intervention (Engeström, 2011b; Engeström, Sannino & Virkkunen, 2014; Sannino, 2011) complements case study. As an engaged researcher stance, researcher interventions taken in pursuit of

progress are created and adapted organically in the flow of human activity (Engeström, 2004). The aim of formative intervention is to collaborate with research participants to identify the learning problem then scaffold learning actions that would help move them toward resolution. In this process, the researcher is a facilitator, observer and contributor of ideas. Engeström's (2009a) work informed this approach:

> The researcher's task is to identify and conceptualise those budding new relations or germ cells, to help them unfold and become visible, and to record their generalisation in practice. In other words, developmental research constructs and tests in practice historical hypotheses concerning zones of proximal development of the expert activity systems under scrutiny. This is where interventions can be helpful. (p. 157)

When conducting this formative intervention, the outcome of intervention emerged in three ways: 1) an expanded pattern of basketball activity, 2) a corresponding theoretical concept for play, and 3) new type of agency in play (Sannino & Engeström, 2011). On the ground, formative intervention involved working with the team to iteratively identify conflicts and dilemmas in basketball activity then support their resolution. As is common in studies that employ formative intervention, the starting point for this research was not known in advance. Rather, interventions began flexibly and evolved over time through co-collaboration with players and coaches. Learning actions involved an initial questioning of play leading progressively to sustained dialogue, experimentation, modelling and implementation of a new concept for play. In this nonlinear process, the coaches and players were frequently challenged to cross boundaries by stepping outside of their traditional perspectives and engaging in new ways of knowing the game.

Engeström, Sannino and Virkkunen (2014) offered a comprehensive overview of the core tenants of formative intervention. In the section that follows, I draw upon their review to explain three elements; 1) double stimulation, 2) ascending from the abstract to the concrete, and 3) transformative agency.

3.2.4.1 Double stimulation

Double stimulation is the first step to enacting formative intervention (Engeström, Sannino & Virkkunen, 2014). First, double stimulation involves identifying a demanding task, typically the complex problem itself that the subjects of the activity system face. During the study, the main problems of interest were offensive tactical decisions on the court during training and competition. In this case, a primary concern was offensive play, including the shot decisions of ball carriers in the scoring zone and the spacing decisions of teammates without the ball.

The second element of double stimulation was to move from the initial problem to discussion and analysis. The purpose of discussion and analysis is to identify a contradiction. Importantly, this transition was achieved through the introduction of an auxiliary artefact that could be filled with meaning and subsequently developed into a new instrument. In this case, video recordings of team scrimmages in training provided this "mirror material" (Engeström, 2009a, p. 28). In collaboration with the head coach, I used video of offensive play to stimulate discussion and analysis with team members during team video sessions. While training sessions also afforded some opportunity to engage the students in discussion, these conversations tended to remain surface level and characterised by short, one-word answers. In contrast, team video sessions opened a space for more deliberate and engaging back and forth dialogue between coaches and players. In this way, the combination of an on-court decision-making with video provided the basis for double stimulation that then stimulated a sequence of learning actions.

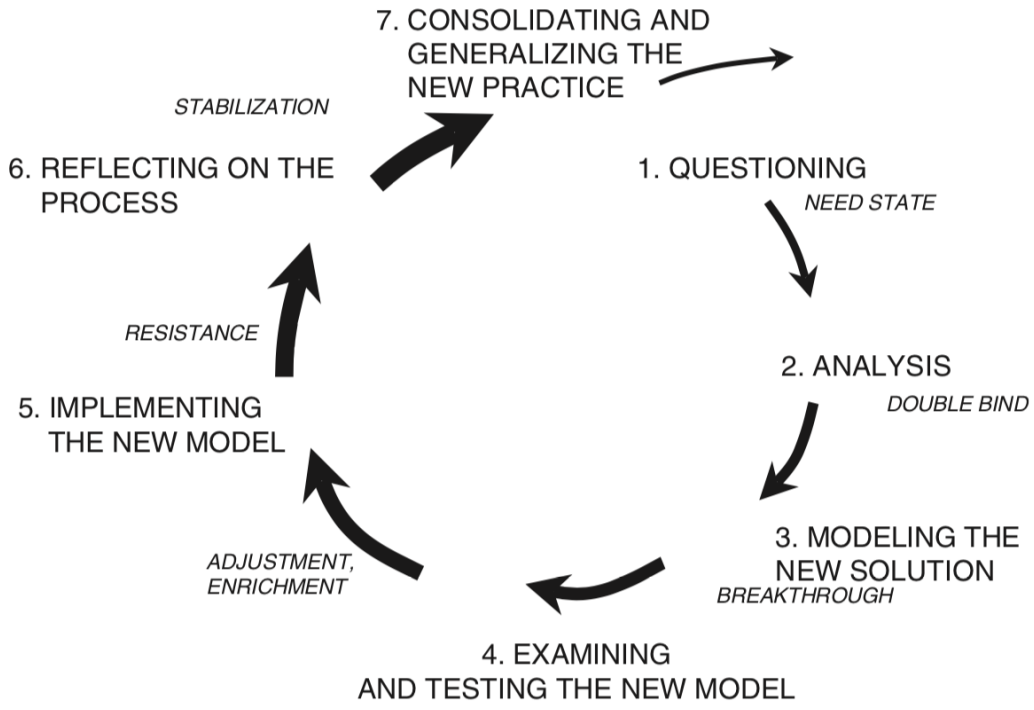
3.2.4.2 Ascending from the abstract to the concrete

Following double stimulation, the researcher and participants engage in collective actions that lead "to the formation of a new, expanded object and pattern of activity oriented to the object" (Engeström, Sannino & Virkkunen, 2014, p. 122). Understood as ascending from the abstract to the concrete (Davydov, 1990), the researcher and participants identify a germ cell that can be progressively expanded into a theoretical concept for a new model of activity (Figure 3). Here, the germ cell refers to the smallest and simplest unit of the activity that carries the essential contradiction to be resolved. These tend to be commonplace events and actions of the larger activity that can easily go unnoticed but upon deeper inspection, open perspectives for multiple applications, extensions and developments.

A Finish case study of elderly home care demonstrates how this process can unfold (Engeström, Nummijoki & Sannino, 2012). Following the introduction of a new work arrangement, home care nurses were asked to better support client mobility. Despite the availability of a booklet and the client's acknowledgement of the value of increased mobility, the client expressed a concern for safety, including a fear of falling. After identifying this conflict, the germ cell for a new concept of mobility emerged in one of the exercises from the booklet, the action of standing up from a chair. As a commonplace practice, standing up from a chair embodied the basic contradiction between safety (using the arm rest to prevent falling, but creating dependency) and autonomy (standing up without help but increasing risk). In collaboration with a researcher, the nurse and client

worked with the patient to help her stand up from the chair without using her arms. In this expansive learning process, learning actions progressed from an initial need state to the analysis, modelling and implementation of a new form of activity. Once the client achieved the initial goal of standing up without using her arms, the concept of mobility expanded to include straightening her back, taking walks and setting the table.

Figure 3. Learning actions in an expansive learning cycle (Engeström & Sannino, 2010)



The intention behind any formative intervention is to produce both a change in patterns of activity and a corresponding theoretical concept, manifested in discursive form. In this respect, concept formation carries special importance as the product of bottom up theoretical generalisation (Davydov, 1990). Whereas empirical generalisation, the dominant practice of schooling, forms scientific concepts from rational-analytical comparison and classification of object features (mathematical logic), theoretical generalisation forms everyday concepts through a bottom-up developmental process, resulting in the discovery of a principle that solves a local problem.

3.2.4.3 Transformative agency

The final element of formative intervention is transformative agency. Appropriately, Virkkunen (2006) understood transformative agency as “breaking away from the given frame of action and taking the initiative to transform it” (p. 49). Engeström (2011b)

identified six ways in which transformative agency can be expressed:

1) Resisting the proposed change, or suggestions or initiatives associated with it.
2) Criticising the current activity and organisation.
3) Explicating new possibilities or potentials in the activity, often relating to past positive experiences.
4) Envisioning new patterns or models for the activity.
5) Committing to taking concrete actions to change the activity
6) Taking consequential actions or reporting having taken consequential actions to change the activity. (p. 25)

When the initial germ cell expands into a more cohesive model, learners can enact a new model in different forms. In some cases, the transformation can begin quite subtly then become dramatic. At the same time, transformative agency does not imply an inherently positive outcome. Previous research has acknowledged the nonlinearity and multidirectionality of this process. In journeys from the abstract to the concrete, researchers do not control the outcome. The subjects of the activity system can ignore, forget and/or make modifications to suggestions made by the researcher.

For the present study, the implication was that the instruments for shot selection emerged in multiple forms that were not immediately obvious. As suggested in section 3.2, instruments were diverse and included techniques, non-conscious habits, bodily gesture and language, among others. In this respect, the body itself can become a cognitive artefact where motion in space acquires conceptual meaning (Johnson, 2007). Davydov (1988) understood concepts not as things, in and of themselves, but as enactments. Specifically, “it is not because of the concept that the child is capable of acting conceptually, but on the contrary, he acquires concepts because s/he starts to act conceptually, because his practical acts are conceptual” (p. 181).

Ultimately, formative intervention methodology breaks from interventionist studies that seek to design then test a predetermined approach. Whereas traditional ethnographic research is concerned with “studying stable orders, routines and reputable procedures” (Barab & Plucker, 2009), formative intervention involves actively transforming the activity by embracing its emergent nature. This included attending to the historical conditions of the basketball activity system, identifying unanticipated contradictions in game play that stimulated learning actions then acting as a scaffold in the process of bottom up change. Activity theorists take interest in ambiguous situations that cannot be controlled by any single actor and thus require the interaction of a diverse group at multiple levels of an activity system (Engeström, 2009b). Perhaps unsurprisingly, the field embraces the

inherent uncertainty of human activity “to show that every kind of work requires complex thinking, problem solving and learning” (Engeström & Glăveanu, 2012, p. 515). Driven by the need for more novel work arrangements in modern settings, Engeström and colleagues intentionally studied conflicts where traditional systems no longer serve the modern demands that work teams face (Engeström, 2008b).

As this form of research has progressed, insights have helped to demystify complex organisational challenges. Case studies in Activity Theory frequently illustrate the ways in which activity systems can develop new ways of working. Because scholars in this tradition study activity at the level of conversation and workflow, they capture subtle, *in situ* patterns of communication and corporeal engagement that connect discursively constructed objects with new instruments. On this basis, it was envisaged that such a research design translated to sport given the relationship between bodily movements in play (jumping, shooting, sprinting), material artefacts (balls, whiteboards, uniforms) and discursive tools (verbal cues, questions, instructions).

3.3 Ethnographic Methods

Empirically, I use ethnographic methods to document the formative intervention process. In this section I review those methods. The ethnographic approach involved five distinct empirical processes; (a) observation, (b) informal conversations, (c) video and image capture, (d) document analysis, and (e) reflexive memos.

3.3.1 Observation

Observation is a common strategy in studies of athlete learning (Christensen, et al., 2011; Lund, Ravn & Christensen, 2013). Primarily, observations were used to study the play of the athletes and the team environment in trainings, competitions and off-court sessions (see Appendix I). These observations focused on the decisions that athletes made in the context of play (in training and competition) and how those decisions related to the general atmosphere of the team. Attending trainings and competitions allowed me to observe the coaches and players in the natural flow between on-court and off-court interaction. Drawing upon my background as a coach, I took notes on configurations of play commonly faced, styles of play, patterns in decision-making, and situations that unearthed contradictions and provided the stimulus for an expanded model of play. A key goal in this process was to locate shot selection within the broader situation of the team.

In these observations, I maintained attention to the broader features of the training setting, including pedagogical choices, sideline behaviour, player dress and general behaviour. Importantly, I devoted attention to coach feedback, instruction, task design, material features of the playing space, and motivational climate of the team. Off-court sessions, such as team film sessions and team meetings, provided further appreciation of the decisional background (Mouchet, 2005) that emerged in relation to decision-making patterns and challenges on the court. Observations of team meetings/events provided insight into the off-court environments that influence on-court play, and vice versa. In order to explore connections between environments, observations included settings where the athletes were not present, such as meetings, coach-parent conversations, and meetings with school leaders concerning issues that had direct and indirect influence on the activity system. Relevant issues included school sport policy, facility access, team logistics and team resources,. For participants whose perspectives became focal case studies, I also observed some of their trainings and competitions outside of the school team. All observations were captured in the form of jottings that were transferred to written reflexive field notes (Emerson, Fretz & Shaw, 1995).

3.3.2 Informal conversation

Informal conversations with athletes, coaches, family members and significant others occurred regularly during the period of study. Informal conversations are unstructured interviews that happen in the context of fieldwork (O'Reilly, 2009). Conversations addressed issues related to the team's decision making (see Appendix H), including patterns in play, beliefs about play, recollections of decisions made during play, related personal matters, constraints on athlete development (facility access, scheduling conflicts, and family expectations) and resources that support athlete learning (videos and tips). Building on the work of Mouchet (2005), some conversations included video reflection from moments of game play in order to serve as a stimulus for recall. Conversations took place at venues of mutual convenience between the researcher and participants, for example in the sports office. Conversations involved both individual and small group discussions depending on the topic. In some instances, I requested permission to take notes and audio record conversations. All audio files were downloaded to an external hard drive and stored in a locked cabinet, directly accessible only to the researcher (see Chapter 4 for a discussion of ethical considerations).

3.3.3 Video & Image capture

While common for post-match observation (O'Donoghue, 2015), video has become an increasingly useful method for studies that involve ethnographic fieldwork (O'Reilly, 2009). For the purposes of this research, video footage and photographic images were captured of athletes' on-court game play during training and competition. O'Donoghue (2015) noted that photographic images and single video frames are commonly used in the analysis of performance. For this research, video footage became a dominant artefact for the double stimulation approach taken. As mirror material (Engeström, 2009a), video footage of play in training and competition provided a second stimulus that triggered discussion. In addition, video footage allowed me to conduct post-match and post-training reflection on the embodied nature of tactical decisions (Mouchet, 2005). In this respect, video and image provided a backup tool for observation given that the dynamics of the observational setting (such as noise, crowd, sideline behaviour) sometimes impaired my ability to fully capture relevant evidence in person. Video and image files were downloaded to an external hard drive, directly accessible to the researcher on a password-protected device.

3.3.4 Document analysis

Document and artefact analysis were used as a tool for gaining insight into the cultural and historical dynamics of the activity system (Uehara, et al., 2014). Examples of relevant tools included training and competition schedules, practice plans, team statistics, team policy documents, organisational reports, communications (commonly in the form of emails) and learning tools. As a tracing tool, documents and artefacts helped me to better understand the history and motivation of the team. For example, YouTube video links sent from coaches and players were studied to better understand influences on decision-making and skill development. The players and coaches frequently sent me videos that they thought were relevant to the challenges the team was facing. In some instances, these videos became content for video film sessions. Subsequently, both websites and policy documents provided a basis for understanding beliefs about play, team culture and the changing nature of activity itself. Public reports from Regional and National Sporting Organisations helped me situate the team relative to patterns of participation across the region and country. All electronic files were downloaded to an external hard drive and stored in a locked cabinet, directly accessible only to the researcher and the supervisor. Physical artefacts were kept in a locked cabinet at the researcher's workstation on a password-protected device.

3.3.5 Reflexive memos

On an ongoing basis, I documented personal feelings and observations related to my positioning with the team. Weekly, I identified concerns, questions and key issues that created personal feelings related to my influence on the team. This process helped me to maintain a reflexive stance related to the role of academic researchers when conducting research in community settings. At the same time, research memos allowed me to begin the process of identifying the key issues in the team's activity. Rather than waiting for the completion of fieldwork to begin this process, I attempted to articulate current themes in the team's learning that would become the basis for a fuller articulation during write up.

3.4 Narrative configuration

Initiated during fieldwork, I employed narrative configuration (Polkinghorne, 1995) as an analytical process. Narrative configuration involved making sense of the unfolding situation by constructing "the very thing one is attempting to make sense of" (Springgay, 2008; as cited in Holbrook & Pourchier, 2014, p. 755). In this sense, I attempted to capture the team's negotiation of shot selection through the construction of an impressionist tale (Van Maanen, 1989), a narrative device. Told from the researcher's perspective, the impressionist tale illustrates how conflicts in shot selection emerged and were addressed over a competitive season. In so doing, I embraced narrative as a complex processing mechanism (Browning & Boudes, 2005; Bruner, 1991; Tsoukas & Hatch, 2001), and the impressionist tale (Van Mannen, 1989) as a tool for representing case study research.

The tradition of searching for generative principles and immutable laws has reinforced forms of social research that probe data for "deep structures" (Haggis, 2008, p.161). However, such approaches do not sit well among scholars who embrace the notion that nonlinear conditions make learning an emergent, unpredictable phenomenon (Haggis, 2008). In the following section, I elaborate on narrative configuration, including narratives as complex sense-making devices and the impressionist tale as a tool for representing such complexity.

3.4.1 Narrative as a sense-making tool for complex environments

Despite an emphasis on local circumstances in case study research, Haggis (2008) identified an ongoing challenge in the process of analysis and write up. Conventional qualitative research methods can easily reinforce the dominant epistemology. St. Pierre (2012) disputes the tendency to treat the words of subject transcripts and field notes as brute data to be coded and quantified. Similarly, Anderson, Crabtree, Steele and McDanlel

(2005) questioned the tendency of case study researchers to understand organisations as though they were “mechanistic systems with straightforward cause and effect linkages” (p. 2). Unfortunately, the question of what makes a case study meaningful and relevant has led some researchers to qualify their findings in ways that continue to reinforce the dominant epistemology. Haggis (2008) exemplified this position:

> Although qualitative case study researchers are usually careful to make it clear that they cannot generalise, this caveat itself indicates how such research is still firmly located within particular ontological and epistemological assumptions which privilege the capacity for a particular kind of generalization. (p. 162)

Researcher efforts to understand complex environments require a complex form of sense making. According to Osberg and Biesta (2010), “since complex processes do not have a discrete origin, end point or linear trajectory from which it is possible to calculate the logical rules or laws that drive them, it is necessary to understand such processes in terms of a non-object-based (or non-linear) form of logic” (p. 598). Narrative, including portraits and storytelling, receives attention as one such mechanism.

Bruner (1991) understood narrative as more than a text for representation, but an instrument that helps humans to make meaning (see Table 11). Narratives accentuate the temporal and contextual dimensions of experience by establishing sequences of local events linked through an unfolding plot. First, events occur among people in concrete settings that enable a contextual understanding of the situations in which moments occurred. In this respect, the synthesis of data into a narrative whole can afford researchers one solution to questions posed by Haggis (2008), and Osberg and Biesta (2010). To know the situational details that led to decisions is to establish a form of causality based on change over time. Tsoukas and Hatch (2001) described the nature of this causality in the following way, “In narrative we have a more concrete rendering of causality. It is historical and specific, not general and contingent. ‘This did happen this way,’ versus ‘this should happen if the following conditions hold’” (p. 998). The temporal sensitivity of each point in narrative integrates the present with the history of prior events and the anticipations of future events. This sensitivity does not strictly follow symmetrical calendar time, but a nonlinear, humanly relevant time (Ricoeur, 1984; cited in Tsoukas & Hatch, 2001).

Table 11. Logico-scientific and narrative modes of thought (Tsoukas & Hatch, 2001)

Dimension of thought	Logico-scientific mode	Narrative mode
Objective	Truth	Verisimilitude
Central problem	To know truth	To endow experience with meaning
Strategy	Empirical discovery guided by reasoned hypothesis	Universal understanding grounded in personal experience
Method	Sound argument Tight analysis Reason Aristotelian logic Proof	Good story Inspiring account Association Aesthetics Intuition
Key Characteristics	Top-down Theory driven Categorical General Abstract De-contextualised Ahistorical Non-contradictory Consistent	Bottom up Meaning-centred Experiential Particular Concrete Context sensitive Historical Contradictory Paradoxical, Ironic

Organisational theorists acknowledged narrative as a tool for sensemaking (Browning & Boudes, 2005; Tsoukas & Hatch, 2001). In their discussion of narratives within organisations, Browning and Boudes (2005) noted that narratives help humans acknowledge and accept complexity, including the ubiquity of fragmentation, failure and surprise in decision-making. Specifically, Browning and Boudes noted how narratives provide context-specific and need-driven information to reveal how individual actors struggle with decisions. Specifically, "the complexity of the story allows for many voices, from marginal to central, to register as a response to complexity because it matches the local, fragmented, emergent story so well" (p. 35).

3.4.2 Impressionist tale

The outcome of narrative configuration was an impressionist tale (Van Maanen, 1988). Barab and Krishner (2009) argued that for researchers studying dynamic learning environments, “the focus is on providing an account of changing individuals, changing environments, and the dynamic flow through which knowing occurs” (p. 8). Told through my perspective as researcher, the impressionist tale was a first person, tightly focused and

imaginative rendering of such dynamics. In this respect, I constructed a representation that synthesised the experience of the team into a coherent sequence of remembered events in which I was usually a part. Telling this story from my own perspective had several important effects. First, it kept both subject and object in view by acknowledging my embeddedness in the system under study. Second, it embraced the inherently partial and incomplete nature of knowing. Rather than assert my representation as an impartial and complete rendering of the truth of what happened, I instead provided a representation that allowed the reader to "see, hear and feel as the fieldworker saw, heard and felt" (Van Mannen, 1988, p. 103).

Framed as a negotiation of shot selection, the illustrations offer a view that may be unfamiliar to the reader. This was intentional. A key effect of narratives is to present a world that has a "presumably out of the ordinary or unique character" (Van Maanen, 1988, p. 102). Since shot selection is rarely studied as an experiential phenomenon, researchers presumably do not encounter images of the conscious struggle that coaches and athletes face when making decisions. This makes the impressionist tale a critical element in rendering visible the complexity of coaching shot selection. Van Maanen (1988) reinforced this out-of-character dimension as strength when arguing how "impressionist tales are not about what usually happens but about what rarely happens. These are the tales that presumably mark and make memorable the fieldwork experience" (p. 102).

In terms of the final composition itself, the empirical material collected in the course of research provided the content for a compelling depiction of researcher and participants' experience. Referencing Dollard's (1935) conceptualisation of an effective story, Polkinghorne (1995) described the elements of an effective story as:

- Including descriptions of the context, including values, rules, language, etc.
- Attending to the embodied nature of primary characters.
- Being mindful of significant others.
- Concentrating on character choices and the movement toward outcomes.
- Considering the historical continuity of the characters.
- Producing a story with a bounded temporal period, including clear beginning, middle and end.
- Arranging story elements chronologically.
- Acknowledging the researcher's subjectivity in constructing of the story (p. 16)

Importantly, this rendering included not only the basic elements of an effective story but also analytical points of departure to establish significance. In writing the story of the team, a key aim was to interject with interpretations of the remembered events through the theoretical frameworks employed. In this sense, the story included me, the narrator,

stepping in and out of the experience to highlight matters of significance for the research questions posed.

3.5 Chapter summary

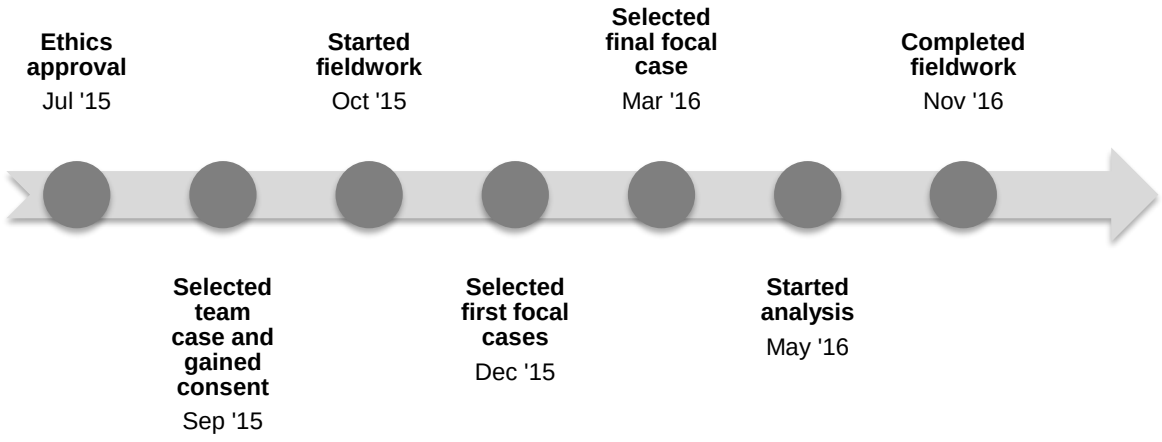
The combination of case study (Stake, 2010), formative intervention (Sannino & Engeström, 2011), ethnographic methods and narrative configuration (Polkinghorne, 1995) provided the methodological tools to capture the coach and players within a team negotiated shot selection over a season. By interacting with the system under study, this methodological approach generated an appreciation of the process by which conflicts in shot selection emerged and changed within a collective, tool-mediated and object-oriented activity system. Using ethnographic methods, including observation, field notes, informal conversation, image capture, document collection and reflexive memos, I recorded this process as it unfolded then engaged in narrative configuration (Polkinghorne, 1995). Narrative configuration involved synthesising the documentation into a coherent story that illustrated how the team negotiated shot selection over the period of study. As a sense-making device, narratives are complex processing mechanisms that can vary in ways that match the complex environments they seek to represent (Browning & Boudes, 2005). Collectively, this combination of methodological tools resulted in an Impressionist Tale (Van Mannen, 1988), told from the researchers' perspective, of how the boys' basketball team navigated shot selection over a competitive school season.

Chapter 4 Method

In this chapter, I explain in detail how research methods unfolded on the ground over time. First, this chapter begins with a timeline of the research process from ethics approval to the completion of fieldwork (see Figure 4). Second, this chapter explains the participant selection process, including background on the site for research. Third, this chapter elaborates on the process of fieldwork itself, including how I negotiated researcher positioning within formative intervention. Fourth, this chapter addresses the ethical considerations relevant to this form of research, including trust, informed consent and privacy. Finally, this chapter concludes with a detailed explanation of how analysis and write up took place, including how the ethnographic documentation became an impressionist tale.

4.1 Timeline of the study

Figure 4. Timeline of the study



4.2 Participant selection

Through purposive sampling, I selected the senior boys' basketball team at Greenwood College to serve as the team case study. Initially, the participants of the study included only those directly involved with on-court matters – that is, the subjects involved in the network of trainings, competitions, meetings and conversations that made up the basketball activity system of the senior team. Primarily, this was the head coach, those returning players from the 2015 team and those invited development players who

previously had not played on the senior team. Later, two new-to-school players became participants after they were included in the senior team. After the first three months of fieldwork, I identified two returning members of the team to serve as focal case studies within the case. Three months later, I identified one of the two new players to serve as the third and final focal case study. Table 12 presents the players and coaches that served as participants. Throughout the course of study, a select number of family members and significant others were invited to participate based on a snowball sampling approach where their perspectives were deemed especially relevant to the case study.

Table 12. Description of players and coaches as participants

Participant(s)	Description	Participants
Players	Adolescent males that attend the selected secondary school and participated on the senior basketball team. These participants were predominantly aged 16 and older with some members of the team under the age of 16.	Troy* Joey* Tommy Alfred Reimar Mark Justin** Campbell** Andrew** Nathan* Daniel Brandon
Coaches	Members of the coaching staff will also be participants, including the head coach and any assistant coaches and/or managers.	Jonah (head coach)

*Selected as focal case studies
**Under 16 years old at time of site selection. Guardian consent was required.

4.2.1 The team-as-case

Through purposive sampling, I identified the senior boys' basketball team at Greenwood College as the team case study. Purposive sampling (Ritchie & Lewis, 2003; in O'Reilly, 2009) refers to a process of intentionally selecting a sample that is representative of a given criteria. The criteria for selection included the following elements:

- Senior level basketball team
- Grade AA secondary school within 30 km of Auckland CBD
- Conducts off-season training (e.g. fitness training and/or skill development)
- The 2016 competitive season was at least the second consecutive year for the head coach in this role

The first aim was to identify a level of basketball where shot selection would be a matter of importance to the strategic success of a team. A secondary school senior boys' team at grade AA level in New Zealand satisfied this criteria. The senior level predominantly includes students in their final two years of high school and aged 16-17 years old. As the highest level of competitive basketball in a school, the senior team is commonly assumed to include the greatest combination of experience, skilfulness and athleticism. Compared to junior grades, greater physical maturity makes the three-point shot more common and thus increases the range of shot decisions available. Moreover, greater experience and skill increases the likelihood that players will be able to dribble, pass and finish with their weak hand – another factor that increases the range of decisions available to a player.

Based on personal observation and discussion with members of the local community, senior boys' basketball at the Grade AA level in Auckland was acknowledged to be a better fit for the study than Grade A teams. This decision was based on the combination of coaching quality, player athleticism, skilfulness and diversity of strategic approaches. As the most populous region in the country, Auckland has a high concentration of competitive senior boys' basketball programmes at the Grade AA level. Seven Auckland-based schools advance to the national tournament per year and, at the time research commenced, an Auckland secondary school won the AA national championship in each of the previous five seasons. With respect to the target phenomena, the presence of competitive teams and diverse approaches to strategy lent itself to a complex understanding of shot selection in that coaches and players would be more likely to have experienced coaches and players who intentionally engaged in the tactical and strategic aspects of the game. This lent itself to shot selection becoming a focal area of interest.

In order to capture the emergent and historical nature of negotiating shot selection, I also included criteria for the team to engage in off-season training and to have a coach who would be entering at least his or her second consecutive year in the role. It is particularly common for secondary schools to offer basketball only during the traditional eight-week winter season of term two. Such a short period did not lend itself to a semi-longitudinal approach with ethnographic methods. Identifying a school team that trained in the off-season would allow me to observe shot selection as a matter that was connected to the previous season. In addition, the observation of basketball activity over a full calendar year would lend itself to viewing shot selection as phenomena that can change with changing foci of the calendar year. Moreover, it was believed that a coach returning from the previous season would lend itself to familiarity with players and knowledge of

player/programme history. These factors would aid the participants' ability to reflect on coaching and playing activity in the specific school setting.

The boundaries of the case were defined as the network of practices that constituted membership on the senior boys' basketball team at Greenwood College. Here, an effort was made to acknowledge that team sport participation must not be confined to the brick and mortar walls of the training facility. Rather, participation also constitutes multiple, overlapping locations and practices that together form a networked activity system.

Snowball sampling (Patton, 2002) was used to invite those family members and significant others who were not initial participants in basketball activity. These were individuals who did not attend training, competition or team meetings but had a perspective that was relevant to the activity system under study. Table 13 presents family members and significant others that became participants in the study. The application of snowball sampling was dynamic as the study unfolded, thus precluding the ability to specify in advance who and how many there would be. General criteria for selection was as follows:

- Identified by a participant as an individual with knowledge/perspective relevant to issues in the study
- Identified by the primary researcher as an individual with knowledge/perspective relevant to issues in the study

Table 13. Description of family members and significant others as participants

Participant(s)	**Description**	**Participants**
Athlete's Families	Family members play a key role in the athletes' sports experiences, particularly regarding scheduling, logistics, emotional support and, in some cases, individual coaching.	Mother of [Nathan] Grandfather of [Nathan]
Significant others	Significant others include non-school coaches, organisational leaders, community influencers, teachers, mentors, peers and others who have some perspective on issues deemed relevant to the issues under study.	Greenwood Sport Director Greenwood sport coordinator Girls' Basketball Head coach Association CEO Professional athlete Independent skills coach

4.2.2 Individuals as focal case studies

Following selection of the Greenwood senior boys' team as the team-as-case, I used purposive sampling to further identify three members of the team to serve as focal case studies. The criteria for focal case study selection was as follows:

- An enrolled male student at the identified secondary school for the 2016 academic year
- Participant on the senior level basketball team in 2016
- An experience of shot selection deemed relevant to the focus of this research

Rather than select the focal case studies at the start of research, I allowed the study to unfold for a period of three months. The intention in waiting was to first observe and interact with the activity system before narrowly focusing on any individual systems nested within. Waiting afforded me the opportunity to locate an individual experience within the collective history of the team and unfolding intervention.

Determining relevance depended upon my understanding of the interactions that made up the activity system under study. In this respect, identifying patterns and conflicts in shot selection demanded an understanding of not only the team's basketball development, but also of the individual players and the lives that they lived in relation to the team. In order to gather this critical perspective, I needed to spend time building trust and rapport with the coach and players of the team. Hanging out, helping the team in training and attending competitions supported this approach. Eventually, I was able to open dialogical moments where players shared their perspectives towards the unfolding training, basketball decision-making and, eventually, shot selection. These perspectives revealed the web of relations that made their experience unique and ultimately, useful in advancing the thesis of this research.

4.3 Site background

Greenwood College sits along an estuary just 15 kilometres east of the Central Business District (CBD). A suburban school, Greenwood College is a co-educational (male and female), public secondary school that serves approximately 2000 students across five school grades (Years 9-13). Greenwood has a strong academic reputation. A recent government review concluded that Greenwood College set high expectations for academic achievement given their strong completion rate and the number of students gaining quality results in end-of-year exams (Education Review Office, 2013). Ethnically, the college is diverse. 35 percent of students identify as NZ European/Pakeha, 10 percent Maori and six

percent Pasifika (see Table 14 for complete breakdown).

Table 14. Ethnic composition of Greenwood College (Education Review Office, 2013)

Ethnicity	Percent
NZ European/Pakeha	35%
Maori	10%
Pacific	6%
Chinese	16%
Indian	8%
Other Asian	3%
Southeast Asian	7%
Other European	9%
Other	6%

An affluent suburban community, Greenwood is one of eight neighbourhoods that make up the Orangewood local board area. The median household income (NZ$84,500) of Orangewood far exceeds other local boards in South Auckland (Auckland Council, 2016). Moreover, nearly half of Orangewood board area residents were born overseas, with the largest groups from People's Republic of China, South Africa, England, India and Fiji. This socioeconomic makeup makes the Orangewood local board area an outlier within the South Auckland zone. Across the zone, there are much higher proportions of Maori (16%) and Pacific peoples (21%), including particularly large concentrations of Samoan, Tongan and Cook Island Maori.

Greenwood College plays at the Secondary school AA level. Jonah is the head coach and has been in the role since 2013. The 2015 season was his third full year. Initial discussions revealed a commitment to programme building and year-round training. The senior boys' team at Greenwood College traditionally conducted off-season training, starting in October during term four then stopping for the Summer holiday. During Jonah's first three years, the off-season sessions were mainly used to address team fitness while introducing junior players to the team culture. Some players also used this period to conduct their own skill development by training on their own, contracting a trainer or receiving help from a family member. Table 15 presents the academic and basketball calendars for secondary schools in New Zealand.

Table 15. The academic and basketball calendars in New Zealand

Month	Academic	Basketball
Dec to Jan	Holiday	Out of school
Feb to Apr	Term 1	Qualifying tournaments Representative trials + Easter tournament Secondary school trials
May to June	Term 2	Weekly interschool competitions Weekly representative competitions
Jul to Sept	Term 3	End of season tournaments – representative (July) End of season tournaments – school sports (Aug/Sept)
Oct to Dec	Term 4	In school, out of season

Competitive sports at Greenwood College grew steadily over 10 years, in accordance with changes in school leadership. The sports director worked with three principals during this period, each of which understood the function of the sports department differently. According to the sports director, the first two principals focused on either of two goals: senior team achievement or school-wide participation growth. At Greenwood College , each code included a senior team composed of the school's chosen best in that sport, regardless of age. Students wishing to play sport but who did not earn selection to the senior team could trial for a junior ("age group") team for which their birth date qualified. The current principal sought a blend between these two levels of participation – increasing achievement at the senior levels and increasing participation at the junior levels. Evidence of this two-pronged path came at the very beginning of research, just after the school broke ground on a multi-million dollar gymnasium. The Sport Director understood the new gymnasium as a resource that could increase gym access, leading to an increased opportunities for participation. Furthermore, such an investment was believed to enhance the attractiveness of the school to local talent, a necessary elements for senior team achievement.

The construction of a new gymnasium symbolised the basketball programmes's evolution over the last decade. When the sports director arrived in 2006, the basketball programme included junior teams but no senior team. Expectations for achievement were low. However, the ethos of the programme changed dramatically in 2013 when Jonah received his appointment as head coach. In his first year, the senior boys exceeded expectations by finishing third in the South Auckland senior grade, their local inter-school competition. In 2014, Jonah's second year, the senior team became first-time champions of their AA second division compeititon, the South Auckland senior grade. They also won the Greater

Auckland tournament, a prestigious citywide tournament for schools that won their respective second-division competitions. In the process, Greenwood College qualified for the secondary school national tournament, another first in school history. During Jonah's short tenure, the scale and culture of the programme matured quickly. During is first tree years, total number of junior teams grew from thee to 14. Attending to the academic reputation of the school, Jonah instituted an academic study hall programme where members of the team grouped together at the library and completed homework before attending trainings. Jonah also encouraged students to play multiple sports and participate in school leadership opportunities. As this research commenced, six members of the team had been recently elected as house leaders in the school.

4.4 Fieldwork

In order to enact the methodology of formative intervention, I assumed a role as team advisor. In this role, my primary duty was to consult with the coaches and players on basketball-specific learning activity in the natural unfolding of a senior school basketball team. In the role of advisor, I supported the learning activity within the activity system under study. Positioned between coaches and players, I attended trainings, team meetings and competitions in a support capacity. I also engaged the players, coaches and parents in conversation about matters related to sport performance and learning, including skill acquisition, on court decision-making, goal orientation, training design, feedback processes, etcetera. My advisory role included some overt pedagogical acts, such as facilitating some training activities (e.g. designing and leading a small sided game), occasionally conducting one-on-one skill learning sessions, and offering guidance to players and coaches about game strategy and decision-making (e.g. during team huddles in time outs). Less formally, I engaged the members of the team in conversation away from the court.

In October 2015, fieldwork commenced. The first set of observations and conversations took place early in the third week of October, not long after the students returned from a two-week school holiday. During this time, I mainly attended off-season training sessions. While there, I watched the sesssions unfold and asked questions of the head coach. In an effort to build rapport with the players, I tried to be helpful and positive at the sessions. Mainly, this included assisting with setup and cheering the team on. After sessions ended, I would hang around the school gymanisum to chat with boys. The goal of these chats was simply to get to know them better. Conversations were very informal and often turned to

American basketball, including their favourite teams and players in the National Basketball Association. During these observations and conversations, I did not carry a notebook or audio recorder. Such tools felt awkward in the context. Instead, I would return home and immediately document my observations on my laptop using the Evernote application.

After observing quite passively in the first few sessions, I became progressively more involved in the sessions. My involvement accelerated after I started having car ride conversations with the head coach on the way to school. Without his own vehicle, the head coach often asked for rides to the school from his partner and/or brother. Once I started the research, the head coach began regularly asking me for a ride because I drove by his flat on the way to the facility. Both at his home and in the car, I asked him questions about his plans for the sessions and we reflected on how the team was going. Given my coaching experience and knowledge of pedagogy, he turned to asking me questions about how to teach certain concepts and how I felt about the previous day's session. Using my phone as a recording device, I regularly captured these conversations in audio notes then transcribed them.

Soon after, the head coach encouraged me to be more active in the sessions. Intiially, my more active stance involved introducing a new activity or small-sided game that we had discussed before the session. I also began suggesting different ways of modifying rules and occassionally stopped activities to ask the players questions or demonstrate a technique. Some of the players began asking me questions about concepts and techniques.

The fruits of this active stance came in multiple forms. First, I developed a deeper understanding of the players' decision-making and conceptual understanding by working directly with them on their basketball learning. Second, helping them on court improved rapport leading to increased openness in conversation. The students were more willing to share things with me after I started helping them in training. Third, increased rapport led to better trust, including a willingness to experiment with new ideas. Given the programme's competitive aspirations, I came to be viewed as someone who could help the coach and/or players reach their goals. As my perspective started to matter to the group, I gained increased acceptance.

In the first week of November, I video recorded the first of many team scrimmages. Using a tripod and handheld camera, I stationed the video recorder on the sideline at centre court to captured segments of five-on-five scrimmages. In most instances, a student on the sideline assisted with video capture by turning the camera to follow the ball. While I also

captured video of some small sided games, the video of five-on-five play provided the primary content for team video sessions. In this sense, video of training served two primary purposes. First, video became a learning tool for the team in stimulated discussion and analysis. Second, video became the empirical material that I could reference in analysis and write up.

In collaboration with the head coach, I co-facilitated four video sessions during term four. Using Sportscode Elite, I watched the video footage on my own laptop then selected sequences to project onto the screen for the players. Lasting anywhere from 30-60 minutes, these sessions involved first watching the pre-selected sequences as an entire group, then reflecting in pairs before returning to the large group to share comments. After identifying shared themes, I facilitated a deeper analysis of the sequences by returning to specific scenes and using slow motion to talk the group through the points being made. The aim of the sessions was to afford the players access to a previously untapped perspective that could stimualte reflection on their own decisionmaking in play. Moreover, spacing the four video sessions over a six week period allowed the team to return to play between sessions and make changes to their decisions. The combination of training and video sessions produced an ongoing feedback loop that continued from term four of 2015 into term one of 2016.

The nature of conversations changed slightly as the study progressed. Specifically, it became clear that many of the boys on the team actively used social media as a mode of communication. When it was not possible to have a face-to-face conversation with a player, I began having conversations through text message. Surprisingly, I felt that some of the players were more open in text message conversations than in-person ones. I also found that I could have multiple conversations with players simultaneously and could easily copy and paste converstion transcripts into my digiital notebook.

4.5 Ethical considerations

4.5.1 Partnership, participation and protection

This study embraced Whitley et al.'s (2014) contention that when conducting qualitative research in communities, researcher(s) must actively cultivate mutual respect with participants by building trust, obtaining informed consent and demonstrating cultural competence. Given the dynamic nature of ethnographic study, maintaining trust required ongoing trust building with participants for the duration of the study. In this fashion, I acknowledged Murphy and Dingwall's (2007) notion of participants as "hosts" who grant

access into the inner workings of their everyday lives and have the power to restrict such access at any given time:

> Ethnographers are guests in someone else's setting and, like guests everywhere, there are clear, if not always explicitly articulated, expectations of proper behaviour. The status of guests is always fragile and depends on appropriate conduct towards their hosts, although this is not necessarily reciprocated. (p. 2225)

I pursued this ideal by working actively to develop and maintain my cultural competence in the participants' contexts. I relied extensively on my history as a coach, educator, athlete mentor and former student-athlete to orient myself to critical behavioural cues. Cultivating competence in these settings required that I engage in extended observation early in the study to develop an initial understanding of cultural norms, expectations, codes of behaviour and communication style. Moreover, the findings of this study were written as a narrative case study, thus providing the participants with an accessible story depicting their experiences in sport learning.

Drawing on the notion of communion (Goodall, 2000; in Bettez, 2014) in qualitative research, I interacted with participants in a way that actively cultivated meaningful connection while simultaneously promoting research goals that actively benefit the participants of the study. The study was designed in a manner that did not threaten or stigmatise any individuals. All participants were protected from deceit, harm and coercion through the design of the project. All participants received an information sheet and consent form about the research to be informed fully of the nature of their involvement. I was known to the participants as a volunteer undertaking research in the team's environment. I had no influence in the selection and/or membership of anyone on any team. Participants could withdraw at any time.

4.5.2 Respect for vulnerability of some participants

In addition, all data on coaches, managers, athletes and family members was collected in the natural flow of the team context through participant observation. I became an advisor to assist in the develppment of the team, including facilitating training activities, leading video sessions, assisting in setup for training, and coordinating statistics of competition matches. Being in the team environment allowed me to document the players' experience while immersed in daily team activities, such as training activities, team meetings, huddles and pre/post-game conversations. The participants were asked to operate as they normally would in the context of secondary school boys' basketball. The game play of athlete participants was video-recorded and photographed so that I could analyse on-court decision-making. All participants, including significant others, were engaged in informal

conversation that may occassionally include audio recording. Participants were invited to share document and artefacts relevant to the research question. I acknowledged that the participants were the local experts because they were sharing information that would enable me to tell a story about their decision making. Lastly, participants were asked to conduct member checks by reviewing case study write ups, including providing feedback on any concerns about misrepresentation or inaccuracy.

4.5.3 Informed and voluntary consent

I made initial contact via email to the Sport Director and head coach of the school idenified as a possible location for study. Once I obtained consent from the principal, coach and sports director (see Appendix D for Site Access Consent), I arranged an information session for members of the team where I presented the details of the study and provided an opportunity to ask questions. The information session opened an opportunity to present the goals of the study, my background, and to answer any questions that the potential participants had. I then sent home an information sheet (Appendices B and C) and consent form (Appendices E, F and G) for their consideration to take part in the research. For members of the team under the age of 16, a parent/legal guardian consent form was provided in addition to an assent form for the athletes themselves (See Appendices A1 and A4).

Contact details of athletes and family members were collected in-person at the information session. This information was collected through a consent form (See Appendices A1 to A6). For members of the team unable to attend the information session, I asked the head coach to facilitate an email introduction using the same third-party referral process outlined above. For any individuals identified as potential participants through snowball sampling, a third-party referral was used in the same fashion as outlined above.

4.5.4 Avoidance of conflict of interest

My active involvement in the team had the potential to confuse players and undermine the coach's authority. However, both the head coach and players were used to having assistant coaches and/or advisors attend trainings. During the head coach's tenure with the Greenwood College boys' basketball, the team had previously employed advisors. The school sports director hired two African Americans in consecutive seasons to serve in this role. Considering the head coach's age and relative inexperience as a coach at the senior high school level, the sports director had identified possible mentors for him in the early stages of his career. Following completion of the 2015 winter season, Jonah asked the sports director if he could instead choose his own advisor for the coming season. In this

respect, Jonah viewed the research project as an opportunity to introduce to his team an American coach with an understanding of talent development and youth development who could support both the team and his own professional development. On this basis, my introduction of an advisor to the team was not unfamiliar to the head coach and eight students that had participated on the team in the previous two years and were now returning for the 2016 season.

To prevent additional conflict, I regularly asked the coach if he was ever uncomfortable with me or felt I was overstepping my position with the team. Repeatedly, he said this was not the case. To futher alleviate role conflict, I focused my behaviours on baskebtall-specific learning and did not engage in acts that the coach and I agreed were exclusively his responsibility as head coach. For instance, I did not verbally reprimand nor punish players for behaviours that violated team rules/expectations. The head coach always spoke first in team huddles and I only spoke if and when I was invited to. I never challenged the head coach in front of the team and made it a point to not contradict positions that he had made clear to the group. I was not involved in the selection of players to the team nor playing time decisions in games.

4.6 Analysis

Through narrative configuration (Polkinghorne, 1995), I engaged the data in order to construct a case that illustrated how the coach and players negotiated shot selection. Organising the ethnographic data into an emplotted case not only deepened my understanding of how team members experienced this complex phenomenon but also produced an artefact (the impressionist tale) that embodied this understanding. Narrative configuration involved a process of synthesis where I brought elements from the data together into a coherent whole. Initiated during the data collection process, the case took form as descriptions of events and happenings that I configured by means of a plot (Polkinghorne, 1995). The key challenge of this analytical process was to construct a coherent story that captured the issues faced by the members of the team. In this section, I explain how narrative configuration unfolded and conclude with an overview of the composition of the narrative.

4.6.1 Fabrication as a process of story making

Constructing the narrative occurred through fabrication (Holbrook & Pourchier, 2014). Whereas narrative construction (Polkinghorne, 1995) refers to the general notion of

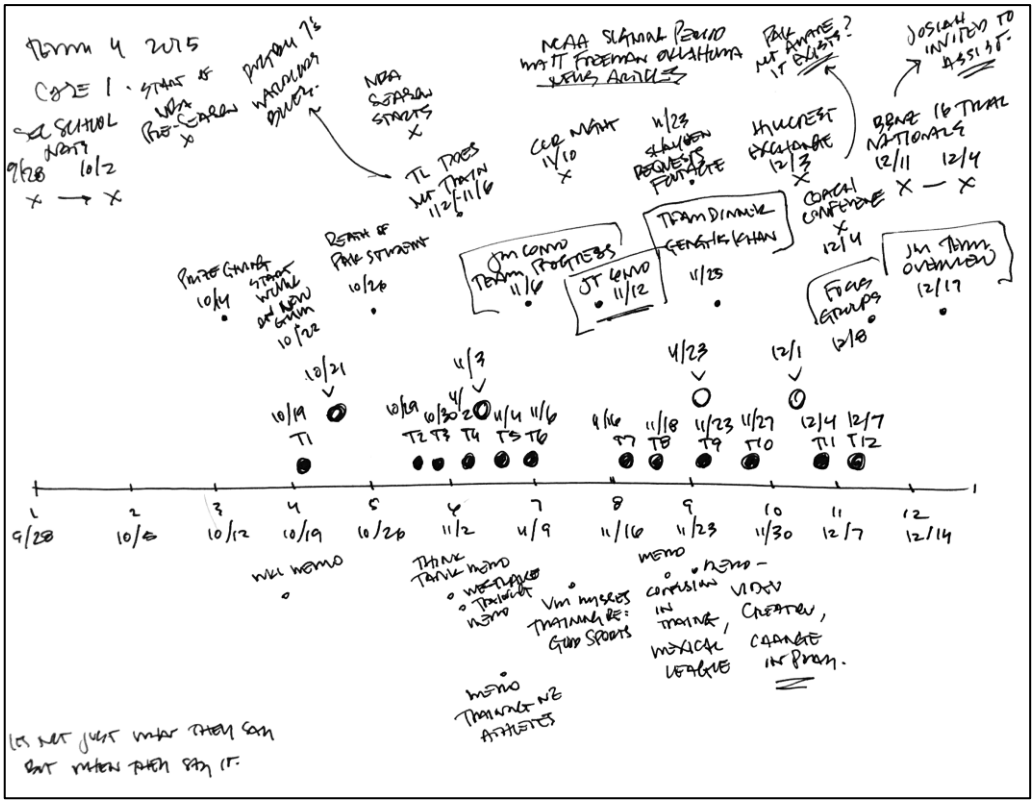
synthesis into a whole, fabrication refers to the actions taken to craft the story itself. In this way, fabrication is the craft of story making, or alternatively, the "activity of combining, moulding, and/or arranging elements into a whole for a particular purpose" (Markham, 2012, p. 338; in Holbrook & Pourchier, 2014). Fabrication borrows from art-based modes of inquiry (Springgay, Irwin & Wilson Kind, 2005), including a view of research practice as equal parts researcher, teacher and artist. Irrespective of one's disciplinary orientation or epistemology, research has been regarded as an act of storytelling that relies on diversity in craftsmanship (Booth, Williams & Colomb, 1995). In crafting the story of the team, I was challenged to "think through data, theory, words, images and lived experiences" (Holbrook & Pourchier, 2014, p. 755) in a way that captured the complexity of shot selection over a competitive basketball season. To this end, fabrication involved a threefold process of hoarding, mustering and folding/unfolding/refolding (Holbrook & Pourchier, 2014). Collectively, these concepts gave character to a nonlinear process that did not unfold in a straightforward manner.

First, hoarding involved gathering those elements that had potential for relevance for the story to be told, including the documented fieldwork of field notes, audio transcripts, images, analytical memos, video footage and written memos. Throughout the course of study, I inputted this empirical material into a digital notebook that could be easily referenced. At the end of fieldwork, I added any material that had not yet been digitised. For field notes that were written in a paper notebook, I transcribed the notes in digital form and scanned any hand drawn images. Audio-recorded conversations were converted to digital notes through transcription. Images and documents were added as attachments to digital notes.

Second, mustering involved calling together these elements in ways that helped structure a plot for the story. This began by organising the digitised version of empirical material chronologically. All field notes, audio transcripts, images, analytical memos, video analyses and reflections were labelled by day then categorised by week and term. This organisation allowed me to recall the team's events at any given point of the year and review all relevant notes, comments and images from that time period. As I read through these elements and reflected on the experience of the team, dominant storylines emerged. In order to make these storylines visible in relation to the sequence of events, I hand-illustrated story maps (See Figure 5 for an example). These maps visually represented the flow of events over time and afforded a reading of the relationships between moments in play, subject comments and the circumstances surrounding them. As tools that visually

represented the unfolding experience and potential story arc, I organised these maps into layers: (a) months of the year; (b) terms of the academic calendar; (c) dates of training and competition; (d) dates of team film session; (e) dates of notable comments from coaches and players, (f) dates of notable comments from my own analytical memos.

Figure 5. Example of a story map from term four of 2015



To convert these maps into an impressionist tale (Van Maanen, 1988), I engaged in folding/unfolding/refolding as the penultimate act of fabrication. Crafting the story required an iterative process of reading notes, drafting vignettes and mapping events that led to continued re-drafting and re-reading of theory. This iterative process produced an initial version of the story that I progressively iterated over time. The intention behind this process was to produce a story that effectively captured the coaches and players' experience negotiating shot selection. Critically, the goal was not to produce a complete version of the experience, for any story being produced would be necessarily incomplete.

4.6.2 Impression tale composition

Through an impressionist tale (Van Maanen, 1989), I represented my understanding of how the team at Greenwood College (researcher included) negotiated shot selection over

the course of the 2015-16 season. As the outcome of fabrication (Holbrook & Pourchier, 2014), I "comprised a series of remembered events" (Van Maanen, 1989, p. 102) into an emplotted story. Importantly, I organised the story in such a way that the reader could be exposed to the conditions, tensions and events that effectively illustrate the complex social realities of the team (Cushion, 2007; Jones & Wallace, 2005). As Van Maanen (1989) suggested, impressionist tales are "a representational means of cracking open the culture and the fieldworker's way of knowing it so that both can be jointly examined" (p. 102). The intended goal of this process was to create a means for the reader to think about shot selection pedagogically, holistically and contextually.

The final composition took form as a series of three cases, each constructed around a term in the academic year. My analysis of the fieldwork revealed that qualitative changes occurred by term, such that conflicts in shot selection emerged in part from structural constraints that followed changes in the academic calendar. Moreover, I ordered the cases chronologically in order to illustrate the flow of events over time. This chronological ordering reinforces key tenants of the orchestration framework. According to Jones and Wallace (2005), the essence of orchestration is to "instigate, plan, organise, monitor and respond to evolving circumstances" (p. 128). On this basis, the chronological structure of the cases reinforces how coaching is contingent upon temporal conditions.

In addition, the within-case structure followed a three-part format. In the first part, each case began with a representation of the general atmosphere of the team, including the structural changes that were constraining basketball activity. Part two focused on a central conflict in team shot selection that emerged from these conditions, including the events, decisions and interpretations that precipitated the rise and eventual resolution of the conflict. Part three specifically highlighted the experience of an individual player within the team during the respective period. The aim of an individual focus was to intentionally include the voice of the athlete so that coaches could empathise with their experience. In so doing, I connected the events of the team to the wider network of practices that constitutes each individual's ecosystem.

Leveraging the qualitative case study design, each three-part case relied extensively on rich case study material. This included observation field notes, direct quotes taken from audio-recorded conversations and images. Importantly, each case also includes selective use of screenshots, taken from video recordings, to highlight a meaningful offensive possession from training or competition. Combined with a moment-by-moment written

description of the possession, these screenshots reflected an attempt to capture the embodied nature of decision-making. A key challenge in the composition of the narrative was to represent movements through words. Through screenshots of critical moments in possessions, I attempted to use image to illustrate what the embodied character of decision-making looked like.

Chapter 5 Case findings

Chapter five presents the study findings as three chronologically ordered case narratives. Told from the researcher's perspective, each case narrative unfolds in three parts. The first part of each case sets the scene by depicting the conditions for basketball activity, including time of year, phase of the season, composition of the roster, nature of training, mood of the team and any coaching or organisational objectives for that period. Part two depicts how the members of the team negotiated shot selection during that period by focusing on shot decisions in relation to a broader issue in offensive decision-making. This second part illustrates how collective negotiation unfolded during the period, including specific attention to learning actions taken by the coaches, players and researcher. Part three focuses on the experience of collective shot selection by an individual player, including attention to how the individual player made meaning of shot selection in relation to the dynamics of team, prior history, personal motivations and neighbouring systems. Importantly, the third part highlights the interconnections between team dynamics and the constraints of the participants' personal lives.

In Case one, the Greenwood senior team learned what it meant to take a good shot in pick-and-roll situations. Sparked by a disappointing 2015 season, fourth year head coach Jonah decided to use off-season training in term four to move away from his traditional emphasis on set plays, rote drills and fitness. Acknowledging his players' struggle to make effective decisions when set plays broke down, Jonah and I introduced modified games and film review to improve their game understanding. After instituting a rule to start each possession with a pick-and-roll, conflicts in shot decisions emerged when ball carriers forced the ball into crowded situations as teammates stood and watched along the perimeter. During film review, conversations revealed previously unconscious habits and the need to search for a good shot throughout a possession. Over time, changes in offensive play emerged as ball carriers increasingly passed out to teammates moving into open space on drives to the basket. As the group adapted to the new emphasis on reading the play and taking a good shot, Joey felt conflicted in his personal style of play. Joey played shooting guard on his other teams and used scoring to prove to doubters that he was a good player.

In Case two, the Greenwood team learned motion offence in preparation for the competition season that lay ahead. As the new academic year began, Greenwood received an invitation to the Premier grade qualifying tournament. In addition, two new

players joined the team and Jonah conducted official trials. After a successful experiment with modified games and film review in the previous term, Jonah entered term one with the goal to create a new offensive system based on flexible rules and searching for good shots. As most of the team embraced the four-out, one-in motion offence being developed, Troy and Joey struggled to let go of old habits. The conflict manifested during a friendly match against St. Anthony's as Joey and Troy took difficult shots that contradicted the team's new philosophy. For Troy, his on-court struggles stemmed in part from the high expectations he felt as the top athlete in the school, including an obligation to give back to the people who had supported him. Consequently, Troy sometimes played 'hero ball' to win the game on his own.

In Case three, Greenwood's motion offence progressively matured during a period of overlap between school and club season. After not qualifying for the Premier grade, Greenwood re-joined the Tuesday night South Auckland senior competition for the winter season. Following improvements in offensive play at the qualifying tournament, the South Auckland senior competition afforded the team space to build on their momentum. Unexpectedly, the word 'flow' became a common way of describing the team's new offence, a fluid adaptable style where nothing was forced. Confidence in the offence peaked during a one-off match against a U16 national select team. For Nathan, 'Flow' challenged him to play in new ways. Nathan joined Greenwood from a neighbouring school and wanted to be accepted by the team. To avoid shots that might "look bad" to his new teammates, Nathan initially hesitated to shoot. Nathan struggled to reconcile differences in offensive play between Greenwood, his representative team and a weekend skills training academy.

Ledger (in alphabetical order): Conv, A = Conversation with Alfred; Conv, C = Conversation with Campbell; Conv, G = Group Conversation; Conv, J1 = Conversation with Jonah; Conv, J2 = Conversation with Joey; Conv, J3 = Conversation with Coach John; Conv, J4 = Conversation with Justin; Conv, N = Conversation with Nathan; Conv, R = Conversation with Reimar; Conv, T1 = Conversation with Troy; Conv, T2 = Conversation with Tommy;

5.1 Off-season training, the pick-and-roll and learning not to 'force it' (Case 1)

5.1.1 Introducing modified games to off-season training (Case 1, Part 2)

Following the end of a disappointing 2015 season, Greenwood's young head coach declared an intention to modify his coaching. Jonah's controlling approach, including a

traditional emphasis on intensity, set plays and rote drills, had less effect on a group of younger players who were new to his coaching style. Sensing the boys did not understand the concepts that underpinned the drills and set plays, Jonah wanted to focus more on 'learning' during training. As an advisor to the team, I worked with Jonah to craft a new pedagogy that would help players learn to read situations on their own, without coach instruction or a scripted set play. Implemented during a period of off-season training in term four of 2015, we introduced two new coaching tools: modified games and film review.

5.1.1.1 "They're not getting the concept, the soul of the thing"

Basketball offence involves three phases: (a) fast break/transition; (b) secondary break; and (c) set offence (Ortega, Cardenas, Sainz de Baranda & Palao, 2006). Under Jonah's coaching, Greenwood typically emphasised the fast break.[6] 'BLUE,' their full court trapping defence, deceptively baited opposing ball handlers into corners of the court where they could be double-teamed and forced into risky passes. Especially when playing against less skilful ball-handlers, Greenwood employed a trapping strategy to collect steals that would lead to open layups. Unfortunately, Greenwood played so frequently in the fast break phase that they played rarely in set offence phase. Set offence differs in important ways. When the offence cannot score on the fast break, they must self-organise within the half court boundary. [7] With less court area, not only does the size of the available court space shrink, but the concentration of players in that area also increases. Consequently, the offence must deliberately strategise scoring opportunities. Coaches call this half-court offence.

Greenwood traditionally used set plays for half court offence. Common to many levels of basketball, set plays were static scripts that involved a pre-established sequence of actions linked in a specified order and set in motion at a given signal. Typically, Jonah would call out the name of the set play to the ball carrier as he walked the ball across the midline. To cue the other four players into their starting position, the ball carrier would then relay the play call through hand gestures and a loud verbal command. Once the players moved into the correct position, a pass typically initiated a sequence of scripted actions. While players would sometimes 'go off script', Jonah expected everyone to remember the

[6] When playing in transition, the defence has little time to organise themselves because the offence advances the ball suddenly upon a change of possession.
[7] Under FIBA rules, offensive teams have eight seconds from the start of a possession to advance the ball beyond the half court line. Once advanced, it is a violation to cross this line and return to the 'backcourt.' These two rules effectively produce the set offence phase of play where the offence play inside the half court line.

actions required of their position and to follow them, as outlined. In training, Jonah historically devoted time to reviewing the set plays that everyone needed to memorise for the game. In this way, not remembering the play would prevent some players from entering into the game. As a learning aid, Jonah created a playbook with visual diagrams and step-by-step instructions of the set plays.

At the end of the 2015 season, Jonah started to question set plays for the first time. His coaches had used them when he was a player and previous Greenwood teams had employed them with some success, including the 2014 team that qualified for the National tournament. Unfortunately, an overreliance on set plays was problematic. When a defender disrupted the sequence or a player deviated from the script, play would immediately and unexpectedly shift into a situation that called for something different from what had been planned. In this respect, set plays would lock the players into movements that became "rigid with few chances of evolution" (Greghaine, et al., 2005, p. 18). Reimar, admitted that he and others would "get stuck" (Conv, R) when plays did not work as designed. He said, "When a play breaks down a lot of us get stuck because we don't know what to do" (Conv, R). Joey shared a similar feeling:

> [Last year] we only had one play and after you ran the play you don't know what to do next. You pretty much stand there and just watch.. [laughing] … Just watch what's happening. It's not like a team. (Conv, J2)

For Jonah, set plays had symbolised more than just a system for half-court offence. Set plays had suited Jonah's model of coaching based on "hard work and no excuses" (Conv, J1). In both training and competition, Jonah believed in respect for authority and following instructions. He implemented this approach through detailed practice plans, running as punishment, 'growling' for not following instructions and, above all else, intensity. Jonah expressed that coaching model in the following way:

> [Practice planning in my first year] was usually the day before. I was very meticulous...I was super structured when I first started coaching. It was five minute drill...break..five minute drill. Its kinda like..its kinda how I was in video games. It was really, really structured. As the years have gone by, I learned that sometimes that's not what players like… so over the years it would be serious drill, structured drill, something fun in between, structured drill, something fun in between, and then last year it was serious drill, something structured in between, and then intense… like, it doesn't have to be structured, but it has to be intense. (Conv, J1)

Jonah's emphasis on instruction, drilling and intensity contributed to an atmosphere of compliance. During training, Jonah expected his team to follow his rules. When competitive matches arrived, he expected player to run the play. Unfortunately, Jonah's

strict approach resulted in players followed scripted actions without truly understanding the rationale for the actions themselves. That conflict was especially noticeable during the 2015 season. Many Greenwood players did not understand the concepts that underpinned a play's design. Jonah recalled, "I used to come in, tell everyone what to do, expect it to get done, leave. They're working hard but they're not getting the concept, the soul of the thing".

The eldest of four, Jonah had constructed a strict coaching approach from the way in which his 'tough' Tongan mother raised him and his four siblings. After migrating to New Zealand in the 1980s, Jonah's parents separated when he was nine. A nurse and elderly caregiver, his mother took care of the family with financial support from his father, a journalist who eventually returned to Tonga. Jonah saw his mother as the one who set high expectations of respect and concern for family. When one of his siblings made a mistake, she punished all of them. He described that approach as "anything good happens, it's on everyone; anything bad happens, it's on everyone" (Conv, J1). As a coach, Jonah took that message to heart. He once grew angry when some Greenwood players ate in front of their teammates without sharing. Jonah then scolded the team. He recalled saying, "if there isn't enough food to go around, don't eat at all. If you eat, everyone has to eat" (Conv, J1). In these respects, Jonah had always emphasised family in his coaching:

> For us it's just been a lot of commitment from, not just from people within the school but people out of the school. A lot of my family and friends have helped establish this programme. I think everyone's worked hard. No one's made excuses. It's a collective, family effort. (Conv, J1)

After completing his third year as Greenwood's senior coach, coaching was still quite new for 23-year old Jonah. A former head boy, he graduated from Greenwood in 2010 before enrolling at university in 2011 to pursue a Law and Arts degree. A year later, his younger brother and stepbrother decided that for their final year at school they would play basketball instead of rugby. Without Jonah knowing, they wrote his name in as head coach of the Greenwood Under 19 boys' team. While Jonah did not have any formal coaching qualifications and worried coaching might distract from his studies, he loved sport. When he played on school teams, Jonah often mentored younger players who were new to his teams. At University, he spent hours talking basketball with his friends and "loved managing teams" (Conv, J1) in video games. He read biographies of American basketball coaches like John Wooden and John Calipari and devoted many hours to Total Club Manager, a video game based on Premier League Football where you buy and sell players

like the general manager of his beloved Arsenal.

Jonah impressed the Sport Director in his first year as a coach at Greenwood. The Under 19 team surprised the sport director by playing the senior team close in scrimmages and advancing to the semi-finals of the local Under 19 competition. When the senior team head coach position opened after that year, Jonah became a candidate despite being only 19-years old. The Sport Director knew Jonah from his days as head boy and liked to recruit former students to coach school teams. Knowing basketball was in a rebuilding stage that would take some time, the Sport Director saw Jonah as someone who would commit to the programme despite few resources, infrequent gym access and low expectations. When Greenwood qualified for Nationals two years into his tenure, everything had fallen into place. After playing for Jonah in 2013, a majority of the 2014 team returned comfortable with his coaching style. They knew to expect intensity, accountability and criticism from their coach. According to Troy, "what Jonah said to us in training we took better, in a way" (Conv, T1).

After qualifying for nationals in 2014, the 2015 team struggled. Following the graduation of experienced Year 13 students, the team added juniors who did not have the same understanding of Jonah's coaching. A dysfunctional atmosphere emerged. Newcomers reacted poorly to his intense style and meticulous approach. He rarely saw the engagement, effort and intensity that he came to expect in the 2014 team. After a disappointing finish at the 2015 regional tournament, Jonah felt he needed to become more positive as a coach:

> This season it changed completely because I had a different set of players…their mentalities weren't the same…structured, but they reacted…and its my fault at the same time…they reacted differently to negative criticism, whereas the players I had before I had them for a few years. These [new] guys come in, they're rookies and I didn't develop them. They had never been in an environment where they're training with me everyday. So, I have to change the intense part. (Conv, J1)

5.1.1.2 Introducing a concept-focus through tactical learning games and film study

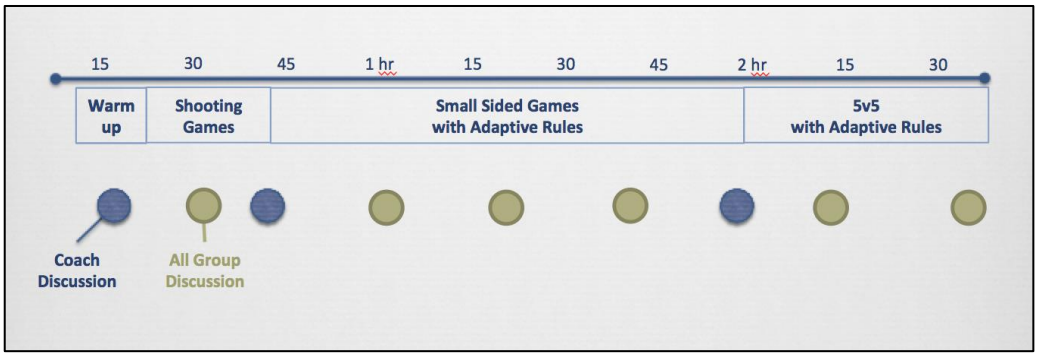
The struggle and disappointment of the 2015 season provided important motivation for a change in coaching approach. Upon reflection, Jonah began to see the cracks in his coaching foundation. Specifically, his emphasis on instruction, drilling and intensity produced diminishing returns in both motivation and player decision-making. As a result, Jonah expressed the need to not only become more positive, but to focus more on player learning. Jonah wanted the new and returning team members to improve their conceptual understanding, what he described as the "soul of the thing" (Conv, J1). While not explicitly

directed at shot selection, Jonah's concept-focus implied a need for players who could read the game independently of coach instruction or scripted action.

Jonah initiated the change in his coaching during off-season training in term four of 2015. Off-season training became my entry point to the basketball activity system of Greenwood senior boys' basketball. The major change involved a shift in training design. Rather than ask players to memorise scripted set plays, training would instead focus on improving game understanding. To pursue this approach, two new coaching tools were introduced; modified games and film review. First, modified games involved organising the players into live game scenarios with strategically designed rules that would force them to solve the problem of the game. The intention behind this approach was to move away from prescriptive rote drills and set plays to situations where the players had the freedom to find solutions form a multitude of options. The desired effect was to encourage players to read the situation then adapt their own behaviour to fit the situation.

As an advisor, my role involved helping Jonah and the team through this transition. At training, I worked with Jonah to design games and support player learning through them.. When an issue in play became especially pronounced, we stopped play to chat and ask questions. In some instances, we used stoppage of play to walk through a situation, re-trace a decision or highlight alternative choices. Figure 6 shows how this approach frequently unfolded in training sessions during this period. Importantly, we did not entirely eliminate rote drills. Instead, we isolated them during the first 20-30 minutes of the session, where they predominantly emphasised shooting and finishing techniques. As the term unfolded, the structure for training came into clear focus. After an initial warm up, we spent the first 30 minutes doing structured shooting and finishing drills before nearly two hours of modified games. Modified games often started with small-sided versions before progressing to the full court and five-on-five. For Jonah, games provided the dual benefit of simplicity and representativeness of competition. He said, "I'm enjoying the simplicity of this. I used to be drill, drill, drill but these games allow everyone similar reps that actually put you in the spot of a game situation" (Conv, J1).

Figure 6. New training workflow during term four workouts.



To reinforce the emphasis on conceptual understanding, we also introduced group film sessions. After recording game play in training, we used that footage as the stimulus for open discussion in a classroom setting. Importantly, this footage provided the mirror material (Engeström, 2009a) necessary to analyse conflicts in decision-making that emerged. Over an eight-week period, we conducted four sessions that lasted anywhere from 30-60 minutes and took place in the Pavilion, a bungalow classroom adjacent to the rugby fields and a short walk from the gymnasium. On its own, the capture and use of video as a learning tool was something that the team had never done before. With little in the way of support staff and resources, the team had never consistently recorded games and did not video-capture play in training. Fortuitously, a teacher in attendance at their final game of 2015 had video recorded the game. After watching this footage for a few weeks, Jonah commented that it had inspired him to make a list of things to work on for the term. In this way, Jonah himself benefited from video as a learning tool:

> Ya know…I wrote this list after watching that video. I realised that we don't have much video around from the last two seasons. I've learned more in watching this one game than in three years of coaching the team! (Conv, J1)

5.1.1.3 Term four, the off-season

Term four training sessions took place after school during a period of relaxed sport participation. In total, 12 sessions took place. Each started at 3.30 pm in the afternoon. A few years ago, Jonah started term four training to mark the off-season. With summer sports and exams in full swing, Jonah had regular access to the main gymnasium. This degree of gym access was rare for a campus with limited facility resource. Six months earlier, during the winter season, 14 school teams shared just one full court and one-half court. That bottleneck restricted most teams to a single one-hour session per week. Now, the summer sports season meant unfettered gym access and the space to play and train without formal matches. The absence of matches meant no transportation and uniform logistics to arrange. With such a growing sports programme, competition imposed a

significant administrative load on the sports department. On a part-time basis, Jonah helped the sports department to arrange travel then communicate with teachers and parents regarding conflicts in team participation. In this regard, term four training took place in an empty gym independent of the gaze of parents, fans and other observers. During the entirely of this period, no single parent entered the gym to observe training.

In addition, term four training brought changes to the roster. As is customary in school sport, the transition to a new season meant that year 13 players graduated from the team and younger players were promoted. Four Year 13 students stopped training with the team altogether, including the team's starting point guard, and Paula, Jonah's younger brother. The team did return 2015 MVP Troy, a guard/forward who had been with the senior team since year nine. 2016 would be his final year at Greenwood, making him the only player left from Jonah's first team in 2013. In total, eight senior players returned from the 2015 team. For Jonah, these eight players reflected the core of the team moving forward. In addition to Troy, three of the eight returning players played significant minutes for the team in 2015; Joey (guard, Year 11), Tommy (guard, Year 12), and Mark (guard/forward, Year 11). The others trained regularly with the team but played only occasionally in games.

The loss of experienced Year 13 students afforded these returning Year 11 and 12 students the opportunity to assume more responsibility, both on and off the court. Joey and Tommy acknowledged that they were moving into a leadership role on the team and that younger players would be looking to them for guidance. While Tommy regarded this change as a "need to set a good example" (Conv, T2), Joey felt a more discernable pressure to not make mistakes. Joey said, "The pressure is on us. What you do is what they do. You're the leader on your team and sometimes its really hard because if you don't know what to do, they won't know what to do" (Conv, J2).

The training group included some students that had not yet played competitively for the school but did play on the outside courts during free periods. During his time as head coach, Jonah routinely heard of students who played well at lunchtime or after school but did not trial for school teams for fear that they were not good enough. In line with his philosophy to make basketball 'cool', Jonah encouraged these students to train informally so that they could get a feel for the sport and potentially trial the following year.

Finally, Jonah selectively invited a dozen juniors to join, mostly Year 10 and Year 11 boys. Most did not make the senior team in 2015 but did play for a junior team. Campbell came

to basketball in 2015 after playing soccer at a representative level. When soccer “got boring,” he tried basketball and started to enjoy it. In 2015, he played for the Under 15B team, his first time playing with an organised basketball team. Coming into term four, Campbell’s prior observations of senior training made him uneasy. Campbell said “When I used to come to training, if one person would mess up then everyone would run. That’s why I was nervous to go because I didn’t want to mess up and make everyone mad” (Conv, C).

5.1.2 Negotiating the pick-and-roll (Case 1, Part 2)

After introducing modified games and film review, shot selection emerged problem during the pick-and-roll scenarios being practised. Unlike the closed nature of set plays, the pick-and-roll was an open-ended action between two players that presented the ball carrier with multiple options. Conflicts in shot selection emerged primarily when the ball carrier made his read of the initial screen. Some ball carriers consistently drove ‘head down’ into a crowded defence before taking a heavily challenged shot. Film review of play in training stimulated awareness to not only the challenged shot, but also the subconscious habits of players off the ball to crowd the middle of the court or stand and watch from the three-point line. Conversations during and after film review revealed previously hidden concerns about who was to blame for a mistake. Over the term, a shift in decision-making occurred. In relation to the ball carrier, players without the ball began to move into space. At the same time, the ball carriers increasingly stopped attempted challenged shots. Jonah referred to the new form of pick-and-roll play as “thinking basketball” (Conv, J1).

5.1.2.1 More freedom than set plays

In the movement away from scripted set plays, the pick-and-roll provided Jonah and the team an alternative option for half-court offence (Lucey, Bialkowski, Carr, Yue & Matthews, 2014; Marmarinos, Apostolidis, Kostopoulos & Apostolidis, 2016; McIntyre, Brooks, Guttag and Wiens, 2016). Within every ball screen exists the potential for a cascade of decisions (Deleplace, 1979; in Grehaigne, et al., 2005) where players respond to the situation “not as an application of a preconceived plan but as an exploitation of the potential in a given situation” (p. 37). In principle, every pick-and-roll begins the same way. The ball handler receives a screen from a teammate who then moves into open space. The screen acts as a human barrier, or wall, that obstructs the defence and opens space for attack. Together, the ball handler and screener enact a two-man collaboration of movement, spacing and timing that, as Taylor (1995) describes, can unleash an unpredictable array of options:

> On one level it is such a simple play, but on another it is full of nuance, with options on top of options. Like good sleight of hand, if it is done deftly enough it will succeed even though the opponent has seen it so many times before. (para 3)

The nature of possibilities in a ball screen situation depends upon many factors, only some of which are within the control of offence. A well-angled and timed screen can catch the defensive player off-balance, forcing him/her to both chase after the attacking ball handler while finding a path around the human wall. At the same time, defenders can counteract screens. Prepared defenders might sense the initiation of a pick-and-roll and actively restrict the offence's options, such as by 'hedging' the screen to force the ball-handler away from the middle of the court or 'going under' the screen to cut off the ball-handler's path to the basket (McIntyre, Brooks, Guttag & Wiens, 2016). In this respect, the outcome of this situation will depend on a confluence of elements: where and how the screen gets set, how offensive and defensive players navigate the screen and where the off-ball players move in relation to these actions. For this reason, Tommy (Year 12) felt that pick and rolls provided more freedom that set plays. He said, "Usually it used to be one or two options and then we'd just memorise those options. But since we've been practising pick-and-rolls it gives us more freedom, like more options to add to our game" (Conv, T2).

The freedom of the pick-and-roll suited the shift to modified games during training. An early experiment with a two-on-two half-court game employed a rule that the offence must start their turn with a ball screen before attempting to score. Training sessions typically ended with full court, five-on-five scrimmages that included a rule to start each half court offensive possession with a pick-and-roll. While the boys had seen ball screens in American professional basketball, few had ever used them in organised team training or games. On the first day, Jonah noticed that some had already started hedging screens without instruction. He had not expected that the players would enjoy being thrown "into the deep end" (Conv, J1) and was "surprised that they want to keep playing" (Conv, J1). At the next session, the group played three-on-three full court with a rule that each team must start each possession with a pick-and-roll. The session unfolded in the following way:

> Three-on-three in the half court. The series lasts 7-8 minutes. Teams of three form with offence sprinting from half court to a waiting defence. If defence stops offence from scoring, they become offence and a new defence comes on. Each team has one ball-handler, one screener and one corner fill. The ball handler and screener can start anywhere along the three-point line. Jonah's feedback is directed primarily to the organisation of the game, "One thing you're allowed to do is start the ball wherever you want. You can start the ball on the side, you can start the ball in the middle". He does not make any direct comments on the play itself. (Field note, 16 Nov 2015)

As play unfolded, we continually adapted the rules. For instance, some players often held possession of the ball for excessively long periods. In response, we instituted a four-dribble rule. If a player dribbled the ball more than four times, the coach ruled it a violation and possession of ball immediately turned to the other team. The intention behind this rule was to encourage ball movement and quick decision-making rather than dribbling in one place for long periods.

5.1.2.2 "Reacting to what the defence gives you"

Given its open-ended nature, the pick-and-roll called for a shift in decision-making style. Reimar articulated the shift as a movement from "only one way of doing things" (Conv, R) towards one of "reacting to what the defence gives you" (Conv, R). Reimar noted:

> What we used to do was straight plays and there was only one way of doing things and you'd have to learn that specific way. Umm, with those drills, it opens your mind to just making reads and you don't have to run set plays. It's more reacting to what the defence gives you and what type of reads to make if you actually see something. (Conv, R)

Reimar suggested that the pick-and-roll presented the players with an open-ended situation that asked them to read and adjust according to the options available. For the ball handler, that process became especially important. When the screen opens a clear driving lane to the basket, the ball handler simply drives into the opening. However, the decision becomes progressively more uncertain when the lane is small or non-existent. For instance, the defence will sometimes switch the screen to block the driving path, leading the ball handler into a grey area which multiple decisions; shoot over the defender, drive deeper into a small opening or pass off to a teammate.

Despite the open-ended nature of the pick-and-roll, possessions grew predictable when the initial ball-handler became routine in his actions and initial read. One player caught in this conflict was Reimar himself. Reimar tended to drive into crowds of defenders and, rather than pass out to open teammates, take contested shots (Figure 7). As a relatively short guard, Reimar used quickness and ball handling to drive around defenders and score. Standing just 1.72 meters, Reimar could use the screen to create a one-on-one situation with the screener's defender. He often won these situations against slower defenders by making combination dribble moves and getting all the way to the basket. Jonah was not surprised and said, "Reimar is the quickest guard in school, if not South Auckland region. He's one of our exciting players but at times very frustrating" (Conv, J1).

Unfortunately, not every pick-and-roll resulted in an easy lay-up for Reimar. When he did not have an open lay-up, Reimer would lose the ball or take a contested shot while teammates stood and watched (Figure 7). Since each possession started with a pick-and-roll, Reimar's tendency to drive each time meant his teammates rarely touched the ball. According to Jonah, this conflict appeared in past seasons for Reimar. As a result, Jonah wanted Reimar to play as a more traditional point guard who looked to set up teammates.

Figure 7. Reimar's shot selection in a pick-and-roll situation.

1) Reimar (#12) advances across half court.
2) Jayden runs from left block to screen for Reimar at the left elbow.
3) Reimar uses the screen and Alex leaves Jayden to switch on to Reimar.
4) Reimar uses a quick crossover dribble to drive around Alex at full speed.
5) Reimar attempts a contested left-footed, left-handed layup. (see image)

Missed two.

According to Jonah, the team's previous assistant coach viewed Reimar as a scoring guard who should look to score. Acknowledging the conflict between scoring and passing, Reimar expressed frustration at his struggle with decision-making in the pick-and-roll. He said, "I feel like if the offence breaks down its all on me. I'm supposed to be a point guard and all that. Sometimes I don't react quick enough and make the right decision" (Conv, R).

> Only 7 of 52 half-court possessions have 3 or more passes. Drives tend to signal coming end of possession, with few kick outs and dump-offs to teammates. Early ball-handler's initial actions often involve a drive. Some through passes incomplete due to being deflected or stolen. Passing turnovers are common. (Field note, 30 Oct 2015)

After a training session in early November, Jonah and I talked about how others in the group were progressing. Jonah also saw Tommy struggling. He said, "[Tommy's] patterns are almost predictable. Whereas the drills allow you to not be predictable, he's stuck in the predictable" (Conv, J1). Like Reimar, Tommy tended to drive the ball into a crowd of defenders then attempt a contested shot (Figure 8). Jonah worried that Tommy often predetermined his decision without consciously realising it. Jonah viewed Tommy's play as a 'habit' reinforced by early biological maturity. In 2013, Tommy reached his current height of 1.78 meters and had since stopped growing. As one of the bigger and stronger players in Year nine and 10, Tommy could 'bully' his way to the basket by lowering his shoulder and powering through defenders to the basket. However, Tommy's style created conflict in his first year with the senior team at Greenwood in 2015. With less of a physical advantage for scoring, Jonah asked Tommy to focus on other aspects of the game. Jonah said that Tommy "was always a number one option with Ryan [on the 17A team]. But [Tommy] came in as a rookie with [the senior team] and I was like, 'I just need you to defend and rebound'. He was like "what?!" (Conv, J1)

Figure 8. Driving 'head down to the basket'.

5.1.2.3 "You get to see your habits"

Video from off-season scrimmages provided mirror material (Engeström, 2009a) for members of the team to critically analyse decisions and become more aware of their habits and tendencies. Early in November 2016, discussion during film review centred on the decisions of players without the ball during a pick-and-roll. In watching himself on film, Tommy saw that he tended to stand and watch when he was not the ball carrier. He said,

“[video] opens up so much more for me. I can see all the positive and negative. How I tend to like stand in the corner and just wait for the point guard to do something” (Conv, T2).

Like Tommy, Alfred observed a tendency to ‘ball watch’ when he did not have the ball:

> [With video] you get to see your habits. Like, when you’re not thinking what you’re doing. Like go to the corner. On defence, I give up if I get beat. On defence I just stop, and I stare and ball-watch. Like with rebounding as well, just ball-watch. And then on offence, all the stuff that we’ve been working on. When you’re thinking about it you do it but when you’re not thinking about it, it sort of leaves your mind. (Conv, A)

In observing himself on film for the first time, Reimar similarly noticed that his tendency to shoot straight away came in part from not seeing the position of the other players on the court. Reimar attributed that constrained vision to his short height. He said, “When I’m playing, I’m usually looking at the rim. I’m short so I can’t always see” (Conv, R).

Collectively, Tommy, Alfred and Reimar highlighted the tension between reflective and embodied decision-making (Mouchet, 2005). In these instances, video revealed how ‘ball watching’ and narrow vision were problematic tendencies that occurred independent of conscious control. In raising awareness to such tendencies, the combination of video and conversation pushed the learning process to a second order level where the boys could reflect on their decision-making away from the immediacy of play. In this process, a feedback cycle emerged that reinforced effective decisions while pushing back against problematic tendencies.

In some cases, video helped players better understand when a mistake might not be their fault. For instance, Reimar noticed that the spacing and movement of players without the ball actually constrained his decision-making as the ball carrier. Simply put, close off-ball positioning could result in less space for ball-handlers to move. When teammates crowded the middle of the court, they blocked driving lanes. When guards along the three-point line stood in the corner and watched him rather than move into open space, Reimar had fewer options to choose from when his driving lane closed. Reimar concluded, “Yeah the people off the ball are just as important. Turnovers are not always my fault” (Conv, R). In this respect, Reimar encountered disconfirming evidence of an underlying assumption that when the pick-and-roll ends in a turnover, the ball carrier deserves the blame. By viewing players without the ball as constraints on the ball carrier’s decision-making, Reimar came to see that turnovers resulted from the interdependent movement of players with and without the ball.

Furthermore, video also facilitated connections between small-sided games and full-court five-on-five. Over the first two weeks, small-sided games included rules and cues intended to nudge players into off-ball movements that opened space for the ball carrier to drive. Specifically, we introduced heuristics to encourage those players without the ball to start each possession wide, then read where the ball handler drives and move into open space. We called these actions 'lifting' and 'wheeling'. On any drive, lifting occurred when the nearest guard on the side opposite the drive moved into an outlet position along the three-point line but behind the driver. At the same time, wheeling occurred when the nearest guard on the same side of the drive moved away from the driver (Figure 9).

Figure 9. Tommy (#13) 'wheels' away on a drive by Troy (white shorts).

Initially, the emphasis on lifting and wheeling in modified games did not translate to the full game scrimmages. For Reimar, the purpose of these off-ball movements did not become clear until the video:

> First few drills seemed pointless. I saw how they applied to a real game situation but it's not something you work on…until the video session I saw how it was actually happening. Like drive one way, one guy wheels, another guy lifts. I thought it was just common sense. (Conv, R)

A few of the junior players expressed a similar feeling after observing themselves on video. As a member of the Greenwood Under 17B team in 2015, Johnny (Year 11) experienced the pick-and-roll, but only superficially. He said, "I used to just sprint to the corner and didn't really do anything else. I think now, it's like getting more in-depth. Like usually, our coach used to just say 'ah set a screen here'" (Conv, J3). Campbell (Year 10) had a similar experience. In 2015, he struggled on the Greenwood Under 15B team to

know where to go on the court. He said, “This year, I didn’t know where I should be. Just followed my player on defence and stayed in one spot on offence the whole time waiting for the ball” (Conv, C). After a few weeks of term four workouts, Campbell began to notice the connections between where he was on the court and how that impacted the outcome of the possession. This helped him understand his responsibilities on the court during a pick-and-roll situation:

> Kinda helpful knowing what everyone is meant to be doing. If we didn’t watch the videos and something would go wrong, you’d think it was just your fault. By knowing what everyone has to be doing you’re not just blaming yourself every time. But you’re still … if you’re doing it wrong you know its you and not someone else. (Conv, C)

5.1.2.4 “Don’t plan it in advance”

Jonah described the emerging form of play as “thinking basketball” (Conv, J1). For Jonah, the pick-and-roll sparked a more open and organic form of play where decisions unfolded spontaneously and without predetermined planning. In effect, the players became more open to what the configuration of play presented. In fact, Jonah started to cue the players this way. He began to say, “don’t plan it in advance. Read what your teammates are doing. Feel it" (Conv, J1). For Jonah, there was a satisfaction in seeing players instinctively read each other and adjust positioning. He said, “guys automatically wheel, get to the corner, space…its cool that they’re looking not just at themselves but the other guys” (Conv J1).

Over the course of the term, possessions became more diverse. Initially, the pick-and-roll yielded short possessions with off-ball players standing and watching the ball handler drive then take a quick contested shot. Eventually, possessions included multiple drives and passes with more players touching the ball. As a result, more transitions occurred between on-ball and off-ball responsibility. A player who started a possession without the ball would suddenly have possession of the ball, and vice versa. This dynamic exchange of ball carrier responsibility challenged the players to dynamically switch between an on-ball and off-ball orientation. For instance, Reimar had historically played as the primary ball-handler. However, when he passed out to teammates after his initial driving lane closed, he then became an off-ball player who had responsibility to keep the middle open by moving into open spaces along the perimeter. This shift in orientation itself became a topic of discussion during our final video session in early December:

> Jonah: Same sort of thing happened on this possession. I think … is this you Reimar…so you passed, then you stayed in the middle. Do you guys see that? You can’t plant yourself in the middle. Near the rim, or above the three-point line, even at the free throw line …its

just trouble…you really have to move away from the middle. [video playback]

Vince: *The kickout was made, now as he's driving. So, what are the options Reimar? Where can you go?*

Reimar: The other corner?

Vince: *So, you could have just relocated out to the other corner. That probably would have been fine. But in this case because he's driving middle...*

Reimar: Oh, do I just go up straight?

Vince: *You basically could just wheel each other. That's a classic wheel situation right there. If he drives middle, then you would relocate out to the corner along side him. If you were to drive baseline, then you would kind of lift up to that elbow.* [video playback]

Vince: *Still patient…good spacing, relocation …Ollie gets opposite post…dribble hand off...drive and kick…that's a great possession. That's some really good stuff. That's great stuff.*

Jonah: Do you guys see how much a small little thing like that can make? (Conv, G)

5.1.2.5 Shot selection and the pick-and-roll

Inherent in the team's evolution was an emphasis on taking 'good shots'. During the team's first film review session in late October, the discussed addressed the difference between a good shot and a bad shot:

Vince: *Is it possible to play good defence and have them score?*

All: Yes [head nods]

Vince: *Is it possible to play bad defence and them not score?*

All: Yes [head nods]

Vince: *Then, what do you think is good defence?*

Mark: Containing your man

Joey: Communicating

Other: Talking screens

Other Forcing a deep two

Other: Forcing end of shot clock

Vince: *How about this: What is a good shot?*

Other: Open shot

Other: Get to the FT line

Other: Lay-up

Vince: And what is a bad shot?

All: Forced shot

All: Contested shot

All A deep two

Vince: *Would you say that all contested shots are bad shots?*

All: No

Vince: *When is it ok to shoot a contested shot?*

All: End of shot clock

All: Open three and someone is running out (Conv, G)

The initial collective response, “open shot”, acknowledged that a good shot was an uncontested one. However, the ensuing dialogue showed an appreciation for the nuance and context-specificity of shot selection. The quality of a shot will depend upon the situation. For instance, there are situations where a contested shot suits, such as a ‘buzzer beater’ when the game clock was running down to zero. In this respect, it was implied that shot quality depended on the dynamic of time, score, player confidence, location of teammates, etcetera.

Through continued play in pick-and-roll scenarios, shot selection became an increasingly important fabric of player decision-making. Just as the ball carriers became aware of their tendency to play ‘head down to the basket’ and take contested shots, those who started possessions off the ball came to see how their spacing and movement both afforded and constrained the openness of the shots that were available to ball handlers. This interdependence made shot selection a shared responsibility and a way of defining success within each possession. As the awareness permeated play, the players became increasingly attuned to the movement decisions that resulted in an open shot on each possession. For instance, Alfred and Reimar (Figure 10) coordinated their action in response to how the defence covered the ball screen during a late November scrimmage.

Figure 10 reveals how Alfred had adapted his shot selection in the pick-and-roll to suit the available options. Following Brandon’s screen for Alfred, two defenders moved to cover Alfred while another two moved to cover Brandon’s roll. When Alfred reached the free throw line, four defenders were marking just two offensive players. In effect, the ball screen collapsed the defence into the paint, leaving open space along the perimeter. Rather than force a drive around Alex and into a crowd of players, Alfred stopped his dribble then scanned the floor. In that moment, Reimar did not stand in the corner and watch but lifted and behind Alfred into the open space created by the screen. Reimar’s movement opened a passing lane for an open three-point shot.

Figure 10. Alfred and Reimar reading the ball screen for a ‘good shot’.

1) Reimar jogs the ball across half court and pauses on the right wing.
2) As Alfred sprints out of the right corner, Reimar hands off to Alfred then relocates to the right corner. At the same time, Brandon comes from the opposite block to ball screen for Alfred.
3) Alfred uses the screen, dribbling over Brandon towards midcourt.
4) When Alex leaves Brandon to defend Alfred at the free throw line, Alfred picks up his dribble and holds the ball overhead as Mark and Joey drift over to defend Brandon’s roll to the basket.
5) With Reimar lifting from the right corner into the open space along the right wing, Alfred passes back to Reimar (see image)
6) Reimar catches and shoots a wide open three-point shot.

Made basket.

Earlier in the term, this kind of decision was difficult for Alfred. When asked what had been most challenging to learn during the term, he said, “decision-making off the pick-and-roll. Usually I get stuck and after like, what do I do? I can’t react quick enough. Now, I’m able to see more. I understand how to come off a pick and what to do. I now see it” (Conv, A). Alfred was becoming more comfortable in the pick-and-roll, including the dynamics of spacing and movement that forced him to continually read and adapt. Alfred viewed the pick-and-roll as a contrast to informal ‘pick up’ games at the recreation centre, where decision-making was more “freestyle” (Conv, A) with few restrictions:

> When you play [at the rec centre] its a different atmosphere because there’s nothing restricting you. I find it easier there because I know what to do. There its freestyle and nobody cares. But like now I can see that I have better court awareness. Like coming off screens, that’s what I’ve been practising...being able to read what to do, if my players are not supposed to be where they are, what can I do, how can I adapt?

5.1.2.6 Making sense of the pick-and-roll

Alfred's experience reinforced the idea that pick-and-roll decision-making, including shot decisions, emerged not only from the configuration of players in the moment, but also the prior playing experience, entrained habits, normative roles and socio-cultural influences of the players themselves. While the pick-and-roll afforded more freedom to make decisions, this freedom did not, in and of itself, resolve the problem of rigid play and narrow predictability more common to set plays. In fact, playing in ball screens initially revealed the players' implicit, habitual tendencies that locked tem into predictable behaviour. Whereas set plays impose a small range of decisions from above, entrained habits seem to predispose players to a narrow range of decisions indicative of previous experience. Players like Joey, Alfred, Reimar and Tommy had a history as primary ball carriers who looked to score first, shoot quickly and/or drive to the basket. For them, ball screens initially opened the space to play this way, reinforced by their new role as seniors and unburdened by the demands of a set play with predetermined scripts. At the same time, some of the juniors new to the team came to this space as secondary ball handlers more accustomed to starting possessions without the ball in hand. For these players, the experience of playing in pick-and-rolls reinforced their passive observer role to stand and watch a more skilled ball handler dribble and shoot.

The emergence of these tendencies produced a contradiction between aggression and patience. Ball handlers needed to be patient without becoming passive. At the same time, aggression was good unless it led to a forced decision. This conflict called for a shift in play that could resolve this contradiction and better leverage the diversity of options inherent to the pick-and-roll. Team video sessions provided the critical second stimulus to support the discussion and argumentation needed to become aware of these alternatives. Over time, this process produced new instruments and a change in the object of play that allowed the players to better synthesise on-ball and off-ball actions. In what we described as thinking basketball and looking for a good shot, game play in late November transformed as possessions became progressively more diverse in shot selection. Now oriented around looking for a good shot, cyclical patterns of drive-pass-relocate became more common as the players learned to seek out open shots while largely resisting contested ones. As more passes and drives occurred in each possession, more players touched the ball and exchanged court locations. In this respect, play became more diverse and unpredictable.

For Mark and Reimar, the change in play during off-season training challenged their taken-for-granted assumptions that basketball was about the player with the ball:

> Mark: To be honest, before we thought basketball was all about 'Iso'
> Reimar: Yeah. Iso. On-ball.
> Mark: All about scoring and all that
> Reimar: And assists only come off like fancy passes
> Mark: It gives us a better understanding of how the game works, really.
> Reimar: Without scoring, like how useful players are even though it doesn't look like they're doing anything but they're actually valuable (Conv, G).

The players' evolving understanding had subtle consequences for experiences away from team training. For instance, Tommy began to watch professional basketball differently by watching action away from the ball. He said, "Like I can see off-ball screens now. When I watch the [Golden State] Warriors play, I see Draymond Green sets a pin, how he changes his angle, that kind of stuff" (Conv, T2). Similarly, Campbell was starting to question the content he browsed on his social media feeds. He said, "There's all the mixtape and 'Shift Team' videos and stuff like that, like 'BallisLife' videos. Before I'd just watch everything and say "ahh, so good but now I look at it and I actually just see they're just hogging the ball and not playing as a team and its not helping at all" (Conv, C).

For Jonah, the change in play challenged him to think about the learning process itself. Whereas his childhood experience watching the game on television and playing informally taught him these concepts implicitly, Jonah saw the use of modified games and film review as an explicit way of talking through the learning. He felt it helped the team understand the purpose behind their actions on the court:

> I don't now how to word it, but the boys have been picking up things in a way where... we picked it up in the same way but didn't realise we were picking it up. In my head I've always known that if a pick comes you stay in the corner and you wheel and stuff…naturally, you watch a lot of basketball you play a lot of basketball…now the boys are realising that when you watch a game or play a game, "hey…that's why they do it" that's why I did it in the video game or they did it on the TV. (Conv, J1)

5.1.3 Joey (Case 1, Part 3)

During term four training, Joey struggled with shot selection in the pick-and-roll. As one of the ball carriers that sometimes forced the ball into a crowded middle, Joey felt a conflict of motives during this time. Specifically, Joey felt a persistent pressure to prove 'doubters' wrong, especially members of his community back home who questioned his height and reputation as a strong player. Considering the coaching he received in previous teams,

Joey also identified as a scorer who preferred to drive aggressively and shoot. These motives conflicted with the new style that Greenwood was developing. In particular, the new emphasis on reading the situation and looking for a good shot led Joey to question what style of play was best for him. Our conversations revealed the self-doubt that Joey carried, including the worries that led him to "force something that I thought will work" (Conv, J2).

5.1.3.1 'Pinoy' Hoops: Food, family and basketball

Away from Greenwood, Joey played for the STARS, a Filipino basketball club for families in south Auckland. When he moved to New Zealand in 2010 from Manila, Joey originally played for a rival club on the North Shore. After making the 45-minute drive from Greenwood to the North Shore for weekend trainings for the last few years, Joey decided to change to the STARS when Coach John became programme director. It made sense. John was his representative team coach and team trainings were close to home. When term four ended, Joey moved back to playing with the STARS. Joey noticed immediately that the on-court spacing and movement was different. He said "its hard actually. They don't know where to go" (Conv, J2). In Joey's view, the Greenwood term four trainings were more structured. He said, "Spacing. Just tell people where to be. You have to be here, you have to be there. Before it was just random, do whatever you want. Now you can just tell people where to be, pretty much just spacing the court" (Conv, J2).

I caught up with Coach John at a STARS Saturday training to discuss the programme. Seated on a bench along the wall at Auckland Central High School, teenage boys descended upon Coach John to show 'mano" before they left the gym. An honouring gesture, mano was performed as a sign of respect to elders. Boys knelt before John then pressed their forehead to his outstretched hand. I immediately sensed just how embedded basketball had become in culture and community. Unlike our training sessions at Greenwood, parents lined the stands to watch training. John described a 'Filipino way' that combined food, family and basketball. Surrounded by onlookers, boys learned the game by accumulating 'street knowledge'. In this environment, basketball was not formally taught. John said, "how I learned the crossover was by trying to beat the guy who was guarding me" (Conv, J3).

When Coach John spoke, I wondered if he had re-imagined a lost era from the Philippines that he wanted to re-create in New Zealand. John grew up on the streets of Manila then played at the University level in the Philippines before moving into professional coaching

there. In his view, the development of basketball in Filipino communities in Auckland had produced a different kind of experience. The passion and intensity for the game persisted, but John decried “stage parents” (Conv, J3) that he saw over-involved in their children’s sport because basketball did not work out for them when they played. Moreover, he felt that the players here in New Zealand did not play enough street ball. As John and the other coaches tried to teach more advanced concepts, the boys have struggled He said, “we stop them, tell them what they did wrong. But it is hard for them to apply the knowledge that we are giving them” (Conv, J3).

In these respects, Joey and Coach John were kindred spirits who could reminisce over similar childhoods. Raised in the Manila suburbs, Joey fell in love with the game by playing on the streets with his friends from the neighbourhood. Joey’s affection for the game started under auspicious circumstances. Frustrated by what they saw as an education system inaccessible to the middle class, Joey’s parents found work in New Zealand that would afford their children access to quality New Zealand pathways. Unfortunately, making this move required that they establish residency, an effort that led them to leave Joey and his brother in Manila for two years. Under the care of his grandmother, Joey learned to play on the outdoor courts near her house. He said, “when they left me, I didn’t know how to play basketball. So, I got exposed where we lived when I was with my grandma” (Conv, J2). Joey described an environment of continuous basketball in the sun with kids who wanted to play any second they could:

> It’s just natural. It’s crazy because like in the Philippines it’s not like here. It’s more outside basketball or play in bare feet. It’s like street basketball. That’s how I learned to play basketball. There are a lot of courts. We just play everyday. We always play. Didn’t matter, any time. It’s crazy. They will make a basketball hoop with like, you know coconut trees, they will like sew it just to make a basketball court. Everyone goes crazy. (Conv, J2)

During the holiday, Coach John arranged an opportunity for Joey to trial for a basketball scholarship with a prestigious high school team in Manila. When his parents refused, Joey felt disappointed. The school fed students to one of the most well known universities in the Philippines and their basketball teams played in the top division. Joey felt that the offer he received to workout for the team would be a rare opportunity that he might not get again. He said, “I want to play professionally. But, that’s what I’m telling my parents: if you let me play that one year, even if I didn’t get into any [senior] uni team I will still have the experience for the rest of my life. I can look back one day like, I played this league” (Conv, J2).

For Jonah and the Greenwood team, Joey's invitation to workout for Ateneo in Manila came as a surprise. After his representative coach arranged the opportunity, Joey stopped training with Greenwood in the lead up to the workout. Jonah sensed that Joey was conflicted. On the one hand, his parents moved the family from Manila to Auckland a few years ago in search of better opportunities. On the other, Joey sensed what it would mean to play for Ateneo, even for only a year. He said, "It's the top division and only good players get the privilege to play in the top division. Even if I didn't get in [to the school], I can always look back and say that I played in this division…I can always tell my son that" (Conv, J2). The conflict did not end there. After word got out that Joey received an offer, some in the community questioned if he deserved it. As a result, Joey found himself in a double bind where no matter what he did or how it ended, he would be criticized:

> The pressure for me is, 'he should have not got that [scholarship offer]… he's not good enough to play on that team'. Like, all the Filipinos. They always criticise you, even if you did something good… 'These guys should have gone instead of him. It's always that pressure. Like, if I didn't get in everyone is like 'what a disappointment!' I hate when a lot of people saying stuff about you…I don't know how to handle it. (Conv, J2)

5.1.3.2 "I'm trying to find what playing style I'm good at"

Now 15-years old and a Year 11 student at Greenwood, Joey faced a discernable pressure that revealed itself on and off the court. In our conversations, he described a need to prove his worth in the face of criticism and doubt. Introduced to basketball on the streets of Manila and raised in a passionate basketball community, Joey became a good player in New Zealand for his age group. Well known in his local community and at school, Joey made both the senior school team and his association's u15 representative team in 2015. Despite these achievements, term four training challenged him to play differently. Known as an aggressive driver and scorer for most of his life, Joey needed to both score and create opportunities for his teammates to score. Joey acknowledged how these competing tensions produced a revealed a contradiction for his style of play. He said, "lately I'm trying to be a pass-first guard to see if I'm better at that…I'm trying to find what playing style I'm good at and also that will help the team more" (Conv, J2).

Term four workouts raised Joey's conflicted style of play to the surface. As the ball carrier in pick-and-roll situations, Joey often shot quickly, drove the ball into crowded situations and took contested shots. Joey tended to "force something I thought will work" (Conv, J2), He occasionally became frustrated or angry on the court, leading to taunts of his teammates. Figure 11 provides on example. When Joey drove the ball to the basket, Alfred bumped him. The bump was not enough to knock Joey down, but it did dislodge him

from the straight line he was pursuing to the basket. Immediately, Joey bumped back. As he veered into Alfred, Joey grunted “Ahhh!!” Everyone could feel Joey growing agitated. From the moment Joey crossed the midline, Alfred was frustrating Joey with close defence that caused him to lose the ball. The entire gym could sense that Joey was turning the possession into a personal challenge. When he managed to get his hip past Alfred, Joey picked up his dribble at full speed, a sign that he committed to going all the way to the basket. Brennan stepped over to help on the drive, but Joey slipped under his arm. The shot was not easy. Brennan’s help forced Joey to contort his body in order to get the ball up to the rim. The ball hit the backboard, then bottom of the rim before careening straight back into Joey’s hands. He did miss the second attempt. When Alfred collected the ball from the net, Joey stared at him while backpedalling down court and taunting “Yeahhhh!!!! Whoohoooo!!! Wooooo!!” (Field note, 6 November 2015)

Figure 11. Joey drives against Alfred during offseason training in term four of 2015.

1) Joey walks the ball across half court on the left sideline before pausing above the left wing
2) Alex sprints from the far side block to ball screen
3) Joey rejects the screen by stepping right then spinning back left in an attempt to drive, but Alfred slides laterally to block his path to the basket
4) Joey loses the ball briefly then regains possession as Alfred marks him closely
5) When Alex clears the area, Joey gathers speed then explodes right and towards the middle of the court (see image)
6) Joey turns the corner on Alfred and attempts a layup that Brennan contests
7) Joey misses the layup but gets his own offensive rebound that he shoots again.

   Made basket.

On past teams, Joey was coached to be aggressive. In 2015, Joey played with the Greenwood Under 17A team. They regularly dominated opponents, sometimes by 50, 60

or 80 points. Playing largely in transition, they used full court pressure and trapping to force teams into turnovers and generate easy lay-ups. On offence, Coach Ryan encouraged Joey to shoot. A 20-year-old university student and former U19 player at Greenwood, Ryan instituted a 14-second shot clock during training sessions to force his team to find shots quickly. Ryan admitted that he was simply emulating his favourite NBA team, the Phoenix Suns. Five years ago, a friend gifted him a game console that included NBA 2K, a popular video game that allowed users to play against friends with their favourite professional teams. For Ryan, his team choice was always easy. Suns' Coach Mike D'Antoni surrounded league Most Valuable Player (MVP) Steve Nash with three-point shooters and challenged the team to score on each possession in seven seconds or less (McCallum, 2006). Compared to other NBA teams, this pace was very fast. Jonah described Ryan's offensive philosophy in simple terms. Jonah described it as "head down to the basket, drive, shoot every three-point shot that's open" (Conv, J1).

When I asked Joey about his role on the Greenwood Under 17A team in 2015, he smiled. Joey said, "It used to be me getting the ball, Tommy sets me a screen and I go to the basket" (Conv, J2). By all accounts, Joey loved playing for Ryan. Not only did the fast, aggressive pace suit his speed with the ball, but Joey also felt empowered by Ryan's belief in him. If Joey had an open shot or drive to the basket, Ryan wanted him to shoot it, no matter what. Unfortunately, Joey was developing a reputation as a 'show-off' and his feisty, brazen personality clashed with the senior team culture that valued the collective over the individual.[8] As a coach who preached humility and respect for others, Jonah did not like what he perceived as cockiness in Joey born from "other coaches boosting up his emotions" (Conv, J1). In fact, Joey was having an experience playing representative basketball that closely resembled his time with Ryan. On a representative team composed of top players in his age group across East and South Auckland, Joey was often the top scorer. Like Ryan, Coach John employed full court pressure and trapping while also encouraging his players to play aggressively by driving to the basket and looking to score.

When Joey was promoted to the Greenwood senior team in 2015, Jonah moved him into a different role. With Troy (Year 12) and Terrance (Year 13) on the team, the team already

[8] In 2015, tensions in Joey's style of play rose to the surface when Joey moved from the U17A team (coached by Ryan) to the senior team (coached by Jonah). Near the end of senior team training, Joey drove on Julius, Jonah's brother, and scored. When Julius fell to the ground on the play, Joey laughed at him mockingly. Upset, Julius jumped up and punched Joey who then fell to the ground with his mouth bleeding. When Ryan moved to help Joey up. Jonah stopped him. He told Ryan that Joey "needs to learn".

had two primary scorers who played for Coach Jonah in previous years. Jonah wanted Joey (Year 11) to play as more of a “pass-first point guard” (Conv, J1). Rather than scoring being his primary focus, Jonah wanted Joey to use passing to set up his teammates for scores. In moving between these different roles, Joey has struggled:

> I think one of the challenges was playing style. On this team we might be pass-first, on this team it might be just shoot…on ACM I play wing. I don’t really play point guard. On [the Greenwood senior team], I have to play point. My awareness will be hard for me. For me, I’ve always been a scorer, and now since I have teammates who can really score its hard how to set them up. Its always been a struggle for me, how to set them up. (Conv, J2)

5.1.3.3 “I need to focus on simple things. And not trying to force anything”

With Terrance no longer on the team, term four presented the opportunity to change the roles for returning guards. A key question was who advanced the ball up court after a made basket. Multiple players assumed this role at different times during these off-season workouts, including Joey, Reimar, Alfred, Tommy, Justin and Troy. While Jonah would sometimes intentionally identify a player to bring the ball up, Joey typically assumed the role on the team for which he played. In a scrimmage setting, Joey would receive the inbounds pass and dribble the ball up court. When we played with a rule to start each possession with a pick-and-roll, Joey often made himself first ball carrier. With this responsibility, Joey had responsibility for how to read the first pick-and-roll.

In one encounter (Figure 12), Joey revealed his tendency to force the ball into a tight space. Considering his historical role as scorer, Joey would use his shoulder to force his way into the paint. As a way of “bullying” your defender, lowering your shoulder is a way of physically dominating your defender and thus maintaining status on the court. Like his previous encounter with Alfred, Joey sometimes included taunting and mocking the defence. As I watched him play, I wondered how conscious Joey was of his own tendencies. Joey expressed awareness of these habits and acknowledged how problematic they were. He said, “Yeah I think I need to focus on simple things. And not trying to force anything…like one of my problems was trying to force something that I thought will work”.

Figure 12. Joey drops his shoulder and lowers his head on a drive.

Crucially, Joey revealed how his tendency to 'force things' reflected personal self-doubt and an acute sensitivity to criticism. Joey felt that forcing things was not just about scoring, but a more fundamental effort to combat perceptions that he was not good enough to be a top player. As a short guard, Joey's physical height had generated scepticism from friends, family and observers who questioned his ability and potential. Consequently, Joey experienced intense feelings of self-doubt that contributed to his need to prove people wrong:

> Joey: Yeah, I think I need to focus on simple things. And not trying to force anything. Yeah like one of my problems was trying to force something that I thought it will work. To be honest Vince I always worried about what people has to say to me. Like when people say I can't do something good I always think that I actually can't do it and I think that's my biggest weaknesses not being able to believe in myself
>
> Vince: *Like you take criticism real personal and makes you doubt yourself?*
>
> Joey: Yeah I do a lot like I sometimes don't know how to handle it. Most of the time I just couldn't be myself on the court because when I think what people said to me like oh you're too short and too weak! You can't do anything and when I think about it during the game that's when I try to force everything and try proved everyone that they're wrong. It always been my problem is that I want to prove everyone that I can do everything even though I can't and there's a point that when I'm actually doing good I don't realise it like little things! (Conv, J2)

5.2 ‘Prems’ qualifying, motion offence and letting go of ‘hero ball’ (Case 2)

5.2.1 Preparing for the Premier Grade Qualifying Tournament (Case 2, Part 1)

The turn of the calendar marked the start of a new academic year and the unofficial beginning of the basketball season. Importantly, Greenwood received an invitation to an eight-team qualifying tournament in April that could result in promotion to the Premier grade for senior teams in Auckland. Given the rising popularity of basketball at Greenwood, becoming a Premier grade school was a strategic objective for the sports director. In turn, Jonah shifted his focus to preparation for this competition. After observing a New Zealand U16 national trial, Jonah confirmed that he wanted to continue the coaching approach started in term four. A strategic goal over the first few weeks was to build on the progress that started at the end of 2015 then develop a half court offence based on the new style of play. Whereas the previous year’s team relied on Troy to take over when set plays broke down, a new group of talented players entered the team and Jonah felt it was time to make changes to the team’s half court offence.

5.2.1.1 “Basketball will be the top sport at this school”

The Sport Director aspired for Greenwood basketball to qualify for Premier grade, the top division for senior boys’ and girls’ teams in Auckland. An Auckland Premier grade school had won the secondary school national championship for basketball in four of the previous five years, making it arguably the most competitive division in the nation. Because the Premiership division was open to schools across Auckland, qualifying for this eight-team grade signalled an achievement for many sports programmes. When Greenwood’s Sport Director started ten years ago, the number of sports was half the current size and no code had ever advanced to the Premier grade. Basketball did not even have a senior team. In these respects, the Sport Director wanted more for the school. “Not many of the teams were playing at a high level” and basketball was “non-existent at the time” (Conv, SD). By 2016, the focus had changed. Six Greenwood sports now competed at the Premier grade level and the Sport Director’s aspiration for basketball was unambiguous. He said, “Basketball will be the top sport at this school. I think that’s going to be our big sport. We want to be a Premier school” (Conv, SD).

Under the current Principal, the message from senior leadership had been to cover all spectrums. The Sport Director understood it as, “having a good participation level and at the same time raising achievement” (Conv, SD). From 2012 to 2015, basketball managed this balance well. Student interest and participation in competitive basketball grew

strongly. Boys and girls' basketball only combined for four age-group teams in 2012, when Jonah became coach. However, that number grew to 14 teams in 2015. Moreover, recent achievements in boys' basketball challenged many assumptions around the potential of basketball at the school. The senior boys' basketball surprised many teachers, parents and administrators by being competitive locally, regionally and nationally. Jonah said "I don't think the school really thought we could build such a basketball programme. Not that it's a national champion yet but we're getting up there. Now that the school is seeing our programme they're supporting us a lot" (Anderson, 2015). Over a three-year period, Greenwood won the South Auckland Opens senior grade three times, the Greater Auckland Opens senior competition twice and advanced to Nationals once. In April of 2015, Greenwood received a promotion opportunity to qualify for the Premier grade when they played a relegation match against a bottom-two Premier grade school, St. Anthony College. Despite losing the match, Greenwood College was featured as a rising programme in the boys' basketball national landscape. In an interview for the feature, Troy described how the atmosphere around the programme changed:

> Since we've been working hard, we gained our first trip to nationals last year and we gained ourselves a promotion match to get into the top grade here in Auckland. The [South Auckland] division we're in now, teams are looking to beat us. They see us as the top team in their grade, so we better watch out. (Anderson, 2015)

For 2016, the process for promotion changed. Rather than repeat the annual tradition of single game relegation matches, the regional governing body instituted a qualifying tournament for the Premier grade. In late April, Greenwood was one of 10 schools invited to compete with in a round-robin style tournament where the two finalists earned promotion to the Premier grade.

Considering the opportunity in 2016 to earn promotion to the Premier grade, the Greenwood senior team changed focus in term one of 2016. Whereas the off-season focused on learning the pick-and-roll through a new form of training, term one focused on preparation for competition. After a six-week summer holiday, the school re-opened in late February for the start of the 2016 academic year. While Greenwood's junior teams would not start preparing for their season until May, the senior team began informal workouts in January, well before the first day of lessons. Trials started in mid-February. This window from February to April served as a *de-facto* pre-season period where registration, trials, team selection, pre-season training and qualification for the Premier grade all took place. Over an 11-week period from mid-February to late-April, 22 team trainings and six team video sessions took place. The senior team also played four test matches, including two

against top-eight Premier grade schools Auckland Central High School and St. Anthony College. At the Premier grade qualifying tournament in late April, Greenwood played four games over two days.

5.2.1.2 Team selection and new players

The start of the 2016 academic year brought an unexpected phenomenon: new-to-school players. Nearly a month before the start of classes, Nathan and Daniel began attending and participating in the team's informal workouts. Daniel moved to Greenwood from a high school in South Auckland without a senior basketball team. For his final year of high school, Daniel wanted to attend a school that had a senior basketball team. Standing 6'4, Daniel immediately became the team's tallest player and best shot-blocker. As a member of Jonah's Under 19B representative team, Daniel played 'reps' for the first time in 2015. Like Daniel, Nathan played for Jonah in 2015, albeit briefly on a team touring in Melbourne. Now starting year 11, Nathan spent his first two years of secondary school at neighbouring Orangewood College. For Nathan, the change to Greenwood was motivated by both academics and athletics. Nathan was struggling in his coursework and his parents were unhappy with the teaching he had received at Orangewood. From a basketball standpoint, Nathan made the Opens at Orangewood as a Year 10 but was unhappy with the school's relative lack of resource and investment into basketball. Nathan's experience with Jonah in Melbourne and his family's view of the Greenwood programme's reputation solidified his desire to move schools.

With Nathan and Daniel now in the group, trials unfolded over a few days in mid-February, culminating in a final scrimmage on February 19. In this process, Jonah named 15 players to the team, including three 'development' players that participated in training but were not expected to play much in games. For Jonah, players like Campbell and Alex were prospects who had potential but needed continued skill development and experience to receive extensive playing time. Even though Jonah was confident in the eight core players returning from 2015, he learned from past seasons that the change in school year can reveal new and/or improved players:

> We went open trial in my first season. The next season it was the same squad because no one left school. Coming into last season it was like, six seniors gone. We didn't have a trial. That's what I thought was one problem. I just invited the top Under 17 players, the top Under 15 players from last year. Then we kinda went through season finding these gems from the Under 17B team. I was like, maybe we do have to have something open just to see if we find anyone. (Conv, J1)

Overall, the team was noticeably short for a school with Premier grade aspirations. With no player standing taller than 6'5, the Greenwood team did not have the height of most Premier grade schools. When Greenwood played Redwood College at the National Tournament in October of 2014, the Redwood starting forwards were 6'8 and 6'10, respectively. Entering this season, Redwood boasted three forwards of 6'7 or taller. In fact, most Premier grade schools had one or more starting forwards 6'5 or taller. Without such height on the roster, some Greenwood players were forced to move out of their preferred roles. For example, Troy's skill at driving meant he played primarily as a guard from 2012-2014. However, Troy's was also the second tallest player on the team in 2015. This reality led Jonah to play Troy at forward and centre.

5.2.1.3 Confirming the new coaching tools

Over the summer holiday, Jonah and I attended the Basketball New Zealand trial for the Under 16 boys' junior national team. Each year, ten 14-year old and 15-year old boys from across New Zealand represented the national side in international competition. Preparations started six months in advance with a national selection camp. For Jonah, the camp provided a rare opportunity to observe how a national team designed training, assessed talent and approached the system of play. At camp, training sessions followed a minute-by-minute structure that included numerous rote drills. That regimented approach reminded Jonah of the limits of a traditional coaching style in comparison to the concept-focus of a games-centred approach. Reflecting on his coaching experience during term four of 2015, Jonah admitted that he was initially flustered by the messiness small-sided games but eventually found comfort and saw benefits. He said "[I was] relieved for the first time about not being in structure. At first, I was panicked. Not to the minute like [the National team camp], but by the hour by the day. When we turn up I'm good, don't know exactly what we're doing but have an idea" (Conv, J1). At national team camp, the emphasis on rote-style drills led Jonah to question the value of training without live defence:

> We ran those drills at [Greenwood] and some don't let them play. I saw the harm in that. We might be harming us by not letting them play. We run the same thing from the middle to the corner, three reps then switch. That's where the problem was in those drills. (Conv, J1)

Jonah saw the focus on concepts as a more flexible form of structured play where the content could be adapted to players' ability. He said, "I've liked the concepts part of it. It's really flexible. You get there on the day and the guys … we had a bad week moving the ball or a bad week finding open shots … then I'm open to spending more time on ball

movement" (Conv, J1).

5.2.1.4 A new system of play as a strategic priority

Over the last two years, Jonah designed his half court offence around set plays. When a play broke down, they deferred to Troy and Terrance. Both could create scoring opportunities by simply driving 'head down to the basket'. However, Jonah admitted that the team's offensive strategy in 2015 was too reliant upon Troy. Sitting on the bleachers before early season training, Jonah reflected on that sentiment. He said, "I needed to trust the bench more" (Conv, J1). As the team entered the 2016, Jonah wondered how to re-integrate the team's most experienced player. Since Troy missed some of the off-season, some uncertainty surrounded how his role might change moving forward. Jonah said "Been thinking about Troy. How do we use him?" (Conv, J1)

Despite being a Year 11 on a team of mostly Year 13 students, Troy earned team Most Valuable Player (MVP) in 2014 as a score-first perimeter player who attacked relentlessly. In describing his role, Troy acknowledged that he was the "main threat basketball-wise" (Conv, T1):

> [My role] was not to take over, but to dominate, in my way. I found that easier in myself. That year was the easiest for me because I had so much but so little to do, in a way. So, Larry obviously was the leader of the team but he wasn't the main threat on the team basketball-wise. (Conv, T1)

Despite his young age, the team needed Troy to score often and could rely upon more experienced seniors to show vocal leadership and help others along. Interestingly, that changed more in 2015. With his experienced teammates graduated and moving on from Greenwood, Troy felt he should take command even more. He said, "They left. I kinda felt I had to take it upon myself just to do things" (Conv, T1). On the court, Troy demanded the ball more. He said, "I guess that as I get older, I'm demanding the ball more. I want to make the next play. Yeah that's the mindset. I wanna grab every rebound, get every stop" (Conv T1).

It was becoming clear that while a few set plays and a single dominant scorer might be enough to win their local competition, Greenwood needed to be better in set offence to compete for the Premier grade spot and/or qualify for the National tournament for secondary schools. In addition to being heavily reliant upon Troy, their trapping schemes were less effective without longer and taller players. As a 5'6 guard, Joey noticed how Greenwood struggled last year to get steals against taller opponents. He said, "if you're

small, and you're playing full court pressure, you don't really need to pressure the ball. They can just pass over you" (Conv, J2).

As a result, the Greenwood senior team needed to improve their half court offence. With the help of a new assistant coach, the 2015 team tried to learn a half court continuity offence, Breakers Trans. Continuity offences are known for a repeating pattern with predetermined reads that direct where players look, whom they pass to and when they shoot. Former UCLA coach John Wooden explained his High-Post continuity offence as a sequenced progression. He said "each man must be set up in his position. Each player must know the type of passes to make as he receives the ball. He must have in mind an automatic progression in where he is to look first, second, third" (as cited in Krause & Pim, 2002, p. 299). When the New Zealand Breakers[9] won their third consecutive ANBL championships in 2013, high school and representative coaches across Auckland embraced the team's philosophy.[10] In fact Jonah saw the Breakers offence frequently across the region. He said, "you're not a New Zealand Coach if you don't have a trans offence" (Conv, J1). For the 2015 Greenwood team, learning Breakers Trans proved difficult. Jonah said that it "didn't work because it required more prior knowledge than the players had" (Conv, J1). Despite some initial progress, the team largely abandoned their efforts and the assistant coach stopped coming after their relegation loss to St. Anthony.

For term one, Jonah began to re-think his team's half court offence. He asked, "What are we gonna do? That's a key point. What did we see last season? What did we do last season? What can we change from last season? What can remain the same?" (Conv, J1). The new concepts developed in term four provided the avenue forward. With the tournament two months away, the teaching and learning challenge meant expanding the loose collection of spacing and shot selection concepts into a half court system of play that could be implemented for competition. While term four challenged previous understanding of shot selection, spacing and ball screen situations, that understanding needed continued development in order to become a system of play in a formal, competitive setting. In this

[9] The Breakers are the only New Zealand-based franchise in the Australian National Basketball League (ANBL).

[10] As the Breakers head coach taught 'trans' to the community, coaches started to employ it as a primary offence. As a continuity offence, Trans followed a continuous pattern that started on one side of the court then repeated on the other. A wing-to-opposite corner cut cued a dribble handoff and ball screen between a high forward and strong side guard. If this action did not yield a scoring opportunity, the guard reversed the ball to the second forward who filled the open space at the top of the three-point arc in the middle of the court. The same sequence of actions then repeated on the other side of the court.

respect, continued growth required a mutual understanding, or shared vision, of the object of play.

5.2.2 "We can get that shot later" (Case 2, Part 2)

During term two, conflicts in shot selection emerged as the team prepared for the Premier grade qualifying tournament. In the development of a half-court 'motion' offence, a conflict in shot selection emerged between Joey, Troy and the rest of the team. The emphasis in motion offence to be unpredictable, make quick decisions, move the ball and look for a good shot contradicted their entrained habits to dribble for long periods and take quick midrange jump shots without sharing the ball. Tensions rose to the surface following a loss in a preparation match to St. Anthony, a Premier grade school on the North Shore. Conversations held in the aftermath of the St. Anthony film session became a turning point. Troy and Joey opened up about the challenges in their relationship then Jonah added new structures to make the offence more effective. When the tournament ended, the team expressed jubilation towards their new style of play despite not advancing to the Premier grade.

5.2.2.1 Motion offence, 'its different every single time'

> My general reaction is that when the top 10-12 are on the court, they are playing with great comfort in a motion offence situation. (Field note, 17 February 2016)

In the final week of term four, we started branching out. Because so much of the term had been focused on the ball screen situation, the boys asked for something new in the final few sessions. With Troy and Joey both missing from training, Jonah decided to rule out the pick-and-roll; no ball screens at all. Initially, the change led to turnovers, awkward spacing and over-dribbling. With no restrictions on how to start a possession, the boys had to find different ways to generate scoring options while still looking for a good shot. Slowly, new actions emerged. Some of the boys dribbled to a teammate to hand the ball off. Others quickly passed then cut diagonally through the middle of the court. These new actions created different avenues for drives to the basket. We called them 'dribble hand-off' and 'shallow cut'. During the final video session of off-season training, the boys watched themselves play for the first time without the pick-and-roll. As we watched, many were able to integrate these new actions with wheeling, lifting and keeping the middle open:

Vince: *Dribble hand off. Another dribble handoff. Great interaction there Reimar and Zack. Drive and kick. Quick decision. That's good. Good relocation. You guys are starting to pick it up. Starting to figure it out.* [video playback]
Jonah: That was a good shallow cut.
Vince: *I don't think he realised he did it!* [laughing]
Jonah: Then John and Justin started to use the shallow cut really well.
Vince: *Drive and kick.* [video playback] *I can't stress this enough. Brennan this is like … Ball goes to the wing. This is always an option. This is essentially a four-out-one-in motion. Tommy you initiate this by just passing to Justin. Brennan recognises and goes opposite post. Can't stress this enough how you simply relocating to the opposite side opens up the court for whomever has the ball to drive. And so that movement is great.*(Conv, G)

Motion offences have a long history in competitive basketball (Krause & Pim, 2002). While there is no unified definition of a motion offence, it can be broadly described as a half court offence that encourages continuous player and ball movement in an emergent pattern. Two notable examples include Indiana University, national champions of the National Collegiate Athletic Association, and the Golden State Warriors, recent champions of the American National Basketball Association. Indiana coach Bobby Knight described his team's 'passing game' as a motion offence. He wrote:

> Motion offence is very unpredictable and this creates many good shot opportunities in itself. Unlike pattern play, there is no predetermined order of movement by either the players or the ball, which makes it very difficult for the defence to anticipate what the offensive team is doing. Another important point in favour of this offence is that the players enjoy it greatly, and because they enjoy it they work hard at it and frequently get good shots with it. (as cited in Krause & Pim, 2002, p. 301)

Similarly, Golden State Warriors assistant coach Mike Brown highlighted the unpredictable nature of their way of playing. He noted, "It's not, 'you go to this space; you here, you here and you here.' Not at all..It's not scripted. And when you have something that's not scripted, your opponents break down, because it's different every single time" (Herring, 2017, para 12).

As Knight and Brown noted, motion offence does not involved a pre-planned sequence or pattern. Instead, the pattern emerges differently each possession depending on the wide range of factors that shape the situation. Among others, each possession will defer with respect to defensive positioning, player fatigue, time and score. However, emergence does not mean that the pattern is random. Motion offences do employ rules. Frequently small in number, motion rules tend to be proscriptive and serve as guidelines for movement. For instance, Knight outlawed dribbling in order to increase passing, screening and cutting. Moreover, motion rules can change from team to team. Knight (as cited in

Krause & Pim, 2002) encouraged coaches to develop rules and principles that fit the demands of their team situation. He wrote, “the rules that you establish and use should be those that best serve your own needs. Everyone who uses motion offence will develop principles that he feels are best for his own situation” (p. 305).

In this respect, a motion offence places a comparatively greater emphasis on adapting the system of play to match the players on a team. In Greenwood’s case, the team did not have many tall forwards who could score inside. Instead, the team had many small guards whom preferred driving to the basket. With this team composition, it made sense to play with four guards along the perimeter, outside of the three-point line, and one forward inside. It also made sense to institute rules that opened driving lanes, including; 1) keep the middle, and 2) the inside forward stays on block opposite the ball.

Importantly, employing a motion offence involved some risk for coaches. Knight (2003) discouraged a team from having too many rules and consequently becoming “stereotyped and predictable” (p. 305). An effective motion offence required enough rules to ensure a degree of order. However, too many rules could stifle creativity and limit possibilities for novelty in a possession. In addition, motion offence implied autonomy in decision-making and a distribution of control. Motion offence demanded that coaches let go of control as encourage players to make decisions based on the constraints of the situation (Araújo, Davids & Hritovski, 2006). In this sense, players needed to feel confident to play freely.

5.2.2.2 “They’re realising that there’s a million actions”

During official team selections in early February, a half-court motion offence began to take form. For the session, each team was to have four players outside the three-point line and one player on the inside. Before starting, we reviewed the spacing concepts from term four (e.g. wheeling, lifting) and prohibited the pick-and-roll. New combinations emerged. On one possession, Daniel flashed from the low block to the free throw line for a ‘high catch’. Later, Mark received a handoff from John before passing the ball crosscourt to Zeke and cutting immediately to left side corner (Figure 13).

Figure 13. A large area of space opens through spacing actions off the ball.

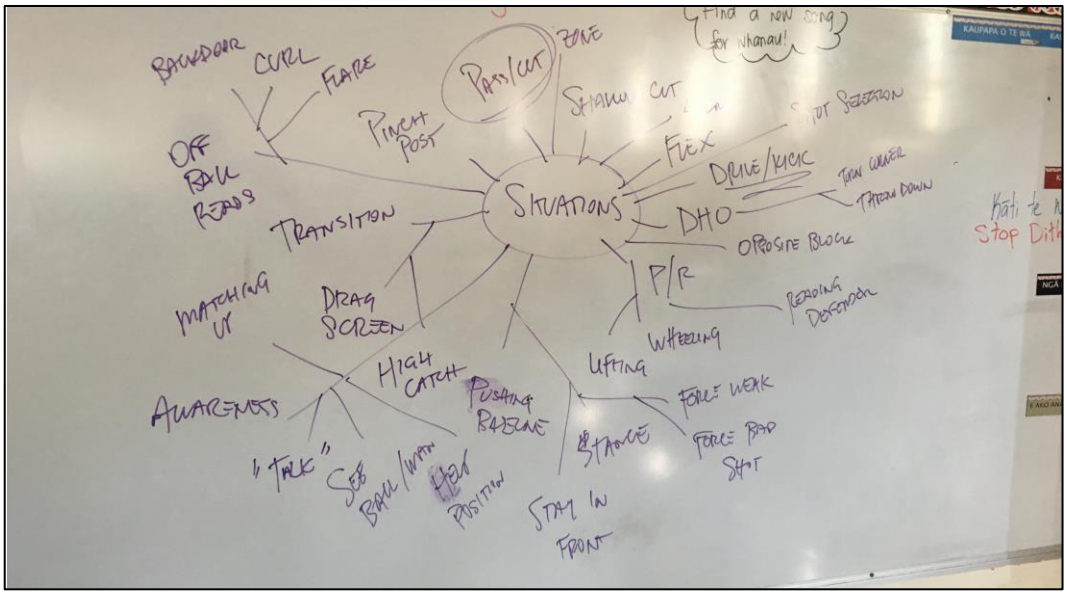
1) John walks ball across half court
2) John hands off to Mark on right wing [with Daniel at right block and Tommy in right corner]
3) Mark immediately passes across court to Zeke on left wing then shallow cuts to left corner
4) Zeke catches then immediately drives to the basket (see image)
5) Zeke attempts an open lay-up

Made two.

Through new combination of drives, dribble handoffs and cuts, we began to see large swaths of open space, more player movement, greater ball movement and less of a single player dribbling for long periods. One week later, we used our first film study session of the term to discuss this change in play. We documented the range of difference situations that were now possible when playing this way (see Figure 14). By March, a small set of general rules for play began to crystallise for the team:

1) Three players maximum to one side of the court;
2) The inside forward stays opposite block, away from the strong side;
3) Perimeter players cut to the basket when being denied;
4) Keep the middle open (unless you're driving, cutting, flashing or rolling);
5) Look for good shots while avoiding bad shots.

Figure 14. A concept map from team film study in February of 2016.



During one mid-March session, Jonah designed a small-sided game built around a situation called ‘floppy’. A floppy set is a screening situation where an off-ball guard starts under the basket and has the option to get open using either a two-man screen on the right block or a one-man screen on the left block. During this activity, Tommy, Alfred and Jayden began to verbally incorporate their understanding of the general rules for play. In order to take advantage of the opportunities within a floppy action, they recognised that the number of players within 10-15 feet of the ball can impact the space they have to make moves. Jonah described the impact of spacing ratios on opportunities for action:

> The main thing was space. There’s become like a number now, three is the max on one side of the court. They didn’t say that, but I did here them say ‘either run two-man game or three-man game, otherwise get out.’ So now it’s becoming, spread the court out like this. They’re realising that there’s a million actions for two-man game. (Conv, J1)

Jonah observed a further crystallisation of understanding when the ‘first team’ of Joey, Alfred, Tommy, Nathan and Christian lost 11-1 to a ‘second team’ with Reimar, Jayden and three juniors. When the first team returned to the huddle, Tommy started a dialogue about what to do differently. Alfred and Joey had both committed turnovers by driving to the basket then leaping in the air without a clear shot. Tommy declared the need to stay under control. He said, “Yo…guys…Joey, calm down. Stay in control Alfred. If you don’t have the shot just pass it, if you don’t have the pass just hold it, pivot” (Conv, J1). When they returned to the court for the second scrimmage, Jonah witnessed a dramatic change:

> They’re figuring out we can’t actually make these one-on-one drives if there’s no space in the middle. So now Alfred and Tommy are kicking and getting out of the lane as soon as they can, but they’re not just getting out …they’re relocating to the exact same spot they passed to … going that way, that way, that way...It was like .. Tommy drive … kick … relocate .. Alfred drive … kick … relocate … like four cycles, then Alfred crosscourt, then Tommy cuts, catches it, gives it to Alfred, does a no-look pass and its like a lay-up. And like the whole time you could just hear them talking like .. yup ... yup … yup … yup .. and my brother was just like, “that was the most beautiful thing I’ve ever seen!” [laughing]. The boys were teasing me, they said I had a basketball orgasm .. cuz I was like “oh…oh! … ohhh!!” (Conv, J1)

5.2.2.3 Debating the early midrange shot

Conflict in shot selection emerged in competitive games. For Joey and Troy, the new emphasis on continuous ball movement and shot selection challenged their style of play. Both Joey and Troy were used to being a scorer. As a result, both preferred to shoot first rather than wait to find the best shot for the team. For Jonah, that contradiction increasingly revealed itself in training:

> I just keep re-running that in my head. That we’ve had our best scrimmages without Joey and Troy. It was just like wow. We really had our best… There needs to be an understanding between those two and our team and us. A mutual understanding of why this is happening. How we can change that? (Conv, J1)

The conflict manifested during a pre-season match with St. Anthony College. With less than a month before the tournament, Jonah agreed to this ‘friendly’ as a way to aid in preparation. Doug M. became St. Anthony’s head coach over the summer. Doug regularly scheduled pre-season ‘friendlies’ to prepare his school teams for the coming Winter season. For Greenwood, it was the first of two April friendlies against current Premier grade schools. Of the 18 that travelled to the venue, 12 kitted-up while another six watched from behind the bench. With no Greenwood parents and a handful of St. Anthony parents in the stands, the match included three 15-minute periods.

> The size difference is noticeable immediately, both in height and bulk. [St. Anthony] has multiple players over 6 foot 3 inches. Greenwood has only Daniel. Full court pressure has little effect on St. Anthony. We start offensively with multiple handoffs around the perimeter. St. Anthony switches these handoffs. Nothing coming easily. Greenwood team taking mostly jump shots. Intensity of the game is high. Loud team play. Troy starts grabbing rebounds and just pushing on his own in transition. He takes a few drives but cannot make it. Joey takes a few early jump shots, including a dribble pull-up three. Tommy and Christian are less involved on offence. No back cuts. CB makes a difficult post-up. Greenwood loses Q1 15-9. Q2 begins with multiple passing turnovers from Troy as well as a few missed jump shots out of a pick and roll. Intensity of the game remains high. Final period begins with St. Anthony up 15-0. (Field note, 6 Apr 2016)

During film review the next day, the mood changed. Joey and Troy sat beside each other, towards the back of the room and with their feet up on chairs. I did not hear the banter and laughing that was common to film review, especially among these two. As we watched a replay of the first period, Jonah stopped the footage and asked each player to share their reactions with the person sitting next to them "We're not moving the ball. We're just taking the first shot we see," Daniel told me. Statistically, a post-match analysis revealed that the team made just six of 23 total shot attempts across all three periods. Among the 23 shots, the boys converted just one of 13 outside 'jump shots' compared to five of 10 'paint shots' in the key area. The difference conversion rate between paint shot and jump shots suggested an underlying issue in shot selection.

In watching the film, we noticed that Troy and Joey both attempted (and missed) three jump shots inside the three-point arc (see Figures 15 and 16). Since each shot occurred early in each possession, the concern was that Joey and Troy were taking quick shots rather than moving the ball to find a more open shot for the team. Standing in the back of the room, Jonah whispered his feeling to me, "I think a lot of that early stuff comes from Troy. It was nice pushing the ball but if nothing was there he would tend to force it still" .In order to deepen our insight, we needed to bring the issue to the surface. The following conversation took place to tease out perceptions:

Joey: What if you're open? [SEP]
Vince: *Well what do you guys think?* [turning to whole group. Alfred raises his hand]. *Alfred, go ahead.*
Alfred: If you're wide open, yes. But if not then we should work it. [SEP]
Vince: [Justin raises his hand] *Justin?*
Justin: I reckon you shouldn't shoot it because we can get that shot later. [SEP]
Vince: *Troy, you've taken a few of these. What do you think?* [SEP]
Troy: I reckon if you're confident and think you can make it and you're in rhythm, then you should take it. (Conv, G) [SEP]

In opening the midrange shot decision to group dialogue, beliefs about shot selection rose to the surface. This excerpt of the conversation revealed contradictory beliefs towards the value of an early possession, mid-range jump shot. The tension was palpable. Troy and Joey were not used to being questioned openly by teammates over the decisions that they made in play. Both defended their decision to shoot this shot. Joey argued that you should shoot it if you are open and Troy thought you should shoot it if you felt confident and in rhythm. Justin and Alfred mostly disagreed. While Alfred agreed with Joey that wide open shots were good, he also recognised that a contested shot should be avoided and that the team can find a better shot (e.g. an uncontested shot) through continued movement of

players and the ball. Justin took Alfred's argument one step further by suggesting that even if the player was open on the early shot, that shot should be avoided because it was a shot that could be found later in the possession. He too implied that a better shot could be found through continued movement of players and ball.

Figure 15. Troy attempts a mid-range jump shot against St. Anthony's College.

1) Troy walks ball across half court then slows his pace at the top of key
2) Troy fakes right then crosses over back left
3) Troy stops quick and shoots a pull up jump shot (see image)

Missed two

From this multiplicity of perspectives, new conflicts emerged regarding the organisation of the team and system of play. Following film study and training that afternoon, Joey asked for a private conversation in the hallway. While wiping away tears, he expressed a frustration with his relationship to Troy. As neither a reserve nor the unquestioned primary scorer on the team, Joey was playing beside another primary scorer. For Joey, Troy's high expectations made him uneasy. "It's hard getting used to being second fiddle behind Troy," he said. "I don't like making mistakes when I'm with him. I always think he never believes in me. I just want him to tell me that I can do it. That he got my back no matter what happens" (Conv, J2).

Troy asked to speak privately after training. He shared in confidence that a growing issue was the struggle between Joey and him for a dominant position within the team. He said "I don't know if I'm wrong or not, but its a sense of competition between him and myself to

see who is the best player on this team. We're both first and second option" (Conv, T1). Troy had historically been the dominant player his team, including both basketball and rugby. As a result, Troy was used to teammates deferring to him on court. He said, "in rugby whatever I say to my teammates, they're just gonna do it. If they do it, it's like what I want on the court. If I tell Joey to cut and he doesn't do it, I'm gonna get frustrated real easy" (Conv, T1).

Four days later, Greenwood played a second friendly against Auckland Central High School. Played on a Monday at Greenwood after school, the match felt more official. A crowd of Greenwood students stood behind the bench, cheering loudly after every play. Like St. Anthony, Auckland Central High School played in the Premier grade and had considerable height, length and experience on their roster. Their starting five included the New Zealand Under 16 starting point guard, a 6'6 shooting guard with a scholarship to the United States and a 6'8 centre. Moreover, Coach John (Joey's representative coach) was their head coach. Under these conditions, there was uncertainty towards Joey and concern that the team would be nervous.

Auckland Central High School won 98-49. Following the game, feelings were mixed. "I think we played better as the game progressed. Each timeout was vital as we learnt what we needed to fix and the boys adapted fast," said Alfred (Conv, A). Despite missing most, some felt that they were able to create good shots through their motion offence. Tommy said "there were awesome spurts" (Conv, T2) and Reimar felt "we played quite well considering it was only our second game together" (Conv, R). At the same time, Alfred sensed a lack of consistency when he said, "we did not keep our play consistent…we did not play together the whole game" (Conv, A). In an especially detailed description of how the game unfolded, Brandon felt that some might have lost faith in the motion offence as the lead grew larger:

> The first several minutes of the game our team was trying to run our flow offence, which was good because we were getting great looks. But when [Auckland Central] started to lead by double digits our team panicked and lost focus of what I thought we were trying to achieve, which is to see ways of how our flow offence work on good defence, and also what can we improve on in offense and defence. As a result, our team started taking early shots with one, two or no passes at all. This momentarily stopped our flow offense and our forwards and sometimes our wings didn't get touches at all. A reason for this could be the home crowd as we try to put on a show and create highlights, but we really should keep composed and trust our offense and trust one another throughout the entire game. (web page, 11 April 2016)

5.2.2.4 New entries, playing Troy off the ball and naming 'flow'

When the Premier grade qualifying tournament finally arrived, nervous excitement permeated the team. Premier grade qualifying meant a lot to Jonah. He said "I feel that some don't understand how big it is. For me it's huge. We've never been here before. It's important to me that we do our best here. And try our best to get it. It's been two years in a row that we've come up short. It's personal" (Conv, J1). Interestingly, day one of the tournament brought change. Joey could not play. After a tuberculosis scare, Joey had to stay away from the team for the entire first day of tournament until test results cleared him. For Alfred, his religious commitment as a Seventh Day Adventist precluded him from playing basketball on Saturdays. I wondered their absence this would impact the others. Jonah responded, "That's huge. Boys gonna have to adapt. And no Alfred on Saturday. More pressure on Nathan, Troy and Daniel to score?" (Conv, J1). Jonah had address how to change the line-ups and substitution process. He said, "been thinking already and I agree about that. Now I need to think about who steps in to start" (Conv, J1).

Since the loss to Auckland Central High School, the Greenwood team had been making adjustments. First, the ACHS game proved that the team could generate good shots, even against taller and more experienced teams. At the same time, they struggled to convert their open shot. As a result, Jonah added time in training to outside shooting. This included competitive one-on-one games with King of the Hill rules.[11] Second, the team experimented with a greater range of 'entries' into set offence. Here, entries refer to the ways in which the offence initiates a half-court possession. Whereas continuity offences and set plays have explicitly designed entry points, motion offences grants players the freedom to decide when, where and how to start a possession. However, Troy worried that the team became predictable when they habitually initiated each possession with a dribble handoff to the wing. "It's the first time everyone has run the offence with just the handoffs," he said. To address the issue, Jonah introduced 'Michigan', a configuration that positioned a forward at each 'elbow'. Michigan offered a structured format for starting a possession that flowed right into motion rules for play. Jonah felt that the work done to this point made Michigan easier to learn. He said, "What we've done to this point allows us to pick this up faster. You learned the concepts first then the sets" (Conv, J1). Troy agreed, "It's our motion, were just starting it differently" (Conv, T1).

[11] In King of the Hill, the individual (or team) on offence remains on offence if they score. If offence does not score, defence becomes offence. The next in line to play starts on defence. The winner of the game is the first to reach a pre-determined number of points scored.

Finally, Troy made changes to his play in advance of the tournament. Troy felt he needed to play more without the ball and be more patient when he did have ball in hand. Troy credited the St. Anthony video with helping him see some tendencies he previously took for granted. He said, “before the video I would always go ‘I’m gonna make that pass’. Make it, turnover. [Against Auckland Central] I reckon I asked myself, is it a good pass? And I held back” (Conv, T1). Isaac, Jonah’s brother, had ‘growled’ Troy for not passing enough and “pissing your teammates off” (Conv, T1). Troy realised that his decision-making created tension with his teammates against St. Anthony and, to a lesser extent, Auckland Central. He said, “I can tell when my teammates think that way, just the body language” (Conv, T1). To adjust, Troy asked that Jonah instruct him during games to play off the ball when he demanded the ball too much. “Just force myself to get away from the ball. Jonah, just tell me to get away from the ball on the inbound. So, I’ll just get away from it. And I reckon that helps a bit” (Conv, T1).

5.2.2.5 Playing in Flow for the first time against Morningside

After winning their first two games on the first day of the tournament, Greenwood lost both games on the second day. As a result, they did not advance out of their pool. Unexpectedly, the boys seemed happy, not for the outcome, but for how well they had played. For Nathan, the tournament was a success. He said, “I reckon we played really well” (Conv, N). He sensed a progression from game to game that culminated in an improved understanding of how they needed to play to compete at this level:

> The first game was a little sluggish…Then kinda third quarter we came out and were all confident. Then second game we just blew them out. I mean, Troy with like five threes and that's when we kinda knew what we had to do as a team. But that Morningside game was like wow! We played the best ever basketball I've ever seen from a team in NZ. (Conv, N)

The match against tournament favourite Morningside revealed moments of brilliant motion offence. Most especially, the team’s third and fourth period possessions included multiple sequences where players drove, passed out and the ball continued moving until a ‘wide open’ jump shot or layup (see Figure 16 for an example). Observers shared praise of the team’s ball movement, including comments to Jonah from friends who watched from the stands. Jonah recalled, “I received so much love from so many outside people. My buddy from the North Shore said ‘you and your boys are so well bonded and the hype is too real. ‘They’re such a lovely team to watch. And your offence movement is insane OMG!!’” (Conv, J1). Campbell agreed, “our spacing was great! Our movement was good, we made the defence move a lot” (Conv, C). Like Campbell, Troy felt that continuous movement

allowed them to disrupt the rhythm of the defence. He said, “I think it’s just constant movement. Its so that your defender focuses on you moving instead of the ball.”

Figure 16. Troy drives and passes out to Joey for a three-point shot.

1) After securing the offensive rebound, Nathan passes out to Jayden on left wing
2) Jayden immediately passes to Joey at the top of the key
3) Joey immediately passes to Troy on the right wing
4) Troy catches, fakes right then drives left to the basket
5) When Joey’s defender steps over to stop Troy’s drive, Troy passes out to Joey as he wheels away (see image)
6) Joey catches and shoots an open three point shot.

   Made three.

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In order to play this way in a competitive game against top competition, Troy felt that a shift needed to occur in how conscious they were of movement itself. This required a delicate balance between ‘paying attention’ to movement and not ‘over-thinking’. Playing this way called for an orientation, or mindset, that we cued to the team as ‘Flow’. Troy said:

> Yeah…Once we paid attention to it, then we got it. In games, not thinking about it just moving naturally…that’s one thing the boys need to pick up more…not over-thinking. When you say ‘flow’ that becomes the mindset…ahh I have to move. Instead of looking at the empty spaces, they don’t react to it. I think it comes down to how well we move the basketball. (Conv, T1).

5.2.3 Troy, “I don’t want to be known as the guy who choked” (Case 2, Part 3)

Troy’s experience during the 2016 Winter season illustrates the complex social dynamics of athlete decsion-making, including shot selection. On the court, Troy dominated the ball, took contested shots and showed little patience with his teammates’ mistakes. Not only did Troy want Greenwood to earn a promotion to the Premier grade, but he wanted to be the

one responsible for the achievement. Troy felt that team achievements would solidify his social standing as an elite athlete:

> I guess it's just these expectations I carry around school. Everyone looks at me. The past individual accolades I've received. They think I'm the best in the school…I feel like I'm the best on the court. I guess its just expectations that I have to live up to. Its just, walking around school I don't want to be known as the guy who choked. (Conv, T1).

Despite viewing rugby as his primary sport, Troy identified strongly with basketball and the expectations that came with being a top athlete in the school. Troy entered the 2016 Winter season with high expectations. In effect, Troy felt significant personal responsibility for the Greenwood senior team's performance. He expressed that feeling in the following way, "I have a lot of responsibility. Everyone is going to look to me as the leader of the team and that I let these guys down" (Conv, T1). Now in his senior season, Troy felt a duty many to deliver a successful season. He said, "obviously there's a lot of people I don't want to disappoint. My coaches. My teammates. I wanna do my best" (Conv, T1).

5.2.3.1 Becoming 'the star guy' at Greenwood

No player embodied the evolution of Greenwood basketball programme like Troy, a player whom Jonah said "moulded into the star guy" (Conv, J1) during the team's run to the secondary school national tournament in 2014. A handful of grainy, three-minute YouTube clips provided visual evidence. During one South Auckland match, Troy drove from the perimeter relentlessly. Early in the match, he received a pass high on the left wing then faked a right-to-left crossover dribble. When a driving lane opened down the middle of the court, Troy quickly gathered speed despite the defender on his left hip. Finding a gap between two help defenders, Troy exploded into the space between them by ducking his head and covering the ball with both hands (Figure 17). Emerging from the gap, he finished the play with a right-handed lay-up. Turning immediately to defence, Troy sprinted to his role as the front man for BLUE, the team's 1-2-1-1 full court press. When Troy double-teamed the ball-handler, a risky cross-court pass led to a steal and wide-open lay-up for a teammate. Jonah's commanding voice echoed across the gym in approval.

Figure 17. Troy drives through the defence during a 2014 South Auckland match

Troy received his first promotion to the senior team in year nine, at just 13 years old. Despite being three or four years younger than most of the team, he played a lot in that first year. When Jonah moved from the Under 19 team to head coach of the seniors at Greenwood, Troy's role changed. After becoming a reserve player, Troy played so little he cried after many games. Jonah's benching of him had a humbling effect, so much so that Troy quit rugby at the start of 2014 to focus more on basketball. He began training on his own, imitating the moves of NBA players that he watched on YouTube. He also trailed for the South Auckland representative side and made the U17 B team despite still qualifying for the U15 age group. After growing a few inches and maturing physically, Jonah said that Troy became Greenwood's hardest worker in practice and most intense player in games. Teammates marvelled at this intensity, particularly his habit of wearing headphones before games to block out distractions. On the court, Troy did a little bit of everything. Not only was he the leading scorer, Troy also rebounded well for a guard and was the second ball-handler against pressure. As a 15-year old in Year 11, Troy received MVP at the end-of-season sports dinner.

As Troy earned accolades for his sporting achievements, he came to appreciate Jonah's move to 'bench' him in Year 10. Troy felt that that period challenged him to grow. Playing with older and more experienced players, Troy needed to carry himself in a way that befitted a team with high expectations. Reflecting on that time, Troy recalled how his older teammates' maturity helped him craft an identity. He recalled, "They were more mature, in a way. I find it with myself. Everyone says I was more mature even though I was young" (Conv, T1). For both Jonah and Troy, that 2014 team embodied an ethic of care that both

recalled fondly. When Greenwood officially qualified for the national tournament, one of the boys on the team could not afford the trip to Palmerston North. Unbeknown to anyone, Lewis, their team captain, covered his teammates' cost out of his own pocket. He worked four extra weekends at his part-time job to pay the $500 and insisted that it be kept a secret. For Lewis, such actions reflected his approach to leadership. When teammates were bullied, he came to their defence. When Jonah gave him negative feedback, he accepted the criticism and moved on. For Troy, Lewis was the undisputed leader and recalled the moment in training when he came to that realization:

> I remember it was one training and I threw two turnovers. One was mine completely but the other was someone didn't catch the ball. I went off at him then Lewis told me off. Then I got subbed off. [Jonah] kinda yelled at us, "this is Lewis' team" and that's when I realised that I needed to take a back seat. That's when I found my role on the team. (Conv, T1).

During the 2014 season, Troy and Jonah cemented a bond that transcended traditional coach-athlete boundaries. Jonah regularly drove Troy to and from games and training. Concerned that he might not have food at home, Jonah routinely invited him to stay, eat and play video games. That support helped given Troy's home situation. His parents were back home in Tonga while his two older brothers worked odd hours and were frequently between jobs. In this void, Jonah became a caring adult that Troy could rely upon and share experiences with, "[Troy] played [representative] Under 17B's and he loved coming home. He loved coming back to school on Mondays and telling me what he did in reps" (Conv, J1). Increasingly, Troy became part of Jonah's family as their lives intertwined. When Jonah became head coach of the [representative] Under 19 side in 2015, Troy joined the team. Jonah's youngest brother was Troy's best friend and teammate in both basketball and rugby. They worked out together and spent the night at Jonah's house. When Troy made the Greenwood first XV side and earned player of the year, Jonah and his siblings went to watch every game.

Reflecting on his formative years at Greenwood, Troy acknowledged how much support he had received. His coach and older teammates modelled a mature and patient approach that allowed him to work through mistakes. He commented, "I think once I look back to my first years, they were patient with me. They were never flustered" (Conv, T1). Troy even received financial help. When he could not afford to pay for the first XV's tour to Australia, the Sport Director covered Troy's fees from the Greenwood sports office budget. As Troy's workload increased, the abundant rides home and home cooked meals from Jonah and family helped to ensure he was fed and returned home at a reasonable hour. Perhaps unsurprisingly, Troy expressed a sense of gratitude and indebtedness for the help of this

extended family:

> Oh definitely…its just family is one thing. [Jonah] and his mum have been with me since Year 9…this last year I wanted to do something for them. I wanted to award them with a Nationals trip, Prems. (Conv, T1)

5.2.3.2 I expect everyone else around me to know what they're doing.

For Troy, there were signs of declining engaged during off-season training and preparations for the Premier grade qualifying tournament. During training and film study, Jonah noticed that Troy's level of interest and effort fluctuated. Jonah reacted especially strongly to a session when Troy appeared to make jokes in the back of the room. Jonah recalled, "I think you had the video for it and you could hear him. Yapping. He's just making jokes, laughing and stuff. I'm like what are you doing?" (Conv, J1). During a friendly scrimmage against a Chinese team in February, Troy shifted in and out of playing seriously. During one moment in the game, Jonah recalled how Troy "suddenly turned off score mode" (Conv, J1) and, joking around, said "watch this, I'm gonna get 10 assists" (Conv, J1) The sudden change led to Troy over-passing and thereby avoiding clearly good shots for him and the team. For Jonah, it was another indication that Troy was "completely different this preseason to any other time" (Conv, J1). Whereas Troy had typically been the "the catalyst that amped everyone up" (Conv, J1), he had been noticeably silent in 2016. Consequently, Jonah worried that his most experienced player had not embraced the responsibility that came with being a Year 13, returning MVP and team captain. "Its not really the label as much as it's the authority", Jonah said. Like Leroy before him, Jonah wanted to see Troy "being the go-to-guy when things get rough on and off the court" (Conv, J1).

Jonah saw Troy move between a disinterested attitude to serious and controlling. He observed, "It's like, either he really enjoys it and doesn't take it seriously or he takes it too seriously and he doesn't enjoy it" (Conv, J1). For Jonah, this volatility undermined some of Troy's credibility as a leader within the team. He noted, "there's days when he'll come in and guys don't enjoy practice, being around him. It's like, dude you can make this so much easier if you enjoy it. Take it seriously but enjoy it" (Conv, J1). In this respect, Jonah struggled to navigate his relationship with Troy, "It's hard. I have to play older brother and coach at the same time. It's older brother with restrictions" (Conv, J1). Instinctively, Jonah wanted to tell Troy off, the way he would his younger brother Paula. However, he hesitated for fear of offending Troy's family, a sign of Jonah's respect for the authority and lines of responsibility that come in a Tongan family. He said, "I don't want to overstep. I don't want them to feel that I'm the actual older brother figure. That I'm the guy that helps him run his

life."

As Greenwood struggled against St. Anthony and Auckland Central, two experienced Premier grade schools, Troy felt a difference in ability between himself and his teammates. In 2014, players like Jackson and Leroy had forced him to raise his level of play, not the other way around. "I think it's just an expectation I carry around. I expect everyone else around me to know what they're doing," he said (Conv, T1). In this vein, Troy found himself frequently comparing the 2016 team to the 2014 squad. In fact, he silently harboured a critical view of what he viewed as immaturity in the 2016 team. Despite improvements in training during term four and the early parts of term one, Troy felt that the team had not yet won anything and therefore had nothing to celebrate:

> I look at this year's team and it took Jonah weeks just to drill something into them. I think just the way that we celebrate at training this year…someone makes a lay-up and everyone is jumping around. The [2014] team would be like, 'good job' but I don't care. Move on. Not being disrespectful, but I see it as being childish. We haven't won anything and you're celebrating too early kind of thing. (Conv, T1).

Now his final year at school, 2016 represented Troy's final opportunity to take Greenwood to the Premier grade. Consequently, Troy felt little reason to be patient with his teammates' development. He stated, "I guess it's just being in this team for so long I just wanna get to the top level already. I've been in South Auckland Grade for like four years now and I wanna get out" (Conv, T1). Ultimately, Troy made himself the primary ball-carrier and attempted shots early in possessions without passing to teammates. In some cases, he drove from end line to end line, or 'coast-to-coast' (see Figure 18 for an example).

Troy felt he could raise the team's level of play by taking over the game himself. "I kinda just thought that my actions would just…instead of telling them off, I felt that actions, the way I played during scrimmages and drills could impact and they would see", he said (Conv, T1). Identifying as the "main threat", Troy felt he could carry the team by doing a little bit of everything. By grabbing rebounds, stopping the opponents' best player, taking the ball to start possessions and attacking early, Troy had constructed personal logic for play that would maximise his impact on the outcome. Troy admitted that that logic was not without risks:

> If I miss, I normally get subbed off. It's a risky shot and it's a shot we're not trying to work for. What I found this year is whatever you guys told us to do, *I kinda did my own thing*…You guys would say, 'make the extra pass.' I would say 'I'm gonna take that shot.' A few times Jonah told me what to do and I just brushed him off. If I do, do it. I want to execute. (Conv, T1).

Figure 18. Troy takes the ball ‘coast-to-coast’ against St. Anthony.

5.2.3.3 Learning to hold back and have “the second thought”

As issues in Troy’s decision-making emerged, a central question became how to confront them. Younger players silently deferred to Troy’s seniority. At the same time, Jonah felt a reluctance to impose his authority on Troy, given the blurred lines of their relationship. As a result, a need existed for a middle space where Troy could openly and honestly engage with issues. Somewhat unexpectedly, it was Troy who initiated a conversation to address some of the underlying issues in his play. Initially, Troy’s approach surprised me. He wanted his coaches to “be harder” on him, including me. Troy sensed that something needed to change. The team lost, he played poorly and now the team questioned his decision-making. Troy explained the situation in blunt terms. He said, “this is my last year. I want to be told off if I’m doing something wrong. If you just tell me then I’ll do it straight away. Obviously, I’m going to respect everything you say…just tell me what I’m doing wrong.” (Conv, T1). Interpreting his request as a call for feedback, I used the opportunity to share my view of how his decision-making could change.

> We talk for 15 minutes. [Jonah] comes by after 5 minutes. I tell him a range of things about his play and decision making in today’s scrimmage: much more sharing the ball, positive reinforcement of teammates, not forcing mid range jumpers (Field note, 7 April 2016)

Following the Auckland Central match a few days later, Troy was more aware of his tendency to dominate the ball and to habitually drive to the basket as a first option. He said “I guess that’s the mindset I’m stuck in…Its just how I react to it, I guess” (Conv, T1).

Troy's growing awareness of habits included a tendency to force things and rush his decisions. He remarked, "If I see an opening, I'm just going. I guess I'm still learning how to hold back. I'm still rushing with my choices and stuff. That could affect it as well" (Conv, T1). In fact, Troy made a connection between his basketball habits and rugby instincts. In basketball, Troy attacked gaps and absorbed contact in ways that mirrored his position as a winger with the First XV. Early in a first half possession against Auckland Central, Troy drove to the basket through a small gap between defenders (Figure 19).

Figure 19. Troy attacks a gap between two defenders against Auckland Central.

For Troy, attacking gaps occurred without conscious thought:

> When you play rugby as well, smallest gap…you just take it. The same thing relates…I remember there's a few times for [my representative team] where we come against a 2-3 zone and I catch the ball between the two at the top and just split it. It's the same mentality of being aggressive. (Conv, T1).

Troy felt himself becoming more conscious of his decisions against Auckland Central and attributed the change to watching himself on video. When asked about the difference in his decision-making between St. Anthony and Auckland Central High School, Troy commented:

> Against St. Anthony, as soon as I made my move, straight away I was going to take the shot. Tonight, when I made my move, 'should I pass?' So it's just the second thought and now getting better at what I do next. (Conv, T1)

Troy was experimenting with different actions to resolve the problem of dominating the ball. Primarily, he intentionally played more without the ball. By being the ball carrier less often, other players had more opportunities to make decisions. Troy observed “if I’m demanding the ball too much and not doing anything good with it. I’m gonna try and make up for it the next play. So just getting me away from the ball, I guess” (Conv, T1). Troy recognised that playing without the ball would be a challenge. He said, “I have to take upon myself to get away from the ball. Trust Joey to bring it up” (Conv, T1).

5.2.3.4 Less ‘bullying’ and ‘hero ball’

Shaped partly by his experience in rugby, Troy developed a degree of physicality that distinguished him from teammates and opponents. Troy regularly used his shoulder and trunk to overpower, or ‘bully’, smaller or weaker defenders. This tendency was most obvious when Troy sprinted with the ball in transition. Running at full speed, Troy would lower his head and point his shoulder at gaps between defenders. As he neared the basket, Troy would initiate contact with additional oncoming defenders by projecting his body into them if they stood between him and the target. Reflecting on his approach, Troy referenced the need for ‘Mongrel’, a willingness to “take it up strong” (Conv, T1), when defenders confronted you on drives.

Troy’s physical ‘bullying’ of opponents was a manifestation of ‘hero ball’, a style of play that involved a single player attempting to dominate the game without including others. Troy acknowledged that he often took it upon himself to take over games, typically by being the first ball carrier, overpowering opponents and taking the shot on each possession. Troy sensed that this approach hurt the team. Following the losses to Auckland Central and St. Anthony, Troy observed that when he took bad shots without sharing the ball, he made it more okay for others to do the same:

> I reckon if I drive in and take the first three shots, my teammates are gonna take the same shots. Wild shots, first shot they see. I guess I just gotta do a better job in terms of the reverse. If I reverse, they will. If I’m playing hero ball then everyone else is going to take it upon themselves. (Conv, T1)

Troy’s experience led to reflection on his motivation and focus. He said, “I haven’t really told anyone, but I kinda got caught up in the individual accolades. I kinda wanted to do everything by myself, in a way” (Conv, T1). In fact, Troy sought out forms of inspiration that would reinforce an individualistic approach grounded in physical domination. He noted, “Before tournaments, I remember I always watched clips for random motivation. Like Kobe [Bryant], *killer mentality*, kinda stuff. It was just to make a name for myself” (Conv, T1).

Ultimately, Troy realised that ‘bullying’, ‘hero ball’ and a ‘killer mentality’ undermined the team’s development. As a result, Troy became critical of himself. He said,,“I feel disappointed in myself. I think about how I kind of restricted some of the boys this year. Just taking freedom, the ball out of their hands kind of way” (Conv, T1). Ultimately, Troy felt a need to focus less on outcomes and more on process:

> I was just gonna say that I forget about the process I have to go through. I think about Prems, Nationals but then I don’t think about all the training I have to do to get myself ready. Its what I’ve felt with myself is that I didn’t really put in the work as I did in previous years. I kinda relied on my natural ability and talent just to take me. (Conv, T1).

5.3 Winter season, finding ‘Flow’ and crossing team boundaries (Case 3)

5.3.1 The overlap of school and club seasons during term two (Case 3, Part 1)

After not qualifying for the Premier grade, Greenwood re-joined to the South Auckland senior grade. As an event with multiple senior and junior grades, the South Auckland competition signalled the start of winter sport season and term two. Greenwood arranged 19 total teams that ranged in age grade from u15 to u19. Jonah took on a key administrative role in organising teams, appointing coaches, coordinating uniforms and finding court space for training. At this time, representative club basketball also ramped up. Weeknight trainings and weekend competitions for clubs affected Joey, Troy, Tommy, Nathan and Mark. The overlap between school and representative club basketball created major tension in the region. In addition to worries about load management, participating on multiple competitive simultaneously generated conflicts in style of play and availability. Ultimately, the Greenwood team made adjustments to its schedule and programme delivery.

5.3.1.1 Winter School Basketball

In contrast to the previous period, term two involved more competitive matches and less team training. The South Auckland senior grade called for a regularly scheduled match each Tuesday at one of two venues in South Auckland. From May to mid June, the senior boys trained 17 times while playing 10 games, a ratio of 1.7 trainings for every one match. By contrast, term one had a 3.6-to-1 training-to-competition ratio (22 trainings and six matches).

Importantly, term two revealed the downstream effects of rising participation on a school’s sport department, coaches and players. Massive growth in the demand for basketball challenged the Greenwood sport department’s ability to manage the South Auckland

competition for the entire basketball programme. Citing a desire for students to “not miss out” on an opportunity of representing their school, Greenwood’s principal instructed the department to include as many school teams as possible in the South Auckland competition. A few weeks before the start of the competition, Jonah and the Sport Director met with the principal to address the capacity of the department deliver on this promise. For 2016, the number of total teams grew from 14 to 19. Offering so many teams meant guaranteeing an equivalent set of coaches, training times, uniforms and forms of transport. With fewer teachers coaching and limited funds to hire outside coaches, the sports office frequently turned to current student-coaches, including current junior and senior players.

As the sports coordinator responsible for arranging these logistics, Olivia felt at times that investment was not always worth it. Olivia felt that sport was not necessarily important to some students, parents and teachers. In 2105, she noticed that a growing number of students did not follow through on their commitments to the team, “I honestly think we should sign a contract. They don’t have to play in the top team if they don’t want but in the contract you have to be at every training. That’s a basic commitment. I think its because people don’t see sport as important.” Jonah and Olivia also worried that playing for an age group team could sometimes result in a bad experience. The combination of limited training time and inexperienced student coaches often resulted in teams losing by very large margins, such as 66-6 and 78-8.

5.3.1.2 Representative basketball

Term two also includes two major competitions in representative basketball. First, ‘SuperCity’ was a regional competition for teams in Auckland and took place in May. Representative teams trained during the week then played on the weekends at a large multi-court facility in West Auckland. In addition, the regional and national championships for representative basketball took place in late-May and mid-July, respectively. Based on their performance in SuperCity, the representative club teams joined a round-robin qualifying tournament for nationals in July. Between the end of SuperCity and the start of Nationals, teams continue to train and/or travel outside of Auckland for weekend camps to prepare. For Greenwood, one third of the team played representative basketball for the Auckland club. Troy and Joey played in the U19 age group while Nathan played in the U17 grade.

Representative play presented both opportunity and conflict. First, playing representative basketball was viewed as a higher level of play than school. Because representative

basketball initiated the pathway to national representation, the players viewed it as a chance to play with the best players from the region in their age group. Based on their play in reps, clubs nominated some to attend national trials for respective age group teams. National team coaches often attended representative tournaments as part of their talent identification process. In this respect, selection to a representative team contributed to status. That said, selection to a representative team required a financial commitment from participants. Participants paid an initial fee ($20-30) to trial and a second fee ($250-300) after selection. When teams travelled for camps or the national tournament, their families covered the additional cost of travel and lodging. In these respects, financial considerations led some Greenwood players either to either hesitate in joining a rep team, or drop out altogether. Whereas Troy entered 2016 unsure if he could afford representative basketball, Tommy, Daniel and Mark's families could not cover the costs of membership.

Moreover, the overlap between representative basketball and inter-school competition added to coach and player workload. The process for representative basketball began in term one with trials and Easter tournament. By the second week of March, some were training during the week for their rep teams and training with the senior school team. May became especially busy wen both SuperCity (weekend tournaments) and South Auckland (Weekday matches) were on. Acknowledging the historical overlap between school and rep basketball during term two, the Auckland club CEO lamented the persistence of representative basketball during term two and conceded that the seasonal calendar was out of his hands. "We do it backwards here," he says. The Auckland CEO preferred that the national body to move representative basketball to the end of the secondary school season so that invitations to trial for a representative team followed the school season. In his estimation, this change would force boys and girls play to in their regions before being selected to represent them.

5.3.1.3 Accommodating the extra load during term two

Jonah bore much of the operational burden of term two. Primarily, his challenge was to juggle a bigger administrative workload and a messier schedule for his team. Jonah took responsibility for finding and supporting all teams. He ran the trials, found coaches and finalised rosters. Jonah then worked with Olivia to coordinate training times, travel arrangements and team uniforms. Given the dramatic rise in teams (and time needed to support them), term two impact Jonah's availability, the senior team's schedule and, ultimately, the amount of time we spent together on court. With 19 teams competing for a

venue time, gym availability decreased. Friday trainings were cancelled. Due to rep basketball and student coaching, numerous players could no longer attend film review. In response, Jonah created a team Facebook page to post team video and facilitate online discussion. This included comments, group chats and response surveys.

5.3.2 Finding flow in term two (Case 3, Part 2)

In term two, the Greenwood senior team built on the positive momentum from their play at the Premier grade qualifying tournament. In particular, 'Flow' emerged as cue to read the play, not force things and increase movement. During a late-May friendly match against the New Zealand U16 select team (NZA), the team consolidated their new model for offence as they found open shots, converted more of them and distributed shot attempts equitably. Confidence peaked in a South Auckland match that Jonah described as "beautiful basketball" (Conv, J1).

5.3.2.1 Flow as a maturing concept for play

In February, a friend travelled to New Zealand for a holiday. During that time, she observed a Greenwood training session that included small-sided games and five-on-five play. When she returned again in June, she watched a training session, the South Auckland match against Edgewater and the NZA friendly. In the car ride following that week's Monday training, Jonah and I reflected with her on the team's progress:

> [Friend]: It's hard for me to reference, but I feel like the team is … I dunno…they're good! I think I said they were good last time but there was definitely a flow this time that I don't think I recognised.
>
> Jonah: That's what our offensive is called – Flow.
>
> [Friend]: The analogy that came to mind was water: when you see water go in and flowing, especially if you take it to the ocean and see how fish go. When someone from the outside comes in and the water is flowing that way, you have no way to go but the way the water is going.
>
> Vince: *There is a famous Bruce Lee quote, "Be like water." There's a whole quote about this.*
>
> Jonah: Far out! This is all intertwining and making its own sense… [Searching for the Bruce Lee quote through the Internet on his phone] "Be like water. You put water into a cup, it becomes the cup. You put water into a bottle, it becomes a bottle. You put water into a teapot, it becomes a teapot. Water can flow or it can crash. Be water, my friend" True dat! That's awesome. That makes a lot of sense right now.

A nurse and yoga instructor, this friend had no experience with basketball beyond casual fan interest. Nonetheless, her evocative comparison of basketball offence to the flow of fish in water struck both Jonah and me. Recently, we had been using the word 'flow' in our

conversations. For instance, Jonah invoked the term when describing Nathan's decision-making at training, "Nathan hit three threes in a row all off awesome *flow*." By the Premier grade qualifying tournament, flow became a term for referring to the offensive system and cueing action from the sideline. Powerfully, this car ride conversation suggested that flow might mean even more. After Jonah read the quote from Bruce Lee, we drew explicit connections between the metaphor of water and the need for a fluid disposition when playing basketball. I described it as "whatever comes, you take." For our friend, surfing offered an even better analogy, "When you're trying to control and you crash into the water for the first time, what do they tell you to do? Relax right? Let the water take you. Don't try to fight it."

With Flow as an apt descriptor, basketball at Greenwood was transforming. In a Facebook conversation after the tournament, Nathan compared Flow to championship professional teams, "when we were playing at our best, what 5 passes? Pass, drive and kick, kick, open shot. I mean, you don't see a team that's very likely to do that. I mean that's some Golden State offence or even the Spurs." Stimulated by the posting of footage from the tournament, the team reflected on their progress since the match against St. Anthony. The sense was that when Greenwood played in Flow, they played beautifully and could find open uncontested shots against any team. For Jonah, this growth made him excited:

> I'd even say rep teams and national teams are not improving the rate we are. Although we have more room for improvement I still think we have not only accelerated our improvements and progress we've also raised our ceiling. I genuinely think the way we train now allows guys to have unlimited potential in the way we play and control the game. I feel that's the main thing is we control the game possession by possession because we let the boys control those situations in practice, if that makes sense. For example, lifting off a pick and roll. As simple as it is, the fact our boys can do it without second thought sometimes, and then counter it with a back door instead, shows we are in control of the situation

5.3.2.2 "The game against NZA definitely got us to believe in everyone's shot"

For 2016, returning u16 national team coach Head Coach Doug M. changed the process for selection. Rather than form one squad of 12 athletes, Doug formed two. Doug argued that Basketball New Zealand's (BBNZ) international teams would benefit in the long term by increasing the pool of players in this age group. Given that most trialists were just 14 and 15 years old, Doug sought to avoid a relative age effect by keeping skilled but late developing players in the system. Doug executed this new strategy in two ways. First, he invited a larger pool of players to participate at the monthly national camps. Second, he formed a second team, New Zealand A (NZA), to compete at a major tournament for Melbourne-based clubs in early June. For the team camp in May, Doug invited Jonah to

play bring the Greenwood team in for a scrimmage against NZA at St. Anthony College. Scheduling friendlies against older teams had been a key feature of the national team's developmental philosophy. In the morning session on Saturday, May 28, the NZA team played a friendly against a U17 representative side. For the afternoon, Greenwood arrived to play NZA.[12]

Inspired by Flow as a metaphor for play, I observed the game looking for the qualities of water in nature: continuous movement, nothing forced and responding appropriately to the elements around it. When Daniel fell grabbed an offensive rebound, Jonah called out 'Flow! Flow!' from the bench. In an instant, bodies re-organised. Daniel passed to Jayden then relocated to the block opposite the ball. Tommy and Mark opened space by running from the middle of the court into the right and left corners, respectively. Justin then moved into the open space in the middle of the court above the three-point line. The ensuing sequence of passing, cutting and filling unfolded organically as the ball spent little more than a split second in the hands of each player. Eventually, this movement of bodies and the ball ended in an open three point shot in the corner for Tommy. At halftime, one of the New Zealand coaches walked over and whispered in my ear, "these guys have nice ball movement."

The New Zealand A match became a seminal moment. Without Troy and Joey, it provided an opportunity for others to take on more responsibility. Five players handled the ball more and thus make more decisions -- Justin, Daniel, Nathan, Mark and Jayden.[13] In fact, a post-season analysis of shot decisions revealed a change in playmaking responsibility and shot distribution compared to other games. To better understand the distribution of responsibility within the team, we started to calculate a possession rate that would determine how often a player made the final play of a possession. Drawing on statistics from Premier grade qualifying and South Auckland, we were able to calculate how often a player ended a possession by shooting, committing a turnover or being fouled. Unsurprisingly, Troy (20.2%) and Joey (16.7%) had the highest rates to that point in the season and for the season as a whole. However, the NZA match differed. Jayden (18%)

[12] These matches between representative, national and secondary school teams produced complex dynamics. For instance, the starting point guard for the senior Under 16 national team was also the starting point guard for the representative team. In order to play on both sides in the same game, this player switched jerseys during intermission. Similarly, Nathan played for both the Greenwood senior boys and the representative. As a result, he played in two games that day, the morning with his representative team and the afternoon with Greenwood.

and Daniel (15%) ended more possessions in this game than any another other all season. For Mark (15.5%) and Nathan (15.5%), the game ended the season as their second highest.

Two days after, Justin and I exchanged text messages about the game. For Justin, 2016 was his first year with the Opens and his playing had been inconsistent to this point. The NZA match afforded him a rare opportunity to be a primary ball carrier. This included receiving the ball at in-bounds, advancing the ball across the midline, responding to the first wave of pressure defence then initiating the first actions of Flow. Justin praised the "team game" they played, especially how they were "finding open gaps and teammates and getting everyone touches." Not coincidentally, Justin felt that the game improved everyone's confidence. "The game against New Zealand definitely got us to believe in everyone's shot" he said. As our conversation turned to his own play, Justin identified that not shooting actually helped to promote Flow:

> Justin: From what you see of my recent game performances, do you think I pass too much?
>
> Vince: Well I think we have so many players that are focused on scoring that it's great when you're on because you don't force it. You are carving out a role that is based on defence, moving the ball, spacing floor and *helping our flow*.
>
> Justin: Yeah that's why I don't try to look for my shot that often, I am aware that the other guys take most of the shots so I figured that if I look for my shot it will just makes things worse for the team. (Conv, J4)

Two games removed from the friendly against New Zealand A, confidence peaked during their match against Royal. Troy felt that Royal was the toughest opponent they faced in the grade all year. Given his experience in South Auckland, Troy welcomed the quality competition out south,

> I think [the South Auckland Opens Grade] was the toughest it's been. Royal, they were good. St. Joseph's were tough. The last two years it's just been Greenwood and Elmwood…I didn't expect much, just the same old teams. Turn up thinking it's just a social league. I think when it started I was just laid back, maybe a bit too laid back. (Conv, T1)

Entering the match, a healthy atmosphere permeated the team. Troy made a conscious decision to share the ball with his teammates. In a conversation with Isaac on May 11, Troy expressed his intention to take a step back during South Auckland games by shooting less. In his view, this would help the "other boys have a go." At the same time, the NZA match increased the confidence of players like Daniel, Mark and Nathan. In these

respects, a shift was happening in how scoring and playmaking were distributed within the team.

Early in the second half, Greenwood's third offensive possession illustrated how this shift manifested on the court (see Figure 20). Just after halftime, Greenwood led by 10. During the intermission, Jonah said to the group, "we've been playing our best when we move the ball" (Conv, J1). Joey echoed that feeling when he said to the others, "keep it simple. Keep everything simple guys" (Conv, J1). When Tommy could not receive a clean handoff from Troy, he simply kept running and emptied out to the other side. When Troy no longer had a dribble available, Daniel moved into the open space to be available for pressure release. In the brief second that he had the ball, Daniel stopped, turned his body to the court, scanned the floor then passed and screened for Troy. When two players doubled teamed Troy on the screen, he calmly accepted the pressure, found his open teammate under the basket and threw the appropriate pass to ensure an easy layup.

In our discussion after the match, Jonah expressed how Flow promoted faith in their offence, a trust that reading the situation and taking what was available would result in the players finding the appropriate solution. For Jonah, he enjoyed seeing the team find solutions on their own, "That's been the coolest thing this year….And its like, there's a guy back door. Even if he's covered Joey is gonna find a way. Mark is gonna find a way to get the ball to him. It's really cool to watch. Its entertaining as hell." In looking at the post-math sore sheet, the scoring this game came from a more balanced distribution of scoring and fewer shots needed to score.

> Vince: Its much better balance now in terms of shot distribution
> Jonah: Yeah instead of Troy and Joey coming down off an on-ball
> Vince: If you look now it's a balanced attack. Troy scores 19 but then you have five or six other guys between six and 12. That's great balance. Again another game where someone else scores a lot of points. Troy when he can be efficient like that, man that's just completely changes what's happening. Just the efficiency.

Figure 20. Flow offence during a South Auckland match

1) Joey crosses half court with the ball. Tommy cuts diagonally through mid court.
2) Joey passes to Troy high above the right wing
3) Troy dribbles at Tommy for a handoff but Tommy is marked closely
4) Troy stops his dribble and lifts the ball overhead. Tommy runs behind him.
5) Daniel lifts up to the right elbow and Troy passes to him. Tommy clears out.
6) Daniel looks briefly to the left then passes back to Troy on the right wing.
7) With Troy alone on the right wing, Daniel ball screens for Troy (see image)
8) Troy fakes right then dribbles left over the screen. Daniel rolls to the basket.
9) Troy stops, lifts the ball overhead and passes between two defenders to Daniel
10) Daniel receives the ball, gathers and jumps to the basket.

Made two.

5.3.3 Nathan (Case 3, Part 3)

A new-to-school player, Nathan struggled adjusting to Flow as he crossed the boundaries between Greenwood, his training academy and representative club team. When Nathan scrimmaged at Baller academy, he played as a primary ball carrier as his trainer encouraged everyone to score first rather than pass. With his representative side, Nathan played off the ball as a three-point shooter who primarily stood in the corner. With Greenwood, Nathan played extensively with and without the ball in a motion offence that challenged him to read the play and find the best shot for the team. In this movement between systems, Nathan experienced conflicts in deciding when to shoot and expressed frustration at the difference between systems.

5.3.3.1 Moving to Greenwood “If I miss, I might look bad”

Before moving to Greenwood, Nathan attended Orangewood College, a secondary school just a few minutes down the road. At Orangewood, Nathan struggled academically, “Everything: Math, English. I’ve never been exactly good. I just find everything harder.” After being assigned to A Block, where “slow learners go,” Nathan took longer routes to class so that people would not find out. He also resented teacher apathy, "Teachers didn't care if you passed. They just did whatever. Write the stuff on the board and copy it down." In this struggle, basketball became more important to him, a place where he could thrive.

A long-armed six foot two with a fluid shooting motion, Nathan improved considerably over a year and half. After not making the U15 team in his first year at Orangewood, Nathan started individual training at Baller academy then made the u19 Orangewood team the next year. With growing skill and confidence, Nathan trailed and made a representative for the first time. Sensing his growing passion for basketball, Nathan’s mother signed him up for a tour to Australia and a camp in Wellington to learn about USA pathways. There, a camp counsellor told him that he had a nice shot for his age and could earn a scholarship to the U.S. if he keeps working hard. With growing basketball aspirations and his need for an academic change, Nathan left Orangewood for Greenwood College.

When Nathan started training with Greenwood, he hesitated on the court. One particularly noticeable instance emerged during a scrimmage early in term one. Nathan received the ball at the top of the key as Alfred moved from the baseline into the free space on the left wing. Gesturing to Nathan that he is open for a shot, Alfred sat low with his hips back then opened his palms to the ball. In that moment, Nathan hesitated (see Figure 21). He raised the ball over his head, then back to his left side. He looked left, then right, then left again. It was a hesitation that sparked a loud reaction from Jonah and others on the sideline, “MOVE IT! SWING IT!! MOVE IT!!!” Their comments urged Nathan to not stop the ball’s continuous movement. Nathan then passed the ball to Reimar on the right wing before cutting into the key and posting up. Unfortunately, he’d compounded his holding of the ball by then crowding the middle. After training, Nathan described how Greenwood compared to the other training that he has experienced:

> The motion we run is something I've never done it's not like you have a play where you're in a spot and you have a particular job for the spot you basically run anything on whoever on the court and that's where I'm just getting a little confused like [I don’t know] how to score. Like I don't wanna take the first shot because it may be on the first pass and if I miss might look bad. (Conv, N)

Figure 21. Nathan (yellow) pauses with the ball during a February 2016 scrimmage

5.3.3.2 "If you keep it and don't pass, he'll be happy"

Nathan's trained with Gene, an African-American former professional player who founded a basketball academy in the area. According to Nathan's mother, Gene "wanted to build Nathan" (Conv, P1) and saw Nathan as his 'prodigy' (Conv, P1). Two years ago, Nathan's mother and grandfather began driving him to Sunday afternoon sessions with Gene. As the youngest in attendance, Nathan would spend the day playing in 'open runs' against older and more experienced players. Typically, Gene organised everyone into teams that then played short five-on-five games to seven points. As the action unfolded, Gene became *de facto* coach for players on all teams. With each shot attempt, turnover or pass, Gene followed with comments of praise, frustration or instruction that echoed across the gymnasium.

Known as a scorer during his professional playing career, Gene intentionally cultivated a scoring mentality in the players. For Nathan, that message range clear. During scrimmages, he focused on scoring and rarely, if ever, looked to pass:

> Like I never pass, unless I'm tired. Whenever I get the ball, I just run it down fast, shoot the three or try and make a lay-up. Like, when I play there [at Gene's], you get nothing out of an assist. You just get points. You win and stay on. Like you don't get a "Nice pass, Vince". All you get is "Good shot, Vince". I don't go there to pass. I wanna see how many [points] I can get. (Conv, N).

For Nathan, decision-making was very simple with Gene. He noted, "Like, normally on the fast break, he gets mad if you pass it. So, even if you keep it and don't pass he'll be

happy. Even if you turn it over" (Conv, N). In the few months before changing schools, Gene had encouraged Nathan to play 'point', a position with responsibility for carrying the ball at the start of each possession. Since he started playing basketball, Nathan was often the tallest on his team. As a result, coaches played him as a centre under the basket. In that role, Nathan rarely carried the ball and was not allowed to shoot jump shots. With Gene's coaching, Nathan improved his shooting and ball handling skills. As a result, Gene wanted Nathan to move out from underneath the basket and to instead carry the ball along perimeter, outside of the three-point line. Reflecting on what it meant to play point guard, Nathan said, "I normally get the ball and run it down the court. When I run the point, [Gene] tells me to do a step back and shoot the three" (Conv, N).

5.3.3.3 "Stand in the corner and shoot threes"

After his selection in February to Under 17A Auckland representative team, Nathan received some negative feedback. According to Jonah, some representative players felt that Nathan that he did not deserve his selection over another South Auckland player who had made the Under 15A team the previous year. While Jonah felt that Nathan deserved to be on the team, he wondered what Nathan's expectations would be. Jonah commented "Where does he expect to play for [the representative team]? Does he expect to start or come off the bench?" (Conv, J1). When the Under 17A representative team started training, it became clear that Nathan's role would fall within the framework of the Breakers trans continuity offence that the team ran. Lance, Nathan's head coach, implemented the offence with most teams he coached. In fact, Lance had designed trials for the team around sub-sections of the offence. Through such a process, Lance observed how the players responded to the rules for play while also assessing how players might fit the roles common to the offence.

The Trans offence constrained Nathan's role with the representative team. Through a five-category position structure, the offence included a point guard ('one' or 'point'), shooting guard ('two' or 'two-man'), small forward ('three-man'), power forward ('four' or 'four-man') and centre ('five' or 'five-man'). Through these positions, the offence followed a common pattern that began on one side of the court then repeated on the other. That pattern unfolded in the following way: 1) the power forward initiated a dribble hand-off to the small forward sprinting out of the corner; 2) the centre and small forward executed a pick-and-roll; 3) The small forward passed the ball to the power forward and he executed the same pattern with the point guard in the opposite corner.

On this team, Nathan played the small forward position, or 'three-man'. There were players taller than him, including three who stood at least 1.96 meters. Consequently, Nathan could play along the perimeter. Given the structure of the offence, Nathan started each half-court possession standing in the corner then waiting for the handoff from the four-man. Nathan described the offence's pattern in the following way, "we get the four-man to inbound. One or Two get the ball. Three-man goes long to a corner and the five-man goes long just under the rim. Nothing fancy. We just pass to one or two and go from there" (Conv, N). Reflecting on his role in this offence, Nathan saw himself as a shooter 'off the bench'. When he entered the game, he stood in the corner, waited for the ball and shot it when he did have it. He commented, "being with Lance and just coming off the bench and just getting it and shooting it. I mean that was my role for that team" (Conv, N).

During a conversation with his grandfather, Nathan shared his view of shot selection on the representative team. When Nathan received the ball coming out of the corner, Lance encouraged him to shoot it if he was open. However, Nathan felt that shot would sometimes be too difficult to make if he received the ball far outside the three-point line while running at an angle away from the basket. Despite being open, Nathan sometimes hesitated to shoot it:

Nathan	The problem is whenever I get the ball at the top of the point on a handoff with [the five man], I get it too high. They hand it off to the three-point line. I'm basically shooting like NBA three-pointers.[14]
Vince	So, if you're open right there it's a far shot?
Nathan	Yeah. It's like NBA.
Grandfather	Yeah, but you can make that shot.
Nathan	I know but there's the three point shot when you're casually and then there's like running across and literally going like that [mimics a game speed three running horizontally].

Ultimately, Nathan felt that he had been reduced to a three-point shooter. He said, "That's all I was supposed to do. Run to a corner and just stay there and if you get the ball just shoot it! That was my role. And I didn't do it. I'm on the bench" (Conv, N).

Over the course of the representative season, Nathan's playing time declined. In the team's first few games, Nathan started in the first five or played extended minutes as a reserve. A few weeks later, he had become one of the last players to enter the game and played few minutes. There were even games where Nathan did not play at all. For

[14] In New Zealand, the three-point line aligns with the international standard of 22 feet 1.75 inches (6.75m). In contrast, the National Basketball Association (NBA) is 23 feet, nine inches (7.24m).

Nathan's family, it was difficult to watch. In the previous year, Nathan's mum and grandfather watched Nathan play 'with confidence' as the top scorer on school and representative teams where he played a majority of available minutes. Nathan's experience with the Under 17A representative team challenged her to see the bigger picture of how Nathan fitted on each team:

> There's a few frustrations at times. There's always gonna be a few kids better than you. You forget that sometimes. I look at Nathan when he's in that [representative] context and I'm like he's down at the bottom then I see him in the [Greenwood] team and he's up here. (Conv, P1)

5.3.3.4 Crossing boundaries between teams

Greenwood differed from Nathan's other playing systems. When playing with his representative team or academy training, Nathan felt that the first option was to score. Nathan observed, "I mean every team I play for, ACM, Gene all that, it's all the first option. Like whenever I get the ball on the first pass I just look to score" (Conv, N). In contrast, there was a broader emphasis at Greenwood to read the game, pass when covered and shoot when open. That emphasis challenged Nathan to expand his play beyond simply scoring. During the Premier grade qualifying tournament, Nathan led the team in assists, a sign of his increased readiness to pass to open teammates. When Troy and Joey could not play against New Zealand Select (NZA), Nathan adjusted his game by scoring more often. Importantly, Nathan's scoring unfolded organically in the context of the team's Flow motion offence. He took open, uncontested shots and passed out when no shot was available.

That said, Nathan's experience revealed how contradictory styles between teams can result in confusion for players. In any given week, Nathan moved between three different basketball systems. This crossing of boundaries opened cracks in Nathan's understanding, leading to mistakes and hesitations. Depending on where he played, Nathan's mum saw an entirely different player:

> It's just being able to believe. When he plays there [at Gene academy], he believes he can do it. When he plays [for his representative team], he doesn't believe. I see that as well. You can see his confidence when he plays Greenwood is completely different. He is two different players for two different teams. (Conv, P1).

When the seasons began to overlap, conflicts between academy, representative and school increased. One issue was role definition. In the case of Greenwood, Nathan played offensively along the perimeter as one of four guards who moved interchangeably along the three-point line. At Greenwood, the Flow offence did not require traditional positions

like shooting guard or power forward. Players were more interchangeable. However, the team did lack of height and called on taller players like Nathan to defend forwards and stay close to the basket to secure rebounds. Like Troy and Mark, Nathan played outside on offence, but inside on defence.

Jonah's approach towards positions was not immediately obvious to Nathan when he changed schools. Just one month after starting at Greenwood, Nathan expressed frustration at his perceived role. He commented, "[Jonah] is playing me at the four. You know I play the one and two with Gene?" (Conv, N). Nathan's concern came to light again during a conversation between Jonah and Nathan in late March, the day after the Easter tournament. After receiving little court time with his representative team, Nathan spoke to Jonah about the position he played for Greenwood and his role in the offence. Specifically, Nathan asked Jonah if he could both play guard and bring the ball up on offence. Jonah responded by clarifying how the team approached positions:

> I told him we do it a little different around here. two and three being the same things and that he would be playing two through five. He asked if he could bring the ball up off rebounds. I said 'if you're confident we won't lose the ball and its our best option at the time, then sure'. (Conv, J1)

Jonah's conversation with Nathan revealed a contradiction in role definition between Jonah, Gene and Nathan. Jonah did not assign Nathan to a single position like point guard or shooting guard. He also refused to assign the responsibility of bringing the ball up to one of these positions. In contrast, Nathan assumed that on-court responsibilities corresponded to specific position labels. Jonah questioned that assumption by setting a tactical rule that whomever rebounded the ball could advance the ball up court.

In order to resolve the confusion he experienced, Nathan negotiated the boundaries between teams and role definitions. One method involved comparing his role to American professional players. Later in term two, Nathan shared the confusion he experienced when moving between different teams and roles. Nathan's confusion stemmed from a different understanding of the four-man label and role. We negotiated the misunderstanding by discussing positions in terms of professional players. Specifically, we discussed the diversity of the 'four-man' position in the NBA:

> Nathan: Yeah I play the two and three for [my representative team]. One, two, three for Gene. Four, five for Greenwood.
> Vince: *Does that bother you?*
> Nathan: It doesn't. It's just difficult.

Vince: *What's the hardest part?*

Nathan: Not playing who I am. I mean, I can post up and set screens.

Vince: *And "who are you?"*

Nathan: Play defence on bigs. Like, I can do all that. Just offence down low is not my thing. I would rather play guard on offence then maybe cut and ask for a post up. Instead of running through big all the time. And once you notice me as a player when we start to play you'll see I can score. Last game: 9 points in one minute fifty. I mean, I never have really played the four-man. Like, maybe if I got used to it I may be fine.

Vince: *So when you hear four-spot, what does that position mean to you?*

Nathan: Big

Vince: *like what do you think a four does?*

Nathan: Set screens and post up. If you think of the Memphis Grizzlies [of the NBA]

Vince: *And is that what you think you'd be doing as a 'four' with [Greenwood]?*

Nathan: Zach [Randolph] at the four Marc [Gasol] at the five.

Vince: *Yeah Memphis' 'four' would make sense that way. Do all 'four-men' play that way?*

Nathan Set screens and post up. Mostly in New Zealand.

Vince: *Draymond Green [from the Golden State Warriors of the NBA] is a 'four' but he brings the ball up half the time and leads them in assists.*

Nathan I'm just struggling there at the spot. Maybe because I've only played it once.

Vince: *I hear what you're saying. And I get why you'd be worried. Based on what you've seen on TV and experienced so far, you hear 'four' and you think 'big man'.*

Nathan I don't know. I mean, Lebron is the two, three and four man and he's still a guard.

Vince: *And that could be confusing for you based on your other teams?*

Nathan Yeah. I'll be sweet. I just have to realise what I can do to play like me but play that specific spot also. Like Ben Simmons, for example. Plays the four and dribbles the ball. Magic Johnson. Point guard and centre. (Conv, N)

Concerned about his role with Greenwood, Nathan framed the 'four' in traditional terms. He understood the position as a tall player who screens, posted up and scored inside but rarely dribbled the ball along the perimeter or attempted outside jump shots. Nathan defended this frame by invoking examples from the NBA . In asserting that he was not "playing who I am," Nathan implied that the 'four', from a traditional perspective, was incompatible with his view of himself as a scoring guard who played outside along the

three-point line. The conversation shifted when professional athletes were identified who transcended the traditional framing. Consequently, Nathan began to consider alternatives. He acknowledged that he lacked experience then began to list other professional players who were tall but not confined to the interior and were able to play along the perimeter. In this acknowledgement, Nathan began to move away from either/or thinking and towards both/and thinking. He said “I just have to realise what I can do to play like me but play that specific spot also” (Conv, N)

5.4 Case Summary

Constructed around terms in the academic calendar, three interlinked case narratives began with the social, historical and pedagogical conditions for basketball at Greenwood College. This narrative act set the scene for the issues that unfolded over the 2016 season. Specifically, three periods received attention: 1) the introduction of modified games and film review during off-season training in term four of 2015, 2) preparation for the Premier grade qualifying tournament during term one of 2016,and 3) re-joining the local South Auckland senior grade in term two of 2016.

With the basketball activity system in view, each case narrative depicted a collective conflict in shot selection. During the pick-and-roll scenarios practiced in term four, ball carriers drove into a crowded middle and forced contested shots as teammates stood and watched along the perimeter. As the team progressively developed a four-out-one-in motion offence, the team debated the use of midrange jump shots following a friendly match against St. Anthony’s. When Greenwood re-joined the South Auckland competition one month later, confidence peaked as the players distributed shots equitably across the team. References to Flow reinforced an orientation to keep it simple, not force things and to take what was available.

Displayed chronologically, the cases link together the transformation of basketball activity over time. In combination with the introduction of a modified games approach, film review raised conscious awareness about intrinsic tendencies that contradicted emerging emphases. Slowly a more flexible and adaptive form of play began to emerge. During preparation for the Premier grade qualifying tournament, the team experimented with a new model of offence: the four-out-one-in motion. When losses revealed the struggle to let go of old habits, the team refined their model. ‘Flow’ became the discursive product that described the new half court motion offence.

Each case narrative concluded with the experience of a focal case study participant during the period of focus. As a ball carrier in pick-and-roll, Joey struggled with shot selection, including a tendency to “force something I thought will work” (Conv, J2). Conversations revealed a preference for scoring born from an attacking style and a desire to prove his ability to doubters. During term one of 2016, Troy dominated the ball, took heavily contested shots and doubted his teammates. As the returning team Most Valuable Player (MVP) and only player remaining from the 2014 Nationals team, Troy worried about being viewed as a player who ‘choked’. Troy also viewed team achievements as a way for him to personally reward his coach for the support he received. Finally, Nathan struggled to learn Flow as he crossed boundaries between school, club and academy systems. Moving between teams with contradictory systems of offence and principles for play, Nathan experienced confusion and lost confidence before finding new ways of framing the contradictions.

Chapter 6 Discussion

This study investigated shot selection in competitive basketball as an ongoing collective negotiation between coaches and players over a competitive season. Drawing upon ethnographic data, the case narratives present a contextualised, whole-systems view of shot selection that diverges from a recent wave of quantitative, data-driven performance analyses. Industry-driven analytics researchers have presented shot selection as a problem of shot location, defender distance and performance efficiency (Chang et al, 2014; Goldsberry, 2019; Lucey et al., 2014). In making the basketball activity system as the unit-of-analysis, this study suggests that shot selection is an embodied, cultural and historical phenomenon that emerges from a reciprocal relationship between coaching and playing decisions. From this perspective, shot selection is inseparable from an unfolding web of relationships within and between systems of human activity. In this Discussion, I draw out these relationships in order to better illustrate the significance of the study for how coaches understand and manage the complexity of athlete decision-making. This occurs in two parts. First, I use the case findings to make sense of shot selection as it unfolded in the context of the team. This includes both a broad discussion of shot selection in relation to the wider situation of the team and a narrow focus on six distinct perspectives on shot selection. Second, I extend the discussion to the significance of the case findings for coaching practice. Specifically, I elaborate on the pedagogical challenge that shot selection presents, including four perspectives on the coaching process that support a coaching-as-orchestration framework (Jones & Ronglan, 2017).

6.1 Linking shot selection to the wider situation of the team

The case findings reveal how conflicts in shot selection emerged as threads of the wider situation of the team. Most visibly, that situation turned on the head coach's transition in coaching philosophy from the 2015 to 2016. The case findings show how 2016 became a critical period in the developmental trajectory of the programme. With the support of the case study researcher, Jonah, the head coach, introduced a concept-focused training model that emphasised modified games and film review. Stimulated by the disappointment of the 2015 season, including an intention to earn promotion to the Premier grade, Jonah changed the structure of training activity. For the players, increased freedom in training produced instabilities in shot selection that, once negotiated, contributed to later formation of a four-out-one-in motion offence. In this respect, shot selection emerged from this evolution in philosophy. In contrast to current emphases in research, this finding reinforces a contextual view of shot selection. By locating shot selection in the team's transition to

motion offence, this study situates athlete learning and decision-making in its social and historical context (Ovens & Smith, 2006).

The coupling of coaching philosophy, offensive evolution and shot selection reinforces the iterative relationship between coach and athlete behaviours. As Jonah adapted his coaching approach, the players changed play, and vice versa. Noticing the players adapting their movements and shot decisions, Jonah doubled down on his new approach. At the start of the new academic year, Jonah continued to employ modified games and film review while simultaneously escalating the team's focus. Whereas term four focused on a single two-man scenario, the pick-and-roll, the following term addressed the team's entire 5-on-5 half-court offence. This expansion produced further contradictions within (and between) systems that manifested as conflicts and social dilemmas. Notably, this included Troy, Joey and Nathan's struggles to manage a battle between their preference to score and the imperative of the motion offence to find a good shot for the team. Responses to these conflicts included further modifications and clarifications, such as reframing roles, clarifying principles, encouraging experimentation and constructing new cues to guide play. This finding reinforces a view that effective coaching involves flexible adaptation to the unforeseen, including reframing tasks and sharing responsibility with athletes (Saury & Durand, 1998).

Importantly, Jonah's change in philosophy altered his relationship with the players' decision-making. Jonah moved away from a strict, aggressive pedagogy founded on drilling, instruction and rigid practice planning to a discovery model that emphasised decision-making without instruction, proscriptive rule making and flexible practice planning. In addition, the formation of a motion offence signalled a shift away from the previous reliance on scripted set plays and towards making creative play with minimal direction from the coach. This finding suggests that shot selection in competitive basketball occurs as a function of a changing coach-athlete relationship. In a critique of data-driven performance analysis, Hutchins (2016) challenged the tendency to evaluate and/or categorise performance decisions without an appreciation for the ways in which situational circumstances constrain them. Specifically, Hutchins noted the importance in linking performance decisions to "the quality of a coach and the (in) consistency of their instructions" (p. 505). Similarly, motivational researchers in the tradition of self-determination theory highlighted the ways in which coaches can nurture and/or thwart player engagement through levels of control in task designs (Mageau & Vallerand, 2003).

In this case, the transition from set plays to motion offence disturbed the stability of the system by introducing more variability into the performance environment (Araújo, et al., 2009). In that respect, this finding reinforces the view that changes in constraints can produce instabilities in learners (Renshaw, et al., 2009). Nonlinear pedagogy theorists understand performance as an emergent consequence of the interaction of individual and team constraints. Furthermore, this finding reinforces a nonlinear view of athlete development (Simonton, 2001). As the coach and players responded to the changing constraints, it became clear that each player's response followed a different trajectory that depended on prior experience, role on the team and relationship to the coach. For some, the transition to a motion offence unsettled their conceptual understanding of offensive basketball. For others, conversations revealed a conscious struggle to re-frame beliefs with respect to position, role and rules for play.

6.2 Seeing shot selection from multiple perspectives

This section extends discussion by exploring the findings in terms of perspectives. This study embraces the diversity of perspectives inherent to complex phenomena and reinforces the need to hold multiple perspectives simultaneously when attempting to make sense of the world (Meadows, 2008). Specifically, six perspectives on the participants' experience warrant attention: 1) changes to the offensive system of play, 2) an evolving training environment, 3) contradictory goals between participants, 4) the players' embodied history and 5) crossing boundaries between teams. Elaboration of these five perspectives supports Jones and Wallace's (2005) call to understand the complexity of the phenomenon before addressing coaching methods. In that respect, this section foregrounds discussion of how coaches can think about managing the complexity of shot selection in practice.

6.2.1 Shot selection and changes to the offensive system of play

Firstly, this study suggests that conflicts in shot selection can be viewed in terms of the team's system of play. Broadly speaking, system of play refers to the form of organisation for offence and/or defence that structures tactics in relation to team strategy. As a formalised way to organise movement, Teodorescu (1956; cited in Grehaigne et al., 2005) described system of play in the following way:

> The general form in which players' offensive and defensive actions are organised by establishing a precise arrangement of certain tasks in relation to position and field coverage and certain principles of cooperation among them. The system of play is the basic structure of team tactics. (p. 8)

Following a historical emphasis on scripted set plays, the four-out-one-in motion offence became the Greenwood team's offensive system of play. Set plays followed a scripted sequence that players memorised in advance then prescriptively followed in game play. Grehaigne et al. (2005) noted the limitations of static set plays when configurations of players on the court shifted unpredictably to produce a new situation that did not fit the preconceived plan. Not coincidentally, conversations with Greenwood players revealed how many struggled with set plays when the script broke down unexpectedly. Unsure what to do next, some simply drove to the basket and shot quickly. In other instances, some deferred to Troy. Jonah acknowledged two limitations of this offensive design. First, Jonah wanted to see players become independent decision-makers who knew how to make decisions without a script. Second, Jonah wanted to see the team become less reliant on Troy.

In contrast, the motion offence constrained shot decisions by establishing a shared object (find a good shot), movement boundaries (four guards outside the three-point line while the inside forward stays opposite the ball), tactical rules (backcut when denied), principles for play (keep the middle open, good shot/bad shot), position designations (forward, guard) and a distribution of scoring responsibility (anyone could shoot). In this respect, motion offence unfolded in an emergent pattern according to a small set of design constraints. Without a set pattern, much more creativity became possible. The players were afforded considerably more freedom to read the defence and act in ways that took advantage of the situation. Over time, their offence became more diverse, unpredictable and inclusive. The imperative to take a good shot became a catalyst for continuous movement of players and the ball. Consequently, the team experienced an increase in the number of players who touched the ball on a possession and attempted a shot in the game.

Importantly, understanding individual and collective shot selection in relation to the team's system of play sheds light on the relative predictability and control of movement decisions. Systems of play differ with respect to their underlying logic. For instance, the emphasis on movement boundaries reinforces the idea that motion offences employ a nonlinear logic to their design (Davis & Sumara, 2010b). Whereas set plays prescribe movements by pre-determining decisions in a linear script, motion offences proscribe movement by setting the physical boundaries for open-ended play. In a discussion of the conditions for complex emergence in sport, Davis and Sumara (2010b) described the differential effects that prescriptive and proscriptive rules can have on creative possibility:

> A system defined by only prescriptive rules (what must happen) will be rigid and predictable. In contrast, proscriptive rules (what must not happen) can open spaces to diverse and flexible possibility. Put differently, in a proscriptive situation, what is not forbidden is allowed. (p. 112)

In this sense, the offensive system (including its underlying logic) actively facilitates where, why and when a player takes a shot in a game. Prescriptive systems reinforce rule-following behaviour while proscriptive systems may promote creativity and less rigidity regarding when and where shot attempts occur.

Of course, the system of play cannot be separated from how the coaches and players have made meaning of it. In this respect, participant understanding and endorsement of the offensive system constrained shot selection. Specifically, shot decisions may differ with respect to how coaches and players are negotiating the system's design and execution. For instance, Nathan hesitated in part because he had never played in a motion offence. Consequently, Nathan did not understand the responsibilities of a forward and the concept of a good shot when playing with the Greenwood system. As he improved his understanding of the rules and player responsibilities that were included in the motion offence, Nathan progressively changed his shot decisions by taking fewer early possession three-pointers. In terms of player endorsement, Troy's experience suggests that players may not consent to the system at all and may instead pursue a system of play of their own design. In this respect, the extent to which a system of play constrains decisions will likely depend on how players exercise their agency.

Similarly, the motion offence challenged prior understanding of the distribution of scoring responsibility in the team. Importantly, motion offence re-distributed scoring responsibility in ways that challenged Joey and Troy's tacit understanding. Joey and Troy believed in a centralised, hierarchical distribution and spoke in ways that revealed such a view. First, Joey expressed frustration at playing "second fiddle" (Conv, J2) to Troy. Later, Troy referred to himself as the "main threat on the team basketball wise" (Conv, T1). Implicit in their model was an understanding that the team would defer to the "main threat" as the first to carry the ball across the midline and take a shot. Consequently, each player's frequency of possession with the ball would indicate the degree of responsibility for scoring and, implicitly, their place in the hierarchy of the team. On this point, Troy acknowledged his competition with Joey for a dominant position within the team, "I don't know if I'm wrong or not, but its a sense of competition between him and myself to see who is the best player on this team" (Conv, T1).

Relatedly, shot selection warrants attention as a function of the changing positions and roles in relation to the system. For instance, transitioning to a new role in the team contributed to Troy's do-it-all approach. In previous years, older and more mature teammates allowed Troy to focus on scoring without the responsibility of leadership. Now in his fifth year on the team, those players were gone. Troy faced a new role that asked him to not only score, but also mentor a roster of young developing players. From the beginning, Troy struggled to engage with a group he felt lacked maturity, intensity and experience. Troy acknowledged that difference when comparing them to the 2014 team:

> I look at this year's team and it took [Jonah] weeks just to drill something into them. I think just the way that we celebrate at training this year…someone makes a lay-up and everyone is jumping around. The [2014] team would be like, 'good job' but I don't care. Move on. Not being disrespectful, but I see it as being childish. We haven't won anything and you're celebrating too early kind of thing. (Conv, T1)

In surveying this landscape, Troy felt he could lead by dominating all facets of the game on the court, "I kinda just thought that my actions would just…instead of telling them off, I felt that actions, the way I played during scrimmages and drills could impact and they would see" (Conv, T1). In pursuing his goals, Troy took contested shots, forced the ball into tight spaces and showed little patience for his teammates. This finding suggests that shot selection is made complex by the changing relationships that players have to the system itself. Changes in responsibility, role, court location and possession of the ball can themselves become constraints that contribute to a change in disposition and engagement.

6.2.2 Shot selection and an evolving training environment

Secondly, this study suggests that patterns in shot selection can be viewed in terms of learning design. In particular, the case findings reinforce the idea that representative learning design contributes to player readiness for match play (Pinder, et al., 2011; Renshaw, et al., 2009). As Jonah alluded to during offseason training, the transition to a game-centred approach (Harvey & Jarrett, 2014) increased the representativeness of the training environment. He observed, "I'm enjoying the simplicity of this. I used to be drill, drill, drill but these games allow everyone similar reps that actually put you in the spot of a game situation" (Conv, J1). The major consequence of representativeness in training was an increase in automaticity. As Jonah recalled, "guys automatically wheel, get to the corner, space…its cool that they're looking not just at themselves but the other guys" (Conv, J1).

This finding suggests that shot selection warrants attention as a manifestation of the interrelationship between training and competition. Primarily, this includes attention to the alignment between task design and transfer to match play. Through task simplification, coaches can design tasks that represent the performance environment and thus provide opportunities for attunement (Renshaw, et al. 2009). However, there is a question of directionality when coaches engage in task design. Popular evidence suggests that professional coaches design the training environment around the team's offensive system, including through court design and scoring system modifications (Andrews, 2018; Cacciola, 2017). In the current study, training rules preceded the offensive system in that the tactical rules that formed the basis of motion offence first originated as task constraints for small-sided games during the off-season.

Secondarily, the training-to-competition relationship includes the coach's approach to game management. Basketball is a sport where the coach has proximity to the court and can easily shape decisions through gestures, commands, cues and timeouts. When achievement outcomes guide coach and organisational goals, coaches may resort to controlling behaviours that restrict player freedoms in play (Frey & Eitzen, 1991). In this respect, the coach's sideline behaviour (Walters, et al. 2012) warrants attention as a pedagogical tactic that can both undermine and support a commitment to autonomous movement behaviour.

Furthermore, this study highlights the complementary role that film review can play when addressing a complex phenomenon like shot selection. In line with Mouchet's (2005) psychophenomenological approach to player decision-making, film review contributed to an increase in awareness of implicit movement behaviours that contradicted offensive strategy. This included the tendency of ball carriers to drive into a 'crowded middle' and non-carriers to crowd the 'paint' or stand from the 'perimeter' and watch. In particular, the pedagogical impact of film review suggests further attention to the nature of feedback cycles on player learning and decision-making, including the iterative relationship between film review, training sessions and match play. In this study, the frequency of film changed over time as a function of coach and venue availability. At its inception point, film followed on-court training such that playing experiences provided the first basis for critical reflection and dialogue. As the cycle unfolded, film sessions occurred once every three or four on-court sessions. During this time, an iterative cycle occurred where training and match play informed film review and vice versa.

Importantly, the facilitation method used during film also warrants attention. As part of formative intervention methodology, I co-facilitated film review as a researcher-pedagogue with experience in constructivist modes of classroom-style teaching. From this perspective, we positioned the coach as a facilitator of dialogue whose primary scaffolding tools included open-ended questions and small-group work. Film review sessions typically started with a priming exercise in which the group discussed an initial question in pairs before watching the first clip. In watching video clips, the group watched without interruption, reflected in pairs and then fed back to the facilitator. In this respect, the facilitation style itself can contribute to the effectiveness of the film review session and warrants attention as an influence on player learning.

6.2.3 Shot selection and contradictory goals between participants

This study suggests that patterns in shot selection emerge in part from the goal conditions of players, coaches and the organisation/club. Specifically, the goals of the coach and organisation/club warrant attention as an influence on programme design and coaching philosophy. This study found that the Sport Director and head coach shared an object to grow the basketball programme and make basketball the top sport in the school. The primary outcome became promotion to the Premier grade in Auckland and qualification for the National Secondary School Basketball Championships in New Zealand. In this case, this goal effectively oriented the coach towards programme design decisions that would facilitate skill development leading to improvements in competitive performance. For instance, the 2015 team did not qualify for The National Championships and lost a relegation match that would have earned them promotion to the Premier grade in Auckland. Reflecting on this disappointment, the head coach felt that he needed to become more positive and the players needed to improve their understanding of the game. This realisation triggered a change in coaching philosophy and the subsequent introduction of modified games and film review in the off-season.

With respect to the players, goal conditions had a more direct influence on shot selection. For Troy, the object of participation was to earn promotion to the Premier grade so that he could show gratitude to Jonah’s family, avoid embarrassment from his former teammates and maintain his status as the top athlete in the school. In this pursuit, Troy engaged in controlling behaviours and shot decisions that contradicted the motion offence in formation. Clearly, Troy felt pressure to achieve. Amplified by their success in 2014 and recent media coverage, it was clear that this achievement mattered. In that process, Troy became the face of the programme’s rise. Troy appeared in a nationally televised segment

and was awarded basketball team MVP in the two previous years. Consequently, Troy felt responsible for single-handedly delivering programme success “I kinda got caught up in the individual accolades…I kinda wanted to do everything by myself, in a way” (Conv, T1).

Moreover, the conditions for play in term one contributed to an increase in intensity and urgency for Troy. When the academic year started and competition neared, the team shifted its focus towards preparation for the qualifying tournament. Very early in the term, team trials led to official selections and a reduction in the size of the team. This contributed to a more competitive training environment. After appearing disengaged and withdrawn during the off-season, Troy became especially vocal and active on court, including domineering behaviour that he described as ‘hero ball’ and “trying to do everything myself” (Conv, T1). Troy preferred an attacking style that relied upon aggressive drives into the gaps of defence. The nearness of competition intensified that aggressiveness. Now in his final year and facing his last chance at promotion, Troy felt a sense of urgency, “I guess its just being in this team for so long I just wanna get to the top level already. I’ve been in South Auckland Grade for like four years now and I wanna get out” (Conv, T1). While Troy shared the coach and Sport Director’s aspiration to earn promotion to the Premier grade, he internally re-constructed that goal to make himself personally responsible for that outcome. Consequently, the contradiction in goals between player, coach, teammates and Sport Director manifested as conflicts in decision-making.

Troy’s experience reinforces the ambiguity that coaches can face when negotiating a landscape with diverse goals unfolding simultaneously. While effective coaching involves adjusting to the needs of players (Coté & Gilbert, 2009), Jones and Wallace (2005) noted that players’ personal feelings are not necessarily amenable to control by coaches. In the continuous interrelationships between elements in the activity system, coaches make decisions with incomplete information. On this basis, Jones and Wallace (2005) noted, “coaches can never gain absolute predictive control over their charges’ learning and actions, let alone read their minds or feel their emotions” (p. 120).

More broadly, this study reinforces the idea that coaches and organisational leaders negotiate overlapping goals with players that can lead to contradiction (Jones & Wallace, 2005). A persistent tension exists between performance goals and human development goals in competitive sport (Black, 2010; Coakley, 2010; Kidd, 2008; Hartmann & Kwauk, 2011). Not exclusive to high performance or elite amateur settings, concern mounts that schools and youth sport organisations have distorted goals that lead to poor behaviour

(Sport New Zealand, 2015). Frey and Eitzen (1991) warned that an overemphasis on achievement via measurable performance outcomes invariably produces investment in the engineering of competitive advantage. This process can result in a struggle for control of the athlete in training and competition.

6.2.4 Shot selection and the players' embodied history

This study raises attention to the ways a player's embodied decisions, or intrinsic logic (Mouchet, 2005), can constrain shot selection. Considering a players' personal history, Mouchet argued that decisions in play were "relative to player experiences" (p. 26) and expressed implicitly through direct consciousness. While acknowledging that team culture, strategic plans and game situations influenced tactical decisions, Mouchet emphasised that the player intrinsically reconstructed "decision-making activity" (p. 26) in accordance with this prior history. Consequently, Mouchet regarded personal logic as an illustration of how subjectivity manifested in play, but in an embodied form and without conscious control:

> This logic expresses itself according to subjects, by a more or less strong mobilization of certain aspects of decision-making background: faiths on partners and opponents, common marks, previous experiences in this situations category, player customs and preferences. (p. 26)

In these respects, the findings of this study reinforce the idea that skilled movement behaviours may enact tacit learning from prior movement experiences. Film review raised awareness to implicit preferences when responding to emergent situations. Ongoing conversations with the players revealed connections between these preferences and previous playing experiences. For instance, Alfred drew connections between his tendency to stand-and-watch and the "freestyle" form of play at the recreation centre where "nobody cares" (Conv, A). Notably, a recurrent area of conflict in this study was the tendency of some players to force shots and/or shoot quickly on receipt. In some fashion, Reimar, Joey, Nathan, Troy and Tommy struggled with shot selection considering their implicit preference to drive to the basket when in possession of the ball. This frequently created conflict when it led to contested shots without passing to teammates.

Ultimately, this finding reinforces a view that decisions in play can occur independently of conscious awareness (Araújo, et al., 2006; Mouchet, 2005; Renshaw, et al., 2009). Ecological dynamics regard decision-making as a process that does not require conscious reflection (Araújo, et al. 2006; Phillips, et al. 2010). The effect behind this theorising has been to challenge views that cognitive representation necessarily preceded action

(Renshaw, et al., 2009; Smith, 2013). From a phenomenological perspective, Mouchet (2005) similarly described a direct consciousness that predominated in moments of immediate temporal pressure, such as the moment of contact between attack and defence.

Furthermore, this finding reinforces the influence of embodied history on athlete learning. Activity theorists critique the tendency in development research to emphasise the new and the positive, that is, an overemphasis on learning and development as the acquisition or mastery of new tools (Cole & Gajdamashko, 2011). In contrast, development can also be regarded as a process of breaking away from previous ways of being and doing. For Troy, Nathan and Joey, investigation of previous playing experiences revealed extended time in the role of a primary ball carrier. Each identified this as part of their basketball identity. Nathan similarly referred to himself as the "one and two with Gene" (Conv, N), implying identification with the ball carrier role. Troy referred to himself as "the main threat on the team basketball wise" (Conv, T1). Troy's instincts became problematic in an environment that increasingly valued patience in the collective search for a good shot. Troy acknowledged this conflict after their match against Auckland Central, "If I see an opening, I'm just going. I guess I'm still learning how to hold back. I'm still rushing with my choices and stuff. That could affect it as well" (Conv, T1).

On this point, the case findings show how Troy's style of play in basketball paralleled an aggressive physical approach more common in rugby. Drawing on his experience as a winger in rugby, Troy identified connections between his instinct to explode through the line and his preference to be aggressive and powerful in basketball. Troy referenced the need for 'Mongrel' while playing basketball and valued a 'killer mentality.' Predominantly, this approach manifested as an instinctive response to attack even the smallest of gaps:

> When you play rugby as well, smallest gap…you just take it. The same thing relates…I remember there's a few times for [my club team] where we come against a 2-3 zone and I catch the ball between the two at the top and just split it. It's the same mentality of being aggressive. (Conv, T1)

Troy's identification with an aggressive style of play also suggests the integration of movement behaviour with embodied experience and cultural identity. In this respect, perceptions of physical domination and sport align with historical constructions of cultural identity among Maori and Pasifika. Horton (2012) suggests that the demands of sport, particularly rugby, have historically aligned with the cultural role of Pasifika men, "being good at rugby (powerful, skilled, fast, courageous and tough) was easily translatable" (p.

2390). Reflecting specifically on how Maori and Pasifika have been socially positioned, Hokowithu (2004) identified a genealogical construction of inherent physicality. In this view, dominant representations communicate an intrinsic violence within Maori and Pasifika males that is “naturalised and sanctioned within acceptable, colonised roles” (p. 264).

6.2.5 Shot selection and crossing boundaries between teams

The interrelationships between style of play, identity and embodied experience strongly reinforce the ways in which movement behaviour occurs at the intersection of boundaries between systems. Activity systems are not bubble-like entities that can be neatly separated from neighbouring systems (Blackler, 2009). Rather, systems have permeable boundaries that overlap, resulting in shared objects, subjects and tools. Boundary crossing occurs when subjects must step outside of a traditional role or transition between ideas. Positively, boundary crossing can trigger creative dynamics when it leads to the creation of new tools and/or objects that can bridge systems of activity (Star, 2010). In some cases, it can result in the entire redesign of multi-activity systems. Engeström (2010) described boundary crossing as “stepping into unfamiliar domains. It is essentially a creative endeavour which requires new conceptual resources” (p. 12). On this basis, activity theorists understand learning as a process that includes not only vertical mastery within a single domain but also sideways, or horizontal coherence, between domains (Cole & Gajdamashko, 2011).

Building on Troy and Joey’s experiences, this case highlights the ways in which decision-making emerged from an ongoing negotiation of the boundaries between organised sport, neighbourhood communities and cultural identity. Troy viewed team success as a way of rewarding those who were part of his journey. Troy grew up as first-generation Pasifika in a household with few resources. As Troy excelled in sport, Jonah and his family provided a range of material and emotional resources to keep him afloat, including transportation, meals and attendance at his rugby matches. Consequently, Troy viewed promotion to the Premier grade as a way for him to show gratitude to Jonah and his family for the support he received over many years. Troy expressed his feeling in the following way, “[Jonah] and his mum have been with me since year 9. This last year I wanted to do something for them. I wanted to award them with a Nationals trip, Prems” (Conv, T1). As both coach and personal mentor, Jonah felt surprise, frustration and uncertainty at Troy’s approach. Jonah wanted to “tell him off” (Conv, J1) but hesitated out of respect for the family. In this way, he struggled to navigate his dual role, “Its hard. I have to play older brother and coach at the

same time. Its older brother with restrictions" (Conv, J1).

For Joey, cultural influences manifested as perceived pressure to prove his basketball ability to the Filipino community. Joey grew up playing street ball in Manila, in a passionate and hyper-competitive environment. When opponents in New Zealand marked him closely and pressed him into mistakes, Joey reacted by "forcing something that I thought will work" (Conv, J2). At Greenwood, Joey's reactions often turned into rushed shots, aggressive drives and taunts to his defender. In conversation, Joey verbalised connections between his on-court play, self worth and a sense of acceptance within his community. Joey identified far more strongly with Filipino basketball than school basketball. He trained year-round with a Filipino club, attended Filipino club tournaments and aspired to play professionally in the Philippines after high school. Ultimately, Joey felt his belonging to both the team and the Filipino basketball community depended on his ability to dominate opponents on court.

Troy and Joey's experience highlight the complex relationship between boyhood, masculinity, cultural acceptance and sport performance. Horton (2012) points out how Pasifika youth come to associate success with elite performance. Similarly, Messner (1990) identified connections between how boys play, how others perceive them and what that means for their sense of status and belonging. Messner highlighted a feeling of conditional self worth, "throughout boyhood and into adolescence, this conscious striving for successful achievement became the primary means through which they sought connection with other people" (p. 433). Central to Messner's thesis is the understanding that elite performance and cultural acceptance required physical domination of others. Light and Kirk's (2000) study of high school rugby revealed how an emphasis on physical domination can reinforce a traditionally masculine culture and identity. Despite the recognition that skill was necessary to win, the pressure to perform invariably resulted in coaches emphasising in training the "moral qualities associated with ideals of courage, sacrifice, commitment to team and the production and exercise of physical force" (p. 169). Displays of physical force, including violence, took shape most among forwards and in scrums. Light and Kirk described the phenomenon in the following way, "the forward's training in particular was very much driven by a view of the body as an instrument for physical domination and invasion of space" (p. 171)

Furthermore, this case study revealed how conflicts in shot selection emerged when players negotiated boundaries between multiple teams. In moving between his school,

club and training academy, Nathan struggled to reconcile contradictory messages between them over his offensive role and rules for play. This included when and where Nathan should shoot the ball. Whereas the Greenwood motion offence pushed Nathan to coordinate with teammates in the search for an open shot, other coaches praised the opposite. Nathan expressed his confusion when he said, “I mean every team I play for, [Auckland], [Gene] all that, it's all the first option. Like whenever I get the ball on the first pass I just look to score” (Conv, N).

As he crossed the boundaries between these activity systems, Nathan struggled to navigate the contradictory philosophies between them. When he trained and played with Gene, his academy coach, Nathan was expected to shoot immediately and received praise for scoring rather than passing and off-ball movement. With his representative team, Nathan played in a system with position designations that led to quite firm boundaries around one’s area of responsibility while on the court. These messages contradicted the open, fluid and positionless motion offence at Greenwood that expected players to share the scoring responsibility. Considering the contradiction between systems, Nathan experienced confusion in how to play with Greenwood. Nathan struggled to reconcile his shot selection with a desire to be accepted by new teammates and the messages he received from other coaches. Enacted as hesitations when in possession of the ball, Nathan was initially unsure when he should shoot and expressed fear that he would look bad with his new teammates at Greenwood if he took a quick shot without passing.

For Joey, his experiences as a scorer on his club and junior grade school teams intensified his identification with the scoring role. On previous teams, Joey played as a primary scorer and coaches encouraged him to shoot first. Joey instrumentalised that understanding with a set of familiar tools; aggressive drives, lowering the shoulder and taking shots early in a possession. While this approach matched the rules and distribution of labour of his regional club team, it did not suit the decentralised nature of a motion offence. As a result, Joey struggled to reconcile the new with the old:

> I think one of the challenges was playing style. On this team we might be pass first, on this team it might be just shoot…on [my rep team] I play wing. I don’t really play point guard. On [the Greenwood senior team], I have to play point. My awareness will be hard for me. For me, I’ve always been a scorer. (Conv, J2)

While Nathan’s situation shines a light on the influence of non-school coaches and personal trainers, parents can also be influential (Elliot & Drummond, 2015; Harwood &

Knight, 2009; Holt, Tamminen, Black, et al., 2008; Keegan, Spray, Harwood & Lavallee, 2010) with praise, feedback, instruction and comments (Holt et al., 2008). In some cases, parents can undermine decision-making by providing conflicting feedback or overloading their child with advice (Keegan et al., 2010).

Finally, popular culture, as mediated by digital media technologies, warrants attention as a neighbouring system of activity. In their browsing of Instagram and YouTube, many on the team enjoyed watching highlights of players from around the world. Campbell described watching 'iso ball,' through sequences of the ball carrier repeatedly making difficult shots and 'fancy passes' while surrounded by defenders. When asked to reflect on how off-season training impacted his game understanding, Campbell acknowledged the contradictions between his team training and the individualistic style of play he saw on YouTube highlight videos. In identifying this contradiction, Campbell acknowledged how his beliefs were now changing:

> There's all the mixtape and 'Shift Team' videos and stuff like that, like 'BallisLife' videos. Before I'd just watch everything and say 'ahh, so good' but now I look at it and I actually just see 'they're just hogging the ball and not playing as a team and its not helping at all. (Conv, C)

At the same time, some players invoked popular culture when engaging in basketball talk. Nathan engaged popular culture as he negotiated conflicts in shot selection and style of play. As he reconciled the contradictions between school, representative and academy basketball, Nathan re-framed his understanding of a forward by invoking different professional athletes in the National Basketball Association (NBA). Whereas Nathan originally viewed the forward as an interior player who plays near to the basket yet lacks dribbling skills, he instead pondered a view of the forward as a tall player who can operate both close to the basket and outside the three point line with the skills of guards.

In this sense, decision-making in the New Zealand community did not occur in isolation from global basketball influences. Competitive basketball has a rich history of countercultural movements that merge on court play, lifestyle behaviours and popular culture (Campbell, 2015). To date, most of this work has focused on the African-American experience in the United States. Stimulated by the commodification of an urban ghetto aesthetic, marketing companies channelled Black American culture into forms of resistance (Oates, 2017). In the 1980s and 1990s, Michael Jordan occupied a unique role as a marketing icon whose mastery of the sport and cool aesthetic inspired millions to 'Be like Mike' (Dyson, 1993).

6.3 The pedagogical challenge of shot selection

Considering the multiple perspectives for understanding shot selection, this section discusses the implications for coaching pedagogy. This includes a reflection on the findings in relation to how coaches can approach the complexity of athlete decision-making. Specifically, this research depicts shot selection as a multifaceted pedagogical problem that lends itself to a coaching-as-orchestration framework (Jones & Ronglan, 2017; Jones & Wallace 2005; Santos et al., 2013) and the principles of nonlinear pedagogy (Renshaw, et al. 2009). Borrowing from research on organisational change, orchestration metaphorically captures the idea that coaches can unobtrusively steer, or manage, teams through the relative uncertainty and unpredictability of team sport (Jones & Ronglan, 2017; Jones & Wallace, 2005). Specifically, Jones, Bailey and Thompson (2013) regarded orchestration as a process of string pulling behind the scenes to keep things going as teams pursue their objectives:

> Orchestration implies steering, as opposed to controlling, a dynamic interactive process involving much 'behind the scenes string pulling' towards desired objectives; of constant analysis, evaluation and scrutiny to keep things going; and of maintaining detailed oversight of the minutiae of each coaching situation. (p. 272)

The complexity of shot selection in this study lends itself to a view of coaching as steering, as opposed to controlling. Orchestration suggests that coaches negotiate this uncertainty by dancing between moments of active intervention and reflexive observation.
In support of this position, I draw upon the case findings to discuss six implications for coaching practice: 1) Game scenarios in training; 2) Making implicit decisions explicit; 3) Negotiating shot selection through complex concepts; 4) Embracing conflicts as a stimulus for growth; 5) Noticing to inform action and 6) Embracing complex sensibilities.

6.3.1 Game scenarios in training

This study provides qualitative support for the idea that orchestration (Jones & Ronglan, 2017) complements the principles of nonlinear pedagogy (Pinder, et al. 2011; Renshaw, et al. 2009; Renshaw et al. 2015). Specifically, this study showed how conflicts in shot select emerged during a transition in coaching philosophy from rote drills to small-sided modified games. While not explicitly TGfU (Griffin & Butler, 2010) or Game sense (Pill, 2014), Jonah's shift to modified games meant incorporating task simplification and rule modification to create game scenarios that were representative of competitive match play.

Importantly, many players responded enthusiastically given the opportunity to discover solutions rather than follow prescribed instruction. Reimar expressed that sensibility near the end of off-season training when he stated:

> What we used to do was straight plays and there was only one way of doing things and you'd have to learn that specific way. Umm…with those drills, it opens your mind to just making reads and you don't have to run set plays. It's more reacting to what the defence gives you and what type of reads to make if you actually see something. (Conv, R)

Jones and Ronglan (2017) described how the use of game scenarios suited a coaching-as-orchestration framework. Specifically, Jones and Ronglan (2017) viewed game scenarios as supportive of the "transference between 'situations like this' to occur, whilst the relational nature of sporting performance within team games is respected" (p. 913). In this sense, game scenarios supported an enabling structure that embraced opportunities for discovery while still allowing for the coach to both restrict and enable opportunities for action. Applied to training design (Pinder, et al. 2011; Renshaw, et al. 2009), coaches can facilitate an implicit form of skill acquisition by designing tasks in training that are representative of the performance environment and allow players to discover movement solutions without instruction. It has been argued that representative design facilitates learning through attunement to specifying information (Pinder, et al., 2011).

6.3.2 Making implicit decisions explicit

The cases also revealed the creative tension in navigating the implicit dimension of shot selection. A key challenge in negotiating shot selection was to facilitate improvement for players who lacked conscious awareness to problematic yet persistent tendencies. In this case, film review became a tool for instigating conscious awareness to, and critical reflection upon, implicit tendencies that contradicted team strategy. An illustrative example came in conversation with Alfred during off-season training:

> [With video] you get to see your habits…like when you're not thinking what you're doing. Like go to the corner. On defence, I give up if I get beat. On defence just stop and I stare and ball-watch. Like with rebounding as well, just ball-watch. And then on offence, all the stuff that we've been working on. When you're thinking about it you do it but when you're not thinking about it, it sort of leaves your mind. (Conv, A)

Alfred's comment alludes to the productive impact of film review in negotiating subconscious movement tendencies. Beginning in the off-season, the team engaged video as a tool for identifying, analysing and discussing movement decisions in training. In raising awareness to previously unexamined decisions, video from 5-on-5 scrimmages became the mirror material (Engeström, 2009a) necessary to stimulate group and

individual reflection. This process contributed to the members of the team identifying movement decisions that contributed to patterns in shot selection. In particular, the team developed an appreciation for the ways in which movements without the ball shaped the passing and shooting opportunities for players with the ball. For instance, Tommy observed his tendency to stand in the corner and watch the ball carrier drive rather than relocate to an open position to be available for a pass. Ultimately, film review contributed to changes in decision-making within play itself, including players augmenting decisions based upon video feedback. For instance, Troy revealed how he incorporated the video and discussion of midrange jump shots into the next game against Auckland Central:

> Against [St. Anthony], as soon as I made my move, straight away I was going to take the shot. Tonight, when I made my move, 'should I pass?' So it's just the second thought and now getting better at what I do next. (Conv, T1)

This study reinforces the view that athletes flexibly differentiate between direct and thoughtful consciousness. Mouchet (2005) theorised that in moments of less temporal pressure (when without the ball or removed from defensive pressure), players develop a reflexive, deliberate stance. Troy's reference to a "second thought" suggests that he shifted to a reflective consciousness when advancing the ball across the midline and into the scoring zone. Mouchet's (2005) use of psychophenomenology offers a valuable methodological example of how reflection through video can draw out the relationship between reflective and embodied decisions.

Ultimately, negotiating shot selection necessitates ongoing basketball talk. Through mediated basketball talk, coaches can raise awareness to the embodied histories given that each player arrives with preferences, habits and tendencies. While it is appropriate to focus on how this understanding is expressed corporeally, it is also worth exploring how prior experience shapes verbal expression of game understanding. For instance, Campbell commented during off-season training that he did not know where to be on the court, "before when I first…this year…I didn't know where I should be. Just followed my player on defence and stayed in one spot on offence the whole time waiting for the ball" (Conv, C). Campbell's comment illustrates how players, through speech, consciously make sense of their movement on the court. This includes beliefs about where to move and assumptions about how the game is supposed to be played. Given the extensive use of conversation in coaching, this study suggests that verbal fluency in basketball talk can aid pursuit of performance goals, movement solutions and athlete learning. Most visibly, this includes interpreting basketball comments made by the coach and, when necessary, asking follow-up questions.

6.3.3 Negotiating shot selection through complex concepts

Integrating basketball talk into the teaching and learning process supports the idea that complex concept formation (Engeström, et al. 2005) can support effective negotiation of shot selection. Drawing upon the relational sensibilities of Activity Theory (Fenwick, 2011; McMurtry, 2006) and formative intervention methodology (Engeström, 2009a), this study involved collaborating with the coaches and players in a formative re-design of the team's offensive system of play. Through a series of expansive learning actions (Engeström & Sannino, 2010), we progressively transformed the patterns of basketball activity, resulting in Flow as a new concept for play. Ultimately, refinement of the offence involved construction of the word Flow. As a sideline cue, Flow provided an immediate functional value in that it triggered re-organisation of the players on the court, during game play. Conversations with Jonah in late May revealed how Flow invoked an image of water moving fluidly in nature. In order to support adaptation to the emergent performance environment, Flow promoted a style of responding appropriately to the game as it unfolded. This included avoiding stagnation (standing or holding the ball for long periods) and preferring continuous movement of the ball.

In this respect, Flow served the dual functions of a concept: 1) a practical tool for acting *in situ* and 2) an image for orienting one's vision toward the future (Engeström, Pasanen, Toivianen & Hasvisto, 2005). As both verbal definition and corporeal action, concepts are action-oriented and imply a way, or system of actions, for moving in a domain. In this respect, Davydov (1988) viewed concepts not as things, in and of themselves, but as enactments. Davydov expressed this idea when he stated, "it is not because of the concept that the child is capable of acting conceptually, but on the contrary, [s/he] acquires concepts because he starts to act conceptually, because his practical acts are conceptual" (p. 181).

In effect, Flow became a linguistic anchor to stabilise a concept for play that already existed in somatic form. A series of bodily movements were already enacting the meaning that Flow later came to express verbally. Moreover, Hutchins (2010) suggested that concepts become stable as humans enact multiple forms of the concept beyond just words. In this respect, the effectiveness of Flow as a linguistic tool depended upon the prior immanent experience of continuously moving, making quick decisions with the ball, relocating into space and circling the ball carrier. This idea reinforces Hutchins' (2010) proposal that motion in space can acquire conceptual meaning with the introduction of a word:

> In some circumstances, the body itself becomes a cognitive artefact, upon which meaningful environmentally coupled gestures can be performed...In such settings, motion in space acquires conceptual meaning and reasoning can be performed by moving the body…Courses of action then become trains of thought. (p. 444)

The influence of a linguistic artefact on nonlinear movement behaviour alludes to the potential of complex concepts for making sense of disordered environments (Engeström, et al., 2005). In dealing with ambiguity, ethical challenges and ideological divides, humans require tools to orient and guide. Coping with an increasingly unstable world "requires that we operate with increasingly complex concepts" (p.1). That said, complex concepts resist standardisation given they are oriented towards multifaceted issues that we need help understanding and managing. As Engeström, et al., (2005) suggested:

> Complex concepts are restless, contested and contradictory. They carry ethical and ideological challenges. They evolve and generate surprising manifestations. They cannot be easily defined and put to rest as categories in a dictionary. In other words, our conceptualisations also grab and mould us. Yet we need complex concepts as tools, which makes it necessary that we try to fix and stabilise them, at least temporarily. (p. 1)

6.3.4 Embracing conflict as a stimulus for growth and creativity

Concept formation provokes new possibilities for how coaches can think about conflicts in decision-making, the creative opportunities they engender, and the change management process to follow. Expansions of activity are necessarily a creative process. In this study, the team developed hybrid concepts in a bottom-up fashion to resolve the emergent, local and situated issue of how to play offensive basketball within the constraints of the players, school and team. Fruitfully, the learning actions involved in concept formation can provide coaches with a map for negotiating unfamiliar teaching and learning challenges that preclude readily available solutions. This study suggests that one such situation could be a re-design of the team's offensive strategy. The findings show that re-designing the team offence did not occur in a top down format, where the coach learned a pre-set system that he then imposed on the players. Rather, Flow emerged bottom up through sustained dialogue and experimentation between the coach and the players.

Activity Theory (Sannino, Daniels & Gutierrez, 2009) reinforces a sensibility in pedagogy to view conflict and disturbance as triggers of improvement. Specifically, Activity Theory embraces contradiction as the stimulus for growth (Engeström & Sannino, 2010). Contradictions reflect historically accumulating tensions that eventually manifest as conflicts of varying intensity, including dilemma, paradox and double bind (Engeström & Sannino, 2012). Common to studies of organisational teams and workplace activity,

scholarship rigorously examines the process of leveraging conflicts in activity for systems change (Engeström & Sannino, 2010). From a coaching perspective, Jones and Ronglan (2017) similarly called on coaches to embrace the mixed messages, opposing perspectives and conflicting demands that were "immanent and intrinsic to coaching" (p. 910). This meant seeing conflicts and dilemmas as a potential opportunity for learning and development within a team. In practice, coaches were encouraged "to preserve the creative tension and uncertainty it provides" (Jones & Ronglan, 2017, p. 910). A comparable sensibility permeates the nonlinear pedagogy literature. Because performance emerges from the interaction of individual and team constraints, changes in constraints produce instabilities in learners (Renshaw, et al. 2009). On this basis, coaches have been encouraged to embrace variability of the training environment, including instabilities that push learners to discover functional movement solutions.

Following the emergence of a disturbance, dilemma or conflict, the subjects of activity identify a germ cell that can provide the basis for a new, expanded model of activity. In this respect, the germ is the initial starting point for the progressive formation of a theoretical concept (Engeström, Nummijoki & Sannino, 2012):

a) The germ cell is the smallest and simplest initial unit of a complex totality;
b) It carries in itself the foundational contradiction of the complex whole;
c) The germ cell is ubiquitous, so commonplace that it is often taken for granted and goes unnoticed;
d) The germ cell opens up a perspective for multiple applications, extensions, and future developments. (p. 20)

During off-season training, taking a good shot became the germ cell for a new half court offence. During the initial period of pick-and-roll play and film review, the team became aware of a previously taken-for-granted idea: contested shots should be avoided and open shots should be pursued.[15] In making this important first realisation, the introduction of a basic dichotomy between good and bad shots opened a dialog into how the movements of players can open and close opportunities for a good shot. By the end of the term, adaptations in movement emerged, such as declining a challenged shot, passing out to open teammates, relocating into spaces and positioning one's body to be ready to shoot.

[15] Open shots are converted at a higher rate (Lucey, et al., 2014). On this basis, experienced coaches are likely to understand that the competitiveness of the team depends in part on its ability to take and make open shots.

Furthermore, the case shows how collective experimentation between the coach and players resulted in the germ cell becoming a four-out-one-in motion offence. During an experiment at the end of off-season training, Jonah eliminated the pick-and-roll from scrimmage play. The resulting play retained the impetus to take good shots but expanded beyond the pick-and-roll to include new scenarios and movement options (dribble hand-offs, cuts and post ups). These rules crystallised during preparation for Premier grade qualifying. When the qualifying tournament drew near and the team started match play, flaws in the players' understanding rose to the surface. When Justin and Alfred challenged Troy's shot selection against St. Anthony, Troy used the following game to experiment with new decisions. Troy held back from shooting right away, deferred more to Joey and focused intentionally on playing without the ball in his hands.

Consolidation of the offence began in earnest at the Premier grade qualifying tournament. In the week of competition, Jonah and Troy discussed modifying the offence to include more entry points. Entry points addressed a problem of predictability in that some players repeatedly started the offence with a handoff that could be easily defended. When the tournament arrived, the match against Morningside included very strong possessions of ball movement, cutting and spacing that led to open layups and three pointers. Despite not advancing to the Premier grade, their play generated optimism. After posting video of the tournament on the team's social media page, feedback suggested a confidence among the team that their motion offence could generate good shots. The team agreed that they could improve by being more consistent in following their rules of play.

6.3.5 Noticing to inform action

One of the key challenges in coaching is to make decisions with incomplete information (Jones & Wallace, 2005). In this respect, this study showed how coaching decisions followed nuanced observations of behaviours on and off the court. The findings of this study reinforce the idea that coaches can enact a complex sensibility through disciplined noticing (Jones, Bailey & Thompson, 2013). Drawing on the work of Mason (2002), Jones and Ronglan (2017) described noticing as "the ability to systematically observe events as they happen, to be more sensitive to opportunities of the moment" (p. 906). In a study of elite Portuguese coaches, Santos, et al. (2013) identified the practice of "noticing to inform action" (p. 270). Coaches revealed how noticing involved attention to the "general atmosphere" (Santos, et al., 2013, p. 270), including watching pre-practice behaviours, monitoring how players react to changes in a task or listening to player's tone of voice.

Noticing to inform action was most evident early in off-season training, when Jonah noticed the players enthusiastically engaging pick-and-roll scenarios with their own improvisational tactics. Jonah had not expected that the players would enjoy being thrown "into the deep end" (Conv, J1) and was "surprised that they want to keep playing" (Conv, J1). That observation reinforced an initial experiment to use pick-and-roll scenarios as the basis for small-sided games in training. During preparation for tournament, Jonah later observed a difference in quality of play every time that Troy and Joey did not attend team training:

> I just keep re-running that in my head. That we've had our best scrimmages without Joey and Troy. It was just like wow. We really had our best… There needs to be an understanding between those two and our team and us. A mutual understanding of why this is happening. How we can change that? (Conv, J1)

In retrospect, Jonah's observation was prescient of things to come. Jonah's observation fed forward into future discussions of shot quality, including debating mid-range shots during the St. Anthony's post-match film review. Taken together, these examples reveal two sides of the same coin. Specifically, noticing involves an intentional effort to take account of the small details that can lead to bigger things. Santos et al. (2013) described noticing as:

> There was an emphasis placed on observing situational details, not only in respect of how the learning was developing within practice sessions, but also to the general dispositions of individual athletes and the ambience of the group. (p. 270)

Importantly, this study also reinforces Santos, et al.'s (2013) call for coaches to widen their horizon beyond how learning develops in practice sessions. Specifically, the findings suggest that coaches would benefit from nuanced observation of changes in mood, engagement and disposition. Combined with trustful coach-athlete conversations, such observations may lead to more intimate understanding of their players' worldview and disposition. For instance, the individual case studies revealed how changes in on-court play corresponded to shifts in mood and disposition. Specifically, Jonah observed how Troy's joking during film sessions and fluctuating seriousness led him to say that Troy was "completely different this preseason to any other time" (Conv, J1).

More broadly, noticing reinforces a complex sensibility to see the whole system. Coaches can engage in intentional efforts to learn the personal biographies of players, especially their family situations, prior experiences in competitive sport, motivations for participation and assumptions about the nature of play. This includes observing players on outside teams and engaging their coaches. Nathan's movement between teams revealed how

contradictions between two coaches can create conflicts in decision-making for an athlete. In practice, coaches can proactively address this potential issue by reaching out to those adults and significant others then sharing coaching philosophies, training approaches and views of the shared player's development. In New Zealand secondary school basketball, this challenge is particularly relevant given the overlap that currently exists between representative and school basketball.

Understanding players this way would involve concerted relationship building by coaches with parents and athletes to achieve the mutual trust necessary for generating openness and vulnerability. For instance, Jonah's nuanced understanding of differences in Troy's behaviours stemmed form a multi-year relationship that including considerable pastoral care. When Troy's parents were away in Tonga, Jonah struggled to reconcile his dual role as both coach and caregiver. That tension speaks to boundaries between sport and personal life that both Jonah and Troy negotiated. The blurring of such boundaries also highlights the role of sport for members of the team with migrant backgrounds especially those of Asian and Pacific Island descent. With many parents working non-traditional hours, some youth sport participants experienced hardships related to extensive travel, scarce financial resources and limited parental support.

6.3.6 Embracing complex sensibilities

This study enriches coaching pedagogy by linking changes in movement behaviour to the broader problematic situation of the team (of which the coach was a part). On this basis, this study strongly reinforces the need for coaches to view shot selection as a collective and emergent phenomenon, born from an evolving relationship between individuals and their environment (Araújo, et al, 2006; Mouchet, 2005). In raising awareness to socio-cultural influences, this study reinforces the need for coaches to assume interdependence when assessing patterns in play. On its face, this means rejecting tacit assumptions that decisions are contained within in an isolated individual, independent of prior history, perception-action dynamics and the social milieu. Moreover, if play arises from context, coaches must also assume emergent effects over straightforward cause-and-effect relations (Jones & Ronglan, 2017). Here, emergence refers to how elements of a system interact in ways that produce forms that are greater than the sum of those elements (Cilliers, 1998). Coaches can employ emergent sensibilities by remaining open to the ways in which prior coaching, family pressures, idealised roles and beliefs about the game, co-implicate player decision-making. When confronted by player decisions with which one disagrees, coaches should assume that there is more beneath the surface.

Coaching pedagogy can be enriched by the emphasis in Activity Theory on learning as the collective formation of new models of activity (Engeström, 2004; Engeström & Sannino, 2010). Strong parallels exist between this study and those from developmental work research that involve the researcher scaffolding the formation of a new form of work. Typically, studies follow a similar transition from mechanical, bureaucratic work forms to hybrid, organic and flexible ones (Engeström et al., 2002). On this basis, Engeström and Sannino (2010) regarded the redefinition of collective activity systems as a form of learning that challenges traditional modes where what is learned is necessarily known in advance:

> Traditional modes of learning deal with tasks in which the contents to be learned are well known ahead of time by those who design, manage and implement various programs of learning. When whole collective activity systems, such as work processes and organisations, need to redefine themselves, traditional modes of learning are not enough. Nobody knows exactly what needs to be learned. (p. 3)

Drawing upon a complex sensibility, coaches can position themselves as actors in a web of relations. In this revolving web, coaches have a leading role, but with limits to awareness, control and predictability (Jones & Wallace, 2005). While coaches can select players, design the system and structure training sessions; they do not control the designs of the opposition coach, competence of the officials or the messages that players will encounter from friends on social media. In this respect, Sen's (2012) discussion of winemaking warrants reconsideration as a metaphor for coaching shot selection. While the winemaker can push, shape and influence some aspects of the interaction (e.g. what barrel to store the wine in, how much yeast to add), the winemaker clearly cannot control the amount of rain, the humidity in the air, nor the availability of desired ingredients in the marketplace. Taken together, an emergent sensibility reinforces the view that coaching cannot be a wholly rational activity (Bowes & Jones, 2006; Cushion, 2007; Jones & Wallace, 2005; Saury & Durand, 1998) because coaches cannot fully know how things will play out, all of the players' implicit tendencies or how a programme of action might contradict with the beliefs of significant others.

Chapter 7 Conclusion

Through a qualitative and ethnographic case study design, this research investigated shot selection as a constant negotiation between coaches, players and their environment. Set in the context of a New Zealand secondary school boys' basketball team, this study located shot selection in a concrete setting, against the local history of subjects, objects and activity. The outcomes of research were three chronological case narratives that depicted the team's (of which the researcher became a part) experience over a competitive season. Taken together, the findings capture what tends to be neglected by predominant approaches. Whereas quantitative data-driven approaches to shot selection have isolated shot outcomes from the context in which they occur, this study embraced context in order to narratively represent the people and processes behind shot selection. Additionally, pedagogical study of decision-making tends to focus narrowly on perception-action dynamics and task design in training. In contrast, this case study used the negotiation of shot selection within the Greenwood senior team to capture the complex interplay between skilled movement, teaching and learning practices, and human activity systems. Doing so humanises nonlinear dynamics, expands the boundaries of pedagogy research, and reinforces complex understandings of coaching practice. This chapter elaborates on these points. It begins with a review of the case findings, addresses their implications for research and concludes with future recommendations.

7.1 Capturing shot selection with the activity system in view

Predominantly, shot selection has received attention as a strategic problem investigated through quantitative data-driven methods (Chang, et al., 2014; Lucey, et al. 2014; Skinner, 2012). This study differs from predominant approaches by investigating shot selection as a problem of practice, including the use of ethnographic methods and a narrative approach to analysis. Accordingly, the study's findings contextualise shot selection by presenting the phenomenon qualitatively, with the activity system in view. With the researcher embedded in the basketball activity system, this study captured conflicts in shot selection as they unfolded through daily interactions between coaches, players and the environment. In taking the activity system as the unit of analysis, this study was able to access multiple perspectives on shot selection given that the phenomenon emerged across the network of practices that made up the senior boys' basketball team. Primarily, these practices included small-sided play in team trainings, team performance in competition, group discussion in film review, and individual conversations away from team settings.

Principally, this study found that a transition in coaching philosophy sparked a season-long

transformation in how the coaches and players approached shot selection. During the off-season, the introduction of modified games and film review disturbed familiar patterns of shot selection and offensive decision-making. These included forcing contested shots in a crowded middle and passively watching play from outside the three-point line. When pre-season began, positive improvements in shot selection encouraged a re-design of the offensive system for play from scripted set plays to motion offence. As preparations for a major qualifying tournament ensued, new conflicts in shot selection revealed hidden tensions in how players defined success, framed their roles and understood the distribution of scoring responsibility within the team. Resolution of conflicts followed multiple learning actions, including open dialogue, experimentation with new roles and the development of linguistic tools. Progressions in collective understanding manifested in the term Flow, a metaphor for play that conceptually captured an ethos to read the situation, adapt and find the open shot.

Taken together, these findings advance a complex understanding of shot selection in competitive basketball. The team's ongoing transformation in understanding suggests that shot selection emerged from a web of relations and could not be reduced to a single individual or factor. On this basis, the complexity of shot selection manifests as a multiplicity of perspectives that exist when attempting to make sense of patterns, conflicts and dilemmas. For the purposes of this study, discussion of the findings (See Chapter 6) highlighted five perspectives of shot selection that speak to this complexity. Table 16 lists these perspectives, including reflexive questions that coaches can draw upon.

Table 16. Perspectives on shot selection

Perspective	**Reflexive questions**
System of play	What is the underlying logic of the system of play? What are the rules for offensive decision-making? How are positions defined and organised? What is the object of a possession?
Learning design	How is shot selection trained? How is shot selection described and discussed? What is the nature of feedback on shot selection?
Goal conditions	What are the goals for participation? How do team members define success? What do team members expect from each other?
Player logic and identity	What are players' habits and implicit preferences? How do players frame their role?
Boundary crossing	What else is happening outside of the team? What conflicts exists when moving between this team and another space?

With respect to the implications for coaching practice, this study reveals the ongoing and inseparable relationship between coaching and athlete decision-making (Jones & Wallace, 2005). Because conflicts in shot selection did not occur in a single episode nor were reducible to a single factor, this study does not present a view of coaching as a best practice method. Rather, this study illustrated an ongoing, reciprocal interaction between coaching and playing. Specifically, this study presents coaches as partners in shot selection who acted as catalysts for change through their design of training and the offensive system of play. Evidenced by the progressive embrace of small-sided games and a motion offence, coaching was more proscriptive and responsive than prescriptive and controlling. Coaching shot selection involved actively probing the mood of the team, including player disposition, motivation and responsiveness to ongoing events. At critical moments, probing became active intervention, often in the form of conversation and system modification.

This view of coaching lends itself to the principles of a coaching-as-orchestration framework (Jones & Ronglan, 2017; Jones & Wallace, 2005; Santos, et al., 2013) Orchestration reflects a disposition to steer, rather than control, in response to evolving circumstances (Jones & Ronglan, 2017). From this complex perspective, coaches are positioned as actors in a web of relations with relative unpredictability and uncontrollability of performance outcomes and player learning. This includes making decisions with incomplete access to player's meaning-making systems, responding to novel circumstances and managing differences in goals. In this study, orchestration became most visible in the following ways:

- Systematic use of game scenarios in training
- Using film review to make the implicit explicit
- Negotiating shot selection with complex concepts
- Embracing conflict as the stimulus for growth
- Noticing to inform action

7.2 Expanding the boundaries of coaching and decision-making research

For coaching pedagogy, this study extends interest in orchestration as a framework for understanding coaching practice (Jones & Ronglan, 2017; Jones & Wallace, 2005; Santos, et al. 2013). Orchestration has emerged as a framework for coaching considering growing recognition of the complexity of the coaching process. However, few empirical studies have drawn on the orchestration framework to examine the practice of coaching. A notable exception includes Santos, et al. (2013). This may stem from the typical goals of research.

Jones and Wallace (2005) noted the tendency in coaching research to seek “positive improvements through identification and prescription of best practice methods” (Jones & Wallace, 2005, p. 123).

Furthermore, this case responds to calls from pedagogy researchers to de-centre method in the study of learning (Doll & Truet, 2012; Ricca, 2012). Ovens and Godber (2013) urged scholars to keep the whole system in view when studying experience in sport, arguing that it makes little sense to think about “content, function, setting and acting person as independent of each other” (p. 64). Rather than view learning as a single episode or best-practice method, Doll argued that research would benefit from seeing the learning process as a collaborative “journeying with others on a path of learning engagement and personal transformation” (p. 86). Such a holistic perspective humanises an otherwise mechanistic process by reinforcing a view that control of learning resides in the situation itself, “in the activity of people doing, sharing and reflecting together” (p. 97). In this respect, narratives of the case study illustrate, from the researcher’s perspective, how flesh-and-blood people can make meaning through an emergent, ambiguous and nonlinear context.

In giving voice to the participants, this study reveals the subjectivity involved in shot decisions. In particular, this study draws linkages between on-court behaviours, cultural identity and definitions of success in school-aged sport. Situated in the New Zealand secondary school sport context, this case study contributes to the current dialogue around secondary school sport participation. In particular, Troy’s struggle warrants attention as a manifestation of the complex relationship between Pacific Island culture, athlete identity, masculinity and sport performance.

Relatedly, this study extends recent interest in Activity Theory for investigating pedagogical questions (Jones et al., 2014). Through AT, this study retained an emergent and relational understanding of learning and development, particularly a focus on the interrelation between organism and environment (McMurtry, 2006; Stetsenko, 2008). However, AT departs in important ways from the current emphasis on ecological dynamics and nonlinear pedagogy (Renshaw, et al. 2015). While AT stands with ecological psychology in opposition to mechanistic-reductionist views of learning (Stetsenko, 2012), AT takes the cultural historical activity system as the unit of analysis. As object-oriented, tool-mediated and historically evolving, activity systems imply an ongoing and collaborative view of human development. Here, knowledge “embodies past practice, at a given point in history and in a given socio-political space” (Stetsenko, 2014, p. 69). This study drew upon

AT to “analyse development within practical social activities” (Sannino, Daniels & Gutierrez, 2009, p. 1). As Sannino, Daniels and Gutierrez (2009) pointed out:

> Activity theory conceptualizes actions in the broader perspective of their systemic and motivational context and, thus, aims at going beyond a given situation. The emphasis on action alone does not fulfil the research agenda in activity theory, according to which actions are studied in historically evolving collective activities. (p. 2)

The major effect of employing AT was to link movement activities to the social environment, including reflective acts, verbalisation, conscious intentionality, cultural identity and interpersonal relationships. Smith (2013) challenged ecological dynamics theorising for being excessively narrow in focus. Despite producing findings that have clearly advanced the field, Smith (2013) challenged the tendency in ecological dynamics research to narrowly view skill learning and decision-making as an implicit biological process. Specifically, scholars in this tradition tend to restrict study to the immediate performer-environment system in order to isolate perception-action dynamics. According to Smith (2013), a major consequence of current theorising has been a neglect of conscious intentionality and the embodiment of skilfulness. Consequently, Smith (2013) argued that researchers interested in human movement and skill learning expand their perspective. Specifically, Smith suggested that current theorising would benefit from more explicit consideration of the relationship between decisions, reflection and a changing social environment.

7.3 Towards a complex epistemology of sport coaching

This study contributes to calls for a complex epistemology of coaching (Cushion, 2007; Bowes & Jones, 2006; Jones et al., 2013; Jones et al. 2014). The emphasis on complex sensibilities comes in response to concerns over an intensifying quantitative imperative in sport (Baerg, 2015; Beer, 2015; Hutchins, 2016). Drawing upon positivist assumptions, quantitative data-driven analyses isolate data from context in order to establish generative laws that can enable prediction (Haggis, 2008). For instance, the rise of big data analytics includes an implicit assumption that the world can be broken down into constituent parts and separately analysed to produce hidden truths (Baerg, 2015; Osberg, Biesta & Cilliers, 2008; Stetsenko, 2008). Problematic in this approach is a belief in the inherent superiority of objectivity over subjective interpretation, including a belief that big data analytics implies human progress (Millington & Millington, 2015). Perhaps unsurprisingly, such epistemological attitudes are linked to measurement culture in team sport (Beer, 2015), including a crude faith in numbers (boyd & Crawford, 2012).

However, this study reinforces the idea that coaches face limits to prediction, control and awareness of their players' learning. Coaches are influential, but they are not the only influences. In this respect, this study suggests that coaches can embrace complex sensibilities by acknowledging these limits and responding with flexible approaches that adapt over time as a function of changing conditions. What emerges will always depend on what interacts (Haggis, 2008), therefore coaching for decision-making demands a mode of thinking that "makes it possible to consider diverse influences all at the same time" (Davis, Sumara & Luce-Kapler, 2015, p. 193). In this respect, coaches can enhance their work by expanding their perspective to include history, relationships and subjectivities. Stetsenko (2008) described this orientation in the following manner:

> Development and learning are not seen as products of solitary, self-contained individuals endowed with internal machinery of cognitive skills that only await the right conditions to unfold…instead, they are seen as existing in the flux of individuals relating to their world, driven by relational processes and their unfolding logic, and therefore as not being constrained by rigidly imposed, pre-programmed scripts or rules. (p. 477)

Given the emphasis in complexity to search for the connections between the elements of a system (Capra & Luisi Luigi, 2014; Haggis, 2008), coaching can benefit from a philosophical commitment to connect, rather than separate, those elements. Similarly, Anderson, et al. (2005) called for a relational attitude when confronted by conflicts. "When we see either a discrepancy or a consistency between ideas and actions, this is a cue to search for and describe the underlying interdependencies" (p. 4). Butler et al. (2012) understood that perspective as an *ecological complexity* worldview. Here, athlete learning is facilitated through an active and multi-dimensional interaction between learners, teachers and key stakeholders.

7.4 Recommendations for future research

Methodologically, the present study suggests that researchers can integrate a wider variety of research approaches when studying shot selection in competitive basketball. Considering the messy, lived realities that coaches and players encounter in practice, shot selection research can benefit from research designs focused on lived experiences. Case study reflects "study in depth" (Hetherington, 2013, p. 75) of the "particularity and complexity of a single case" (Stake, 2013, p. xi). In this respect, the use of qualitative case study design in the present research may open new methodological possibilities for scholars of shot selection. Case study researchers are encouraged to understand interdependencies, be sensitive to relationships, look for the unexpected and focus on process (Anderson, Crabtree, Steele & McDaniel, 2005). On this basis, case study can be

usefully paired with a complexity perspective to study learning and development because complex phenomena need to be viewed holistically, thus necessitating a focus on interactions through a contextual approach (Hetherington, 2013).

This study also suggests that researchers of coaching practice and athlete decision-making embrace narrative as a complex sense-making mechanism. Bruner (1991) understood narrative as more than a text for representation, but an instrument that helps humans to make meaning. Narratives accentuate the temporal and contextual dimensions of experience by establishing sequences of local events linked through an unfolding plot. First, events occur among people in concrete settings that enable a contextual understanding of the situations in which moments occurred. In this respect, a synthesis of data into a narrative whole affords researchers one solution to questions posed by Haggis (2008) and Osberg and Biesta (2010). To know the situational details that led to decisions is to establish a form of causality based on movement and transition. “In narrative we have a more concrete rendering of causality. It is historical and specific, not general and contingent. ‘This did happen this way,’ versus ‘this should happen if the following conditions hold’” (Tsoukas & Hatch, 2001). What’s more, the temporal sensitivity of each point in narrative integrates the present with the history of prior events (memory) and the anticipations of future events (expectations). This sensitivity does not strictly follow symmetrical calendar time, but a nonlinear, humanly relevant time (Ricoeur, 1984; in Tsoukas & Hatch, 2001).

Furthermore, this study suggests that those interested in decision-making increase attention to the micro-politics between players and coaches. Disagreement over the distribution of scoring responsibility suggested that players in teams might engage in a contested struggle for power and dominance. From this micro political perspective, shot attempts can be understood as commodities with a use and exchange value that players may pursue in order to further their own personal interests. While presumably more common to professional sport and elite amateur environments, such interests might include individual awards, future opportunities, material concessions and media attention. At the grassroots level in the United States, popular evidence suggests that intermediate and secondary school aged basketball players engage in this kind of micro political struggle during their recruitment to university (Dohrmann, 2010).

In this respect, researchers of pedagogy, tactical behaviour and talent development can do more to link movement decisions and athlete learning to culture and history. Unfortunately,

cultural influences are rarely included in current research. An interesting exception is Wilson's (2013) popular examination of the history of soccer tactics. In recounting the evolution of soccer philosophy, Wilson drew together tactics, history, geography and politics in ways that demonstrate their inseparability. Another exception was Uehara, Button, Araújo, et al.'s, (2018) recent investigation of the development of skill and expertise in Brazilian street games. This study linked informal street soccer to 'ginga', a national style of play that valued fun, enjoyment and natural body expression.

With respect to New Zealand secondary school sport, the present study offers a view of athlete learning that may aid efforts to improve alignment between competitive school sport programmes and the educational mission of schools. School sport programmes receive criticism when the competitive sport business model over-emphasises achievement results (Coakley, 2011). In New Zealand, current critiques question coaches' and sport leaders' inattention to the quality of sport participation, including perceptions of weak connections between sport participation and learning goals espoused by schools (Sport New Zealand, 2015). In response to such critiques, this study warrants attention for the ways in which the teaching and learning process within the team promoted a shift in decision-making among the players. Specifically, the team's transition from scripted set plays to motion offence deserves consideration for the emphasis on reading situations flexibly instead of following predetermined scripts. This shift to a more adaptive form of play parallels current movements in education to cultivate more complex ways of thinking in students (Davis, Sumara & Luce-Kapler, 2015; Gidley, 2016; Gilbert, 2005; Snowden & Boone, 2007).

In this respect, the relationship between sport programmes and academic institutions would benefit from efforts to identify then strengthen the conceptual similarities between academic key competencies (Gidley, 2016; Hipkins, 2010) and sport expertise (Baker, Côté & Abernethy, 2003; Grehaigne et al., 2005; Mouchet, 2005). Such efforts could also include better integration between coach and teacher pedagogy given the growing mutual interest in complex worldviews and calls to cultivate independent thinking and decision-making (Davis, Sumara & Luce-Kapler, 2015; Davis & Sumara, 2010b; Gidley, 2016; Light, Harvey & Mouchet, 2012; Sen, 2012; Storey, Butler & Robson, 2014; Sumara & Davis, 2006).

Finally, boundary crossing has potential as a conceptual tool for examining learning situations that involve movement into the unfamiliar. Through this metaphor, scholars may

be better positioned to investigate athlete decision-making in relation to change events and transitions, such as injury, selection (and de-selection) and season phase. For scholars of sport and education, boundary crossing may be an especially powerful tool for examining the learning experience of competitive athletes who move between sport and non-sport settings. This includes the ways that decision-making transforms over time as student-athletes cross the boundaries between academic, social and sport settings. While scholars of sport and education continue to investigate the student athlete population, this work tends to emphasise academic experiences among those who play sport in school (Mahiri & Van Rheenen, 2010). Notable exceptions include the work of Light and Nash (2011). For this reason, boundary crossing has potential as a mechanism for examining how sport learning unfolds in relation to overlapping activity systems among school sport participants.

Taken together, this study advances two major areas for research. First, as an investigation of shot selection in competitive basketball, it fills the need for contextualised information when studying tactical behaviour in invasion team sports (Courel, et al., 2017; Hutchins, 2016). By capturing the negotiation of shot selection ethnographically, then representing it narratively, this study gives voice to the participants as they engage in a conscious reflective struggle to make sense of the unfolding situation of the team. The principal effect of this approach is to humanise a nonlinear phenomenon. When evaluating sport performance, de-contextualised analyses can lead to unfair judgements of participants (Hutchins, 2017). By making the cultural, historical and pedagogical conditions for shot selection visible, this study provokes researchers, evaluators and coaches to appreciate the multiple influences on decision-making.

This includes the coaches themselves. By framing shot selection as a constant negotiation between coaches, players and the environment, this study also contributes a representation of the complex relationship between coaching and athlete-decision making. Given the reciprocal interaction between coaching philosophy and offensive decision-making that occurred, this case study reinforces a view of coaching as orchestration (Jones & Ronglan, 2017). With limits to control, prediction and awareness, coaching warrants continued attention as an adaptive discipline that demands close monitoring and flexible management of evolving circumstances. In that respect, this study encourages the pedagogy field to expand the boundaries of research to include field studies of coaching practice and contextualised study of athlete learning over time. The current emphasis in nonlinear pedagogy on perception-action has resulted in a narrow focus on dynamics that

occur below athletes' conscious awareness (Smith, 2013). While important, current approaches seriously neglect how coaches and athletes navigate interpersonal relationships, make meaning through speech and respond to evolving circumstances over extended time horizons. In this sense, pedagogy would benefit from continued efforts to bring motor learning principles into conversation with coaching practices. Such an integrated approach would embody the philosophical commitment of complexity thinking to find connections between elements (Haggis, 2008).

References

Adler, P. A., & Adler, P. (1991). *Backboards and blackboards: College athletics and role engulfment*. New York: Columbia University Press.

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132-169. https://doi.org/10.3102/0034654311404435

Anderson, N. (2015). *The Rise of Pakuranga College Basketball*. Retrieved from https://www.youtube.com/watch?v=aYR7wp2RN1A

Anderson, N. (2016). Basketball: The Steven Adams Effect. *New Zealand Herald*. Retrieved from https://www.nzherald.co.nz/sport/news/article.cfm?c_id=4&objectid=11659338

Anderson, R. A., Crabtree, B. F., Steele, D. J., & McDaniel, R. R., Jr. (2005). Case study research: The view from complexity science. *Quality Health Research, 15*(5), 669-685. https://doi.org/10.1177/1049732305275208

Andrews, D. L. (2008). Kinesiology's inconvenient truth and the physical cultural studies imperative. *Quest, 60*, 45-62.

Araújo, D., Davids, K., & Hristovski, R. (2006). The ecological dynamics of decision making in sport. *Psychology of Sport and Exercise, 7*(6), 653-676. https://doi.org/10.1016/j.psychsport.2006.07.002

Auckland Council (2016). *Demographics report card, Howick Local Board area 2016*. Retrieved from https://www.aucklandcouncil.govt.nz/environment/state-of-auckland-research-report-cards/Pages/demographics-report-card-howick-local-board-area-2016.aspx#:~:text=The%20median%20household%20income%20was,Howick%20were%20also%20relatively%20high.

Baerg, A. (2016). Big data, sport, and the digital divide. *Journal of Sport and Social Issues, 41*(1), 3-20. https://doi.org/10.1177/0193723516673409

Baker, J., Cöté, J., & Abernethy, B. (2003). Sport-specific practice and the development of expert decision-making in team ball sports. *Journal of Applied Sport Psychology, 15*(1), 12-25. https://doi.org/10.1080/10413200305400

Balague, N., Torrents, C., Hristovski, R., Davids, K., & Araújo, D. (2013). Overview of complex systems in sport. *Journal of Systems Science and Complexity, 26*(1), 4-13. https://doi.org/10.1007/s11424-013-2285-0

Balish, S., & Côté, J. (2013). The influence of community on athletic development: an integrated case study. *Qualitative Research in Sport, Exercise and Health, 6*(1), 98-120. https://doi.org/10.1080/2159676x.2013.766815

Barab, S. A., & Kirshner, D. (2001). Guest editors' introduction: Rethinking methodology in the learning sciences. *Journal of the Learning Sciences, 10*(1-2), 5-15.

https://doi.org/10.1207/s15327809jls10-1-2_2

Barab, S. A., & Plucker, J. A. (2002). Smart people or smart contexts? Cognition, ability, and talent in an age of situated approaches to knowing and learning. *Educational Psychologist, 37*(3), 165-182.

Basketball New Zealand. (2012). *The game plan*: Basketball New Zealand. Retrieved from https://www.yumpu.com/en/document/view/24343860/the-game-plan-basketball-new-zealand

Bateson, G., & Silvia Broecker, M. (2007). Reflections on learning and addiction: Porpoises and palm trees. *Kybernetes, 36*(7/8), 985-999. https://doi.org/10.1108/03684920710777504

Beach, K. (1999). Consequential transitions: A sociocultural expedition beyond transfer in education. *Review of Research in Education, 24*(1), 101-139. https://doi.org/10.3102/0091732x024001101

Beer, D. (2015). Productive measures: Culture and measurement in the context of everyday neoliberalism. *Big Data & Society, 2*(1). https://doi.org/10.1177/2053951715578951

Bergeron, M. F., Mountjoy, M., Armstrong, N., Chia, M., Cöté, J., Emery, C. A., . . . Engebretsen, L. (2015). International Olympic committee consensus statement on youth athletic development. *British Journal of Sports Medicine, 49*(13), 843-851. https://doi.org/10.1136/bjsports-2015-094962

Blackler, F. (2009). Cultural-historical activity theory and organization studies. In A. Sannino, H. Daniels, & K. D. Gutierrez (Eds.), *Learning and expanding with activity theory* (pp. 19-39). Cambridge, UK: Cambridge University Press.

Bowes, I., & Jones, R. L. (2006). Working at the edge of chaos: Understanding coaching as a complex, interpersonal system. *The Sport Psychologist, 20*(2), 235-245. https://doi.org/10.1123/tsp.20.2.235

boyd, d., & Crawford, K. (2012). Critical questions for big data. *Information, Communication & Society, 15*(5), 662-679. https://doi.org/10.1080/1369118x.2012.678878

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, July 1977*, 513-531.

Bronfenbrenner, U. (1979). *The Ecology of Human Development*: Harvard University Press. Retrieved from https://books.google.co.nz/books?id=OCmbzWka6xUC

Browning, L., & Boudes, T. (2005). The use of narrative to understand and respond to complexity *E:CO, 7*(3-4), 32-39.

Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry, 19*(1), 1-21.

Bruner, M. W., Munroe-Chandler, K. J., & Spink, K. S. (2008). Entry into elite sport: A preliminary investigation into the transition experiences of rookie athletes. *Journal of Applied Sport Psychology, 20*(2), 236-252. https://doi.org/10.1080/10413200701867745

Burgher, E. (2017, February 22, 2017). *The rise of analytics in high school basketball* [Web page]. Retrieved from https://news.medill.northwestern.edu/chicago/the-rise-of-analytics-in-high-school-basketball/

Butler, J., & Griffin, L. (2010). *More Teaching Games for Understanding*. Champaigne, IL: Human Kinetics.

Butler, J. I., Storey, B., & Robson, C. (2012). Emergent learning focused teachers and their ecological complexity worldview. *Sport, Education and Society, 19*(4), 451-471. https://doi.org/10.1080/13573322.2012.680435

Byrne, D. (2016). Complexity, configurations and cases. *Theory, Culture & Society, 22*(5), 95-111. https://doi.org/10.1177/0263276405057194

Campbell, B. (2015). Hot Sauce and White Chocolate: AND1 and ghetto style in basketball. *Communication Design, 3*(1), 51-61. https://doi.org/10.1080/20557132.2015.1057374

Capra, F., & Luigi Luisi, P. (2014). *The systems view of life: A unifying vision*. Kindle edition: Cambridge University Press.

Cassidy, T., Jones, R. L., & Potrac, P. (2009). *Understanding sports coaching: The social, cultural and pedagogical foundations of coaching practice* (2nd ed.). New York, NY: Routledge.

Chang, Y. H., Maheswaran, R., Su, J., Kwok, S., Levy, T., Wexler, A., & Squire, K. (2014). *Quantifying shot quality in the NBA*. Paper presented at the meeting of the 8th Annual MIT Sloan Sports Analytics Conference, Hynes Convention Centre. Retrieved from http://www.sloansportsconference.com/wp-content/uploads/2014/02/2014-SSAC-Quantifying-Shot-Quality-in-the-NBA.pdf

Chotiner, I. (2019, June 6, 2019). *Jalen Rose has a problem with basketball analytics*. https://www.newyorker.com/news/q-and-a/jalen-rose-has-a-problem-with-basketball-analytics

Chow, J. Y. (2013). Nonlinear learning underpinning pedagogy: Evidence, challenges, and implications. *Quest, 65*(4), 469-484. https://doi.org/10.1080/00336297.2013.807746

Chow, J. Y., & Atencio, M. (2012). Complex and nonlinear pedagogy and the implications for physical education. *Sport, Education and Society, 19*(8), 1034-1054. https://doi.org/10.1080/13573322.2012.728528

Christensen, M. K., Laursen, D. N., & Sørensen, J. K. (2011). Situated learning in youth elite football: A Danish case study among talented male under-18 football players. *Physical Education and Sport Pedagogy, 16*(2), 163-178. https://doi.org/10.1080/17408989.2010.532782

Cilliers, P. (1998). *Complexity and Postmodernism: Understanding complex systems*. New York:

Routledge.

Coakley, J. (2011). Youth Sports. *Journal of Sport and Social Issues, 35*(3), 306-324. https://doi.org/10.1177/0193723511417311

Cole, M., & Engeström, Y. (1993). A cultural-historical approach to distributed cognition. *Distributed cognitions: Psychological and educational considerations*, 1-46.

Cole, M., & Gajdamashko, N. (2009). The concept of development in Cultural-Historical Activity Theory: Vertical and horizontal. In A. Sannino, H. Daniels, & K. D. Gutiérrez (Eds.), *Learning and Expanding with Activity Theory* (pp. 129-143). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511809989.009

Collins, D., Bailey, R., Ford, P. A., MacNamara, Á., Toms, M., & Pearce, G. (2012). Three worlds: new directions in participant development in sport and physical activity. *Sport, Education and Society, 17*(2), 225-243. https://doi.org/10.1080/13573322.2011.607951

Cöté, J., & Gilbert, W. (2009). An integrative definition of coaching effectiveness and expertise. *International Journal of Sports Science & Coaching, 4*(3), 307-323.

Courel-Ibáñez, J., McRobert, A. P., Toro, E. O., & Vélez, D. C. (2017). Collective behaviour in basketball: a systematic review. *International Journal of Performance Analysis in Sport, 17*(1-2), 44-64. https://doi.org/10.1080/24748668.2017.1303982

Cushion, C. J. (2007). Modelling the complexity of the coaching process. *International Journal of Sports Science & Coaching, 2*(4), 395-401.

Cushion, C. J., Armour, K. M., & Jones, R. L. (2006). Locating the coaching process in practice: models 'for' and 'of' coaching. *Physical Education and Sport Pedagogy, 11*(1), 83-99.

Davids, K., Araújo, D., Correia, V., & Vilar, L. (2013). How small-sided and conditioned games enhance acquisition of movement and decision-making skills. *Exercise and Sports Sciences Reviews, 41*(3), 154-161.

Davis, B., & Sumara, D. (2005). Complexity science and educational action research: towards a pragmatics of transformation. *Educational Action Research, 13*(3), 453-464.

Davis, B., & Sumara, D. (2008). Complexity as a theory of education. *Transnational Curriculum Inquiry, 5*(2), 33-44.

Davis, B., & Sumara, D. (2010a). 'If things were simple...': complexity in education. *Journal of Evaluation in Clinical Practice, 16*(4), 856-860. https://doi.org/10.1111/j.1365-2753.2010.01499.x

Davis, B., & Sumara, D. (2010b). Using complexity research to structure collective learning. In J. Butler & L. Griffin (Eds.), *More Teaching Games for Understanding*. Champaigne, IL: Human Kinetics.

Davis, B., Sumara, D. J., & Luce-Kapler, R. (2015). *Engaging minds: Cultures of education and*

practices of teaching (Third edition). Routledge. Retrieved from http://ebookcentral.proquest.com/lib/AUT/detail.action?docID=2038974

Davydov, V. V. (1988). The concept of theoretical generalization and problems of educational psychology. *Studies in Soviet Thought, 36*(3), 169-201.

Davydov, V. V. (1990). *Types of Generalization in Instruction: Logical and Psychological Problems in the Structuring of School Curricula* (Vol. 2). Reston, Virginia: National Council of Teachers of Mathematics.

Denison, J., Mills, J. P., & Konoval, T. (2015). Sports' disciplinary legacy and the challenge of 'coaching differently'. *Sport, Education and Society, 22*(6), 772-783. https://doi.org/10.1080/13573322.2015.1061986

Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of education.* The Free Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b20338776&site=eds-live

DiFiori, J. P. (2010). Evaluation of overuse injuries in children and adolescents. *Current Sports Medicine Reports, 9*(6), 372-378. https://doi.org/10.1249/JSR.0b013e3181fdba58

Dittmer, J. (2013). Geopolitical assemblages and complexity. *Progress in Human Geography, 38*(3), 385-401. https://doi.org/10.1177/0309132513501405

Dohrmann, G. (2010). *Play their hearts out: A coach, his star recruit and the youth basketball machine*. New York, NY: Ballantine Books.

Doll, W. E., & Trueit, D. (2012). *Pragmatism, postmodernism, and complexity theory: The "fascinating imaginative realm" of William E. Doll, Jr* [Electronic document]. Routledge. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=1016042

Drewe, S. B. (2000). An examination of the relationship between coaching and teaching. *Quest, 52*, 79-88.

Driebe, D. J., & McDaniel, R. R. (2005). Complexity, uncertainty and surprise: An integrated view. In McDaniel, R.R. & Driebe, D.J. (Eds), *Uncertainty and surprise in complex systems* (pp. 19-30). Berlin, Heidelberg: Springer. https://doi.org/10.1007/10948637_3

Duncan-Andrade, J. M. R. (2010). *What a coach can teach a teacher: Lessons urban schools can learn from a successful sports program*. New York, NY: Peter Lang Publishing, Inc.

Dyson, M. E. (1993). Be like Mike?: Michael Jordan and the pedagogy of desire. *Cultural Studies, 7*(1), 64-72.

Education Review Office (2013). *Pakuranga College Education Review*. Retrieved from http://ero.govt.nz/Early-Childhood-School-Reports/School-Reports/Pakuranga-College-13-05-2013

Elder, G. H. (1998). The life course as development theory. *Child Development, 69*(1), 1-12.

https://doi.org/10.2307/1132065

Elliott, S., & Drummond, M. (2014). The (limited) impact of sport policy on parental behaviour in youth sport: A qualitative inquiry in junior Australian football. *International Journal of Sport Policy and Politics, 7*(4), 519-530. https://doi.org/10.1080/19406940.2014.971850

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing ethnographic fieldnotes.* University of Chicago Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b10781420&site=eds-live

Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.

Engeström, Y. (2003, March 21-23). *The horizontal dimension of expansive learning: Weaving a texture of cognitive trails in the terrain of health care in Helsinki*. Paper presented at the meeting of the New Challenges to Research on Learning, University of Helsinki.

Engeström, Y. (2004). New forms of learning in co-configuration work. *Journal of Workplace Learning, 16*(1/2), 11-21. https://doi.org/10.1108/13665620410521477

Engeström, Y. (2008a). Disturbance management and masking in a television production team. In *From teams to knots: Activity-theoretical studies of collaboration and learning at work*: Cambridge University Press. Retrieved from http://ebooks.cambridge.org. https://doi.org/10.1017/cbo9780511619847

Engeström, Y. (2008b). *From Teams to Knots*. Cambridge: Cambridge University Press. https://doi.org/10.1017/cbo9780511619847

Engeström, Y. (2009a). From learning environments and implementation to activity system and expansive learning. *Actio: An International Journal of Human Activity, 2*, 17-33.

Engeström, Y. (2009b). Wildfire activities: New patterns of mobility and learning. *International Journal of Mobile and Blended Learning, 1*(2), 1-18.

Engeström, Y. (2011a). Activity theory and learning at work. In M. Malloch, L. Cairns, & K. Evans (Eds.), *The SAGE Handbook of Workplace Learning* (pp. 86-104). Retrieved from http://sk.sagepub.com/reference/hdbk_workplacelearning. https://doi.org/10.4135/9781446200940

Engeström, Y. (2011b). From design experiments to formative interventions. *Theory & Psychology, 21*(5), 598-628. https://doi.org/10.1177/0959354311419252

Engeström, Y. (2016). From well-bounded ethnographies to intervening in mycorrhizae activities. *Organization Studies, 27*(12), 1783-1793. https://doi.org/10.1177/0170840606071898

Engeström, Y. (2018). Expansive learning: towards an activity-theoretical reconceptualization. In K. Illeris (Ed.), *Contemporary Theories of Learning: Learning Theorists ... in Their Own Words* (Second ed., pp. 46-65). Milton, UK: Taylor & Francis Group. Retrieved from

http://ebookcentral.proquest.com/lib/aut/detail.action?docID=5323092

Engeström, Y., Engeström, R., & Karkkainen. (1995). Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities. *Learning and Instruction, 5*, 319-336.

Engeström, Y., & Glăveanu, V. (2012). On third generation Activity Theory: Interview with Yrjö Engeström. *Europe's Journal of Psychology, 8*(4). https://doi.org/10.5964/ejop.v8i4.555

Engeström, Y., Kajamaa, A., Lahtinen, P., & Sannino, A. (2015). Toward a Grammar of Collaboration. *Mind, Culture, and Activity, 22*(2), 92-111. https://doi.org/10.1080/10749039.2015.1024326

Engeström, Y., Miettinen, R., & Punamäki, R. L. (Eds.). (1999). *Perspectives on activity theory.* Cambridge: Cambridge University Press.

Engeström, Y., Nummijoki, J., & Sannino, A. (2012). Embodied germ cell at work: Building an expansive concept of physical mobility in home care. *Mind, Culture, and Activity, 19*(3), 287-309. https://doi.org/10.1080/10749039.2012.688177

Engeström, Y., Pasanen, A., Toiviainen, H., & Haavisto, V. (2005). Expansive learning as collaborative concept formation at work. In K. Yamazumi, Y. Engeström, H. Daniels (Eds.). *New learning challenges: Going beyond the industrial age system of school and work.* (pp. 47-77). Japan: Kansai University Press.

Engeström, Y., Puonti, A., & Seppanen, L. (2003). Spatial and temporal expansion of the object as a challenge for reorganizing work. In D. Nicolini, S. Gherardi, & D. Yanow (Eds.), *Knowing in Organisations: A Practice-based Approach* (pp. 151-186). Armonk, New York: M.E. Sharpe, Inc.

Engeström, Y., & Sannino, A. (2010). Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review, 5*(1), 1-24. https://doi.org/10.1016/j.edurev.2009.12.002

Engeström, Y., & Sannino, A. (2011). Discursive manifestations of contradictions in organizational change efforts. *Journal of Organizational Change Management, 24*(3), 368-387. https://doi.org/10.1108/09534811111132758

Engeström, Y., & Sannino, A. (2012). Concept Formation in the Wild. *Mind, Culture, and Activity, 19*(3), 201-206. https://doi.org/10.1080/10749039.2012.690813

Engeström, Y., & Sannino, A. (2016). Expansive learning on the move: Insights from ongoing research / El aprendizaje expansivo en movimiento: aportaciones de la investigación en curso. *Infancia y Aprendizaje, 39*(3), 401-435. https://doi.org/10.1080/02103702.2016.1189119

Engeström, Y., Sannino, A., & Virkkunen, J. (2014). On the methodological demands of formative interventions. *Mind, Culture, and Activity, 21*(2), 118-128.

https://doi.org/10.1080/10749039.2014.891868

Falcous, M., & McLeod, C. (2012). Anyone for tennis? Sport, class and status in New Zealand. *New Zealand Sociology 27*(1), 13-30.

Farrow, D., Reid, M., Buszard, T., & Kovalchik, S. (2017). Charting the development of sport expertise: challenges and opportunities. *International Review of Sport and Exercise Psychology, 11*(1), 238-257. https://doi.org/10.1080/1750984x.2017.1290817

Feldman, B. (2007). *Meat Market: Inside the smash-mouth world of college football recruiting*. New York, NY: Diversion Books.

Fenwick, T. (2011). Contradiction and expansion: Understanding Cultural Historical Activity Theory. In T. Fenwick, R. Edwards, & P. Sawchuk (Eds.), *Emerging approaches in educational research: Tracing the socio-material*. London: Routledge. Retrieved from https://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b12340042&site=eds-live

Fogelberg, D., & Frauwirth, S. (2010). A complexity science approach to occupation: Moving beyond the individual. *Journal of Occupational Science, 17*(3), 131-139. https://doi.org/10.1080/14427591.2010.9686687

Fraser-Thomas, J. L., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster positive youth development. *Physical Education and Sport Pedagogy, 10*(1), 19-40. https://doi.org/10.1080/1740898042000334890

Frey, J. H., & Eitzen, S. D. (1991). Sport and Society. *Annual Review of Sociology, 17*, 503-522.

Garcia, J., Ibanez, S. J., Canadas, M., & Antunez, A. (2013). Complex system theory in team sports: Example in 5 on 5 basketball contest. *Revista de Psicologia del Deporte, 22*(1), 209-213.

Gibson, J. J. (1986). *The ecological approach to visual perception.* Retrieved from https://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b10969299&site=eds-live

Gidley, J. M. (2010). Globally scanning for “Megatrends of the Mind”: Potential futures of futures thinking. *Futures, 42*(10), 1040-1048. https://doi.org/10.1016/j.futures.2010.08.002

Gidley, J. M. (2016). *Postformal education: A philosophy for complex futures* (Vol. 3). Switzerland: Springer International Publishing

Gilstrap, D. (2009). Collective case study method and fractal geometry: Intstrumental and instrinsic cases in organizational research. *Emergence: Complexity and Organization, 11*(4), 1-14.

Glazier, P. S. (2010). Game, set and match? Substantive issues and future directions in performance analysis. *Sports Medicine, 40*(8), 625-634. https://doi.org/10.2165/11534970-000000000-00000

Goldsberry, K. (2019). *Sprawlball: A visual tour of the new era of the NBA*. New York, NY: Houghton Mifflin Harcourt.

Gréhaigne, J.F., & Godbout, P. (2014). Dynamic Systems Theory and Team Sport Coaching. *Quest, 66*(1), 96-116. https://doi.org/10.1080/00336297.2013.814577

Grehaigne, J.F., Richard, J.F., & Griffin, L. (2005). *Teaching and learning team sports and games*. New York, NY: Routledge Falmer.

Haapasaari, A., Engeström, Y., & Kerosuo, H. (2014). The emergence of learners' transformative agency in a Change Laboratory intervention. *Journal of Education and Work, 29*(2), 232-262. https://doi.org/10.1080/13639080.2014.900168

Hager, P., & Hodkinson, P. (2009). Moving beyond the metaphor of transfer of learning. *British Educational Research Journal, 35*(4), 619-638. https://doi.org/10.1080/01411920802642371

Haggis, T. (2013). 'Knowledge Must Be Contextual': Some possible implications of complexity and dynamic systems theories for educational research. *Educational Philosophy and Theory, 40*(1), 158-176. https://doi.org/10.1111/j.1469-5812.2007.00403.x

Hardman, J. (2008). Researching pedagogy: An Activity Theory approach. *Journal of Education, 45*, 65-96.

Harrison, C. K., Lawrence, S. M., & Bukstein, S. J. (2011). White college students' explanations of White (and Black) athletic performance: A qualitative investigation of White college students. *Sociology of Sport Journal, 28*, 347-361.

Hartmann, D., & Kwauk, C. (2011). Sport and Development. *Journal of Sport and Social Issues, 35*(3), 284-305. https://doi.org/10.1177/0193723511416986

Harvey, S., & Jarrett, K. (2013). A review of the game-centred approaches to teaching and coaching literature since 2006. *Physical Education and Sport Pedagogy, 19*(3), 278-300. https://doi.org/10.1080/17408989.2012.754005

Harwood, C., & Knight, C. (2009). Stress in youth sport: A developmental investigation of tennis parents. *Psychology of Sport and Exercise, 10*(4), 447-456. https://doi.org/10.1016/j.psychsport.2009.01.005

Herring, C. (2017, May 19, 2017). The Beautiful Chaos of the Warriors' Offense [Web page]. *FiveThirtyEight*. Retrieved from https://fivethirtyeight.com/features/the-beautiful-chaos-of-the-warriors-offense/

Hetherington, L. (2013). Complexity thinking and methodology: The potential of 'complex case study' for educational research. *Complicity, 10*(1/2), 71-85.

Hodges, N. J., & Franks, I. M. (2002). Modelling coaching practice: The role of instruction and demonstration. *Journal of Sports Sciences, 20*(10), 793-811. https://doi.org/10.1080/026404102320675648

Hokowhitu, B. (2004). Tackling Maori masculinity: A colonial genealogy of savagery and sport. *The Contemporary Pacific, 16*(2), 259-284. https://doi.org/10.1353/cp.2004.0046

Holbrook, T., & Pourchier, N. M. (2014). Collage as analysis. *Qualitative Inquiry, 20*(6), 754-763. https://doi.org/10.1177/1077800414530260

Holt, N. L., Tamminen, K. A., Black, D. E., Sehn, Z. L., & Wall, M. P. (2008). Parental involvement in competitive youth sport settings. *Psychology of Sport and Exercise, 9*(5), 663-685. https://doi.org/10.1016/j.psychsport.2007.08.001

Horton, P. (2012). Pacific Islanders in global rugby: The changing currents of sports migration. *The International Journal of the History of Sport, 29*(17), 2388-2404. https://doi.org/10.1080/09523367.2012.746834

Hungwe, K. (2016). A case study of workers' development in a technologically changing work Activity. *Mind, Culture, and Activity, 24*(2), 157-174. https://doi.org/10.1080/10749039.2016.1237528

Hutchins, B. (2016). Tales of the digital sublime. *Convergence: The International Journal of Research into New Media Technologies, 22*(5), 494-509. https://doi.org/10.1177/1354856515587163

Hutchins, E. (2012). Concepts in practice as sources of order. *Mind, Culture, and Activity, 19*(3), 314-323. https://doi.org/10.1080/10749039.2012.694006

Jackson, A. Y., & Mazzei, L. A. (2012). *Thinking with theory in qualitative research: Viewing data across multiple perspectives*. New York: Routledge.

Jackson, A. Y., & Mazzei, L. A. (2013). Plugging one text into another. *Qualitative Inquiry, 19*(4), 261-271. https://doi.org/10.1177/1077800412471510

Jenkins, S. (2017). The deconstruction and reconstruction of sports coaching: An interview with Professor Robyn Jones. *International Journal of Sports Science & Coaching, 12*(4), 413-420. https://doi.org/10.1177/1747954117718019

Johnson, E. S. (2008). Ecological systems and complexity theory: Towards an alternative model of accountability. *Complicity: An International Journal of Complexity and Education, 5*(1), 1-10.

Johnson, M. (2007). *The meaning of the body: Aesthetics of human understanding.* Chicago: The University of Chicago Press.

Jones, R. L. (2007). Coaching redefined: An everyday pedagogical endeavour. *Sport, Education and Society, 12*(2), 159-173. https://doi.org/10.1080/13573320701287486

Jones, R. L. (2016). Dilemmas, maintaining "face," and paranoia. *Qualitative Inquiry, 12*(5), 1012-1021. https://doi.org/10.1177/1077800406288614

Jones, R. L. (Ed.). (2006). *The sports coach as educator: Re-conceptualising sports coaching*.

New York, NY: Routledge.

Jones, R. L., Armour, K. M., & Potrac, P. (2004). *Sports coaching cultures: From practice to theory*. London: Routledge.

Jones, R. L., Bailey, J., & Thompson, A. (2013). Ambiguity, noticing and orchestration: Further thoughts on managing the complex coaching context. In P. Potrac, *Routledge Handbook of Sports Coaching*. ProQuest Ebook Central: Routledge. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=1143893.

Jones, R. L., Edwards, C., & Viotto Filho, I. A. T. (2014). Activity theory, complexity and sports coaching: An epistemology for a discipline. *Sport, Education and Society, 21*(2), 200-216. https://doi.org/10.1080/13573322.2014.895713

Jones, R. L., & Ronglan, L. T. (2017). What do coaches orchestrate? Unravelling the 'quiddity' of practice. *Sport, Education and Society, 23*(9), 905-915. https://doi.org/10.1080/13573322.2017.1282451

Jones, R. L., & Turner, P. (2006). Teaching coaches to coach holistically: Can Problem-Based Learning (PBL) help? . *Physical Education and Sport Pedagogy, 2*, 181-202.

Jones, R. L., & Wallace, M. (2005). Another bad day at the training ground: Coping with ambiguity in the coaching context. *Sport, Education and Society, 10*(1), 119-134. https://doi.org/10.1080/1357332052000308792

Jowett, S., & Clark-Carter, D. (2006). Perceptions of empathic accuracy and assumed similarity in the coach-athlete relationship. *British Journal of Social Psychology, 45*(3), 617-637. https://doi.org/10.1348/014466605X58609

Jowett, S., & Cockerill, I. M. (2003). Olympic medallists' perspective of the athlete–coach relationship. *Psychology of Sport and Exercise, 4*(4), 313-331. https://doi.org/10.1016/s1469-0292(02)00011-0

Jowett, S., & Poczwardowski, A. (2007). Understanding the coach-athlete relationship. In S. Jowett & D. Lavallee (Eds.), *Social Psychology in Sport* (pp. 3-14): Human Kinetics.

Keegan, R., Spray, C., Harwood, C., & Lavallee, D. (2010). The Motivational atmosphere in youth sport: Coach, parent, and peer influences on motivation in specializing sport participants. *Journal of Applied Sport Psychology, 22*(1), 87-105. https://doi.org/10.1080/10413200903421267

Keidel, R. W. (2014). Team sports metaphors in perspective. *Organizational Dynamics, 43*(4), 294-302. https://doi.org/10.1016/j.orgdyn.2014.09.006

Kelly, P., & Hickey, C. (2009). Professional identity in the global sports entertainment industry. *Journal of Sociology, 46*(1), 27-44. https://doi.org/10.1177/1440783309337671

Kerr, R. (2018). The role of science in the practice of talent identification: A case study from gymnastics in New Zealand. *Sport in Society, 22*(9), 1589-1603.

https://doi.org/10.1080/17430437.2018.1435032

Kidd, B. (2008). A new social movement: Sport for development and peace. *Sport in Society, 11*(4), 370.

Kidman, L. (2001). *Developing Decision Makers: An Empowerment Approach to Coaching*. Christchurch, New Zealand: Innovative Print Communications Ltd.

Kidman, L. (2005). *Athlete-Centred Coaching*. Christchurch, New Zealand: Innovative Print Communications Ltd.

Kidman, L., & Hanrahan, S. J. (2011). *The coaching process: A practical guide to becoming an effective sports coach*: Routledge.

Kidman, L., & Lombardo, B. J. (2010). TGfU and humanistic coaching. In J. Butler & L. Griffin (Eds.), *More Teaching Games for Understanding: Moving globally* (pp. 171-186). Champaigne, IL: Human Kinetics.

Kirk, D., & MacPhail, A. (2002). Teaching games for understanding and situated learning: Rethinking the Bunker-Thorpe model. *Journal of Teaching in Physical Education, 21*, 177-192.

Kitchin, R. (2014). Big Data, new epistemologies and paradigm shifts. *Big Data & Society, 1*(1). https://doi.org/10.1177/2053951714528481

Kohe, G. Z., & Purdy, L. G. (2018). Analytical attractions and the techno-continuum: Conceptualising data obsessions and consequences in elite sport. *Sport, Education and Society, 24*(7), 742-755. https://doi.org/10.1080/13573322.2018.1467398

Krause, J., & Pim, R. L. (2002). *Coaching basketball*: Contemporary Books. Retrieved from https://books.google.co.nz/books?id=xdbtAAAAMAAJ

Kubatko, J., Oliver, D., Pelton, K., & Rosenbaum, D. T. (2007). A starting point for analyzing Basketball Statistics. *Journal of Quantitative Analysis in Sports, 3*(3). https://doi.org/10.2202/1559-0410.1070

Kuhn, L., Woog, R., & Salner, M. (2011). Utilizing complexity for epistemological development. *World Futures, 67*(4-5), 253-265. https://doi.org/10.1080/02604027.2011.585886

Lauer, L., Gould, D., Roman, N., & Pierce, M. (2010). Parental behaviours that affect junior tennis player development. *Psychology of Sport and Exercise, 11*(6), 487-496. https://doi.org/10.1016/j.psychsport.2010.06.008

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Leigh Star, S. (2010). This is not a boundary object: Reflections on the origin of a concept. *Science, Technology, & Human Values, 35*(5), 601-617. https://doi.org/10.1177/0162243910377624

Leontiev, A. (1978). *Activity, personality, and consciousness,* Englewoods Cliffs: Prentice Hall.

Light, R., & Fawns, R. (2003). Knowing the game: Integrating speech and action in games teaching through TGfU. *Quest, 55*(2), 161-176. https://doi.org/10.1080/00336297.2003.10491797

Light, R., & Kirk, D. (2000). High school rugby, the body and the reproduction of hegemonic masculinity. *Sport, Education and Society, 5*(2), 163-176. https://doi.org/10.1080/713696032

Light, R., & Nash, M. (2006). Learning and identity in overlapping communities of practice: Surf club, school and sports clubs. *The Australian Educational Researcher, 33*(1), 75-94.

Light, R. L. (2011). Opening up learning theory to social theory in research on sport and physical education through a focus on practice. *Physical Education and Sport Pedagogy, 16*(4), 369-382. https://doi.org/10.1080/17408989.2010.535197

Light, R. L., Harvey, S., & Mouchet, A. (2012). Improving 'at-action' decision-making in team sports through a holistic coaching approach. *Sport, Education and Society, 19*(3), 258-275. https://doi.org/10.1080/13573322.2012.665803

Lombardo, B. J. (1987). *The humanistic coach: From theory to practice*. Virginia: Thomas.

Lorenzo, A., Borras, P. J., Sanchez, J. M., Jimenez, S., & Sampedro, J. (2009). Career transition from junior to senior in basketball players. *Revista de Psicologia del Deporte, 19*(3), 309-312.

Lorimer, R., & Jowett, S. (2009). Empathic accuracy in coach–athlete dyads who participate in team and individual sports. *Psychology of Sport and Exercise, 10*(1), 152-158. https://doi.org/10.1016/j.psychsport.2008.06.004

Lorimer, R., & Jowett, S. (2009). Empathic accuracy, meta-perspective, and satisfaction in the coach-athlete relationship. *Journal of Applied Sport Psychology, 21*(2), 201-212. https://doi.org/10.1080/10413200902777289

Lorimer, R., & Jowett, S. (2010). The influence of role and gender in the empathic accuracy of coaches and athletes. *Psychology of Sport and Exercise, 11*(3), 206-211. https://doi.org/10.1016/j.psychsport.2009.12.001

Lucey, P., Bialkowski, Carr, P., Yue, Y., & Matthews, I. (2014, February 28-March 1). *"How to get an open shot": Analyzing team movement in basketball using tracking data*. presented at the meeting of the 6th Annual MIT Sloan Sports Analytics Conference, Hynes Convention Center.

Luke, A., Laaro, R. M., Bergeron, M. F., Keyser, L., Benjamin, H., Brenner, J., . . . Smith, A. (2011). Sports-related injuries in youth athletes: Is overscheduling a Risk Factor? *Clinical Journal of Sports Medicine, 21*(4), 307-314.

Lund, O., Ravn, S., & Christensen, M. K. (2013). Jumping together: Apprenticeship learning among elite trampoline athletes. *Physical Education and Sport Pedagogy, 19*(4), 383-397.

https://doi.org/10.1080/17408989.2013.769508

Lupton, D., & Williamson, B. (2017). The datafied child: The dataveillance of children and implications for their rights. *New Media & Society, 19*(5), 780-794. https://doi.org/10.1177/1461444816686328

Lyle, J. (2002). *Sports coaching concepts: A framework for coaching behaviour*. New York, NY: Routledge.

Lyle, J. (2018). Reflecting on the development of a conceptual framework for sport coaching. *International Sport Coaching Journal, 5*(1), 90-98. https://doi.org/10.1123/iscj.2017-0085

Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences, 21*(11), 883-904. https://doi.org/10.1080/0264041031000140374

Mahiri, J., & Van Rheenen, D. (2010). *Out of bounds: When scholarship athletes become academic scholars*. New York, NY: Peter Lang Publishing, Inc.

Mason, M. (2013). Complexity theory and the philosophy of education. *Educational Philosophy and Theory, 40*(1), 4-18. https://doi.org/10.1111/j.1469-5812.2007.00412.x

Maymin, A. Z., Maymin, P. Z., & Shen, E. (2013). NBA chemistry: Positive and negative synergies in basketball. *International Journal of Computer Science, 12*(2), 4-23.

McCallum, J. (2006). *Seven Seconds or Less: My Season on the Bench with the Runnin' and Gunnin' Phoenix Suns*: Touchstone. Retrieved from https://books.google.co.nz/books?id=LPvI4dWZXssC

McDonald, B. (2014). Developing 'home-grown' talent: Pacific island rugby labour and the Victorian rugby union. *The International Journal of the History of Sport, 31*(11), 1332-1344. https://doi.org/10.1080/09523367.2014.923839

McMurtry, A. (2006). Linking complexity with cultural historical activity theory. *International Journal of Research & Method in Education, 29*(2), 209-219. https://doi.org/10.1080/17437270600891655

Messner, M. (2016). Boyhood, organized sports, and the construction of masculinities. *Journal of Contemporary Ethnography, 18*(4), 416-444. https://doi.org/10.1177/089124190018004003

Messner, M. A. (2007). When bodies are weapons. *Peace Review, 4*(3), 28-31. https://doi.org/10.1080/10402659208425661

Millington, B., & Millington, R. (2015). 'The Datafication of Everything': Toward a sociology of sport and Big Data. *Sociology of Sport Journal, 32*(2), 140-160. https://doi.org/10.1123/ssj.2014-0069

Morey, D., & Hinkie, S. (2011). Moneyball and the Houston Rockets. Retrieved from http://grantland.com/features/moneyball-houston-rockets/

Mouchet, A. (2005). Subjectivity in the articulation between strategy and tactics in team sports: an example in rugby *Italian Journal of Sport Sciences, 12*, 24-33.

Murphy, E., & Dingwall, R. (2007). Informed consent, anticipatory regulation and ethnographic practice. *Social Science & Medicine, 65*(11), 2223-2234. https://doi.org/10.1016/j.socscimed.2007.08.008

Nasir, N. S., & Hand, V. (2008). From the court to the classroom: Opportunities for engagement, Learning, and Identity in Basketball and Classroom Mathematics. *Journal of the Learning Sciences, 17*(2), 143-179. https://doi.org/10.1080/10508400801986108

Nasir, N. S., & Cooks, J. (2009). Becoming a hurdler: How learning settings afford identities. *Anthropology & Education Quarterly, 40*(1), 41-61. https://doi.org/10.1111/j.1548-1492.2009.01027.x

Newell, K. M. (1986). Constraints on the development of coordination. In M. G. Wade & H. T. A. Whiting (Eds.), *Motor development in children. Aspects of coordination and control* (pp. 341–360). Dordrecht, The Netherlands: Martinus Nijhoff.

Nummijoki, J., Engeström, Y., & Sannino, A. (2018). Defensive and expansive cycles of learning: A study of home care encounters. *Journal of the Learning Sciences, 27*(2), 224-264. https://doi.org/10.1080/10508406.2017.1412970

NZSSSC. (2019). *SCHOOL SPORT NZ Census Data - By Sport (National Analysis By Year)*. Retrieved from http://www.nzsssc.org.nz/School-Sport-NZ-Census-Data/School-Sport-NZ-Census-Reports

O'Donoghue, P., & Mayes, A. (2013). Performance analysis, feedback and communication in coaching. In T. McGarry, P. O'Donoghue, & A. J. d. E. Sampaio (Eds.), *Routledge handbook of sports performance analysis*: Routledge. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b12927594&site=eds-live

O'Reilly, K. (2009). *Key concepts in ethnography.* SAGE. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b11664101&site=eds-live

Oates, T. P. (2017). Selling streetball: Racialized space, commercialized spectacle, and playground basketball. *Critical Studies in Media Communication, 34*(1), 94-100. https://doi.org/10.1080/15295036.2016.1266681

Oliver, D. (2004). *Basketball on paper: Rules and tools for performance analysis*. Dulles, Virginia: Potamic Books, Inc.

Osberg, D., & Biesta, G. (2010). The end/s of education: complexity and the conundrum of the inclusive educational curriculum. *International Journal of Inclusive Education, 14*(6), 593-607. https://doi.org/10.1080/13603110802530684

Ovens, A., & Godber, K. (2013). Affordance networks and the complexity of learning. In A. Ovens, T. Hopper, & J. Butler (Eds.), *Complexity thinking in Physical Education: Reframing curriculum, pedagogy and research* (pp. 55-66). New York, NY: Routledge.

Ovens, A., Hopper, T., & Butler, J. I. (2013). *Complexity thinking and physical education.* New York, NY: Routledge.

Ovens, A., & Smith, W. (2006). Skill: Making sense of a complex concept. *Journal of Physical Education New Zealand, 39*(1), 72-82.

Passos, P., Araújo, D., Davids, K., & Shuttleworth, R. (2008). Manipulating constraints to train decision making in rugby union. *International Journal of Sports Science & Coaching, 3*(1), 125-140. https://doi.org/10.1260/174795408784089432

Pauleen, D. J. (2017). Dave Snowden on KM and big data/analytics: Interview with David J. Pauleen. *Journal of Knowledge Management, 21*(1), 12-17. https://doi.org/10.1108/jkm-08-2016-0330

Phillips, E., Davids, K., Renshaw, I., & Portus, M. (2010). Expert performance in sport and the dynamics of talent development. *Sports Medicine, 40*(4), 271-283. https://doi.org/10.2165/11319430-000000000-00000

Pill, S. (2014). Informing Game Sense pedagogy with constraints-led theory for coaching in Australian football. *Sports Coaching Review, 3*(1), 46-62. https://doi.org/10.1080/21640629.2014.890778

Pinder, R. A., Davids, K., Renshaw, I., & Araujo, D. (2011). Representative learning design and functionality of research and practice in sport. *Journal of Sport and Exercise Psychology, 33*(1), 146-155. https://doi.org/10.1123/jsep.33.1.146

Pinder, R. A., Renshaw, I., & Davids, K. (2009). Information–movement coupling in developing cricketers under changing ecological practice constraints. *Human Movement Science, 28*(4), 468-479.

Polkinghorne, D. E. (1995). Narrative configuration in qualitative analysis. *International Journal of Qualitative Studies in Education, 8*(1), 5-23. https://doi.org/10.1080/0951839950080103

Pringle, R. (2013). Examining the justifications for government investment in high performance sport: A critical review essay. *Annals of Leisure Research, 4*(1), 58-75. https://doi.org/10.1080/11745398.2001.10600891

Puerzer, R. J. (2002). From scientific baseball to sabermetrics: Professional baseball as a reflection of engineering and management in society. *NINE: A Journal of Baseball History and Culture, 11*(1), 34-48. https://doi.org/10.1353/nin.2002.0042

Quealy, K., & Hoffman, B. (2019). The ‘Dumb Choice’ that James Harden, Stephen Curry and the rest of the N.B.A. increasingly avoid”: The 2-point shot. *New York Times*. Retrieved from https://www.nytimes.com/interactive/2019/04/30/upshot/harden-rockets-curry-warriors-

three-pointers.html

Readdy, T., Zakrajsek, R., & Raabe, J. (2016). Real-world experiences of the coaching pathos: Orchestration of NCAA division I sport. *The Sport Psychologist, 30*(2), 167-178. https://doi.org/10.1123/tsp.2015-0054

Reich, B. J., Hodges, J. S., Carlin, B. P., & Reich, A. M. (2006). A spatial analysis of basketball shot chart data. *The American Statistician, 60*(1), 3-12. https://doi.org/10.1198/000313006x90305

Renshaw, I., Araújo, D., Button, C., Chow, J. Y., Davids, K., & Moy, B. (2015). Why the constraints-led approach is not Teaching Games for Understanding: A clarification. *Physical Education and Sport Pedagogy, 21*(5), 459-480. https://doi.org/10.1080/17408989.2015.1095870

Renshaw, I., Davids, K., Shuttleworth, R., & Chow, J. Y. (2009). Insights from ecological psychology and dynamical systems theory can underpin a philosophy of coaching. *International Journal of Sport Pscyhology, 40*(4), 540-602.

Rhoden, W. C. (2006). *Forty Million Dollar Slaves: The Rise, Fall, and Redemption of the Black Athlete.* Crown Publishers.

Ricca, B. (2012). Beyond teaching methods: A complexity approach. *Complicity, 9*(2), 31-51.

Rink, J. (2010). TGfU: Celebrations and cautions. In J. Butler & L. Griffin (Eds.), *More teaching games for understanding: Moving globally* (pp. 33-48). Champaign, IL: Human Kinetics.

Rosiek, J. L. (2013). Pragmatism and post-qualitative futures. *International Journal of Qualitative Studies in Education, 26*(6), 692-705. https://doi.org/10.1080/09518398.2013.788758

Sam, M. P. (2009). The public management of sport. *Public Management Review, 11*(4), 499-514. https://doi.org/10.1080/14719030902989565

Sam, M. P. (2015). Sport policy and transformation in small states: New Zealand's struggle between vulnerability and resilience. *International Journal of Sport Policy and Politics, 7*(3), 407-420. https://doi.org/10.1080/19406940.2015.1060715

Sampaio, J., Lago, C., & Drinkwater, E. J. (2010). Explanations for the United States of America's dominance in basketball at the Beijing Olympic Games (2008). *Journal of Sports Sciences, 28*(2), 147-152. https://doi.org/10.1080/02640410903380486

Sannino, A. (2011). Activity theory as an activist and interventionist theory. *Theory & Psychology, 21*(5), 571-597. https://doi.org/10.1177/0959354311417485

Sannino, A. (2015). The principle of double stimulation: A path to volitional action. *Learning, Culture and Social Interaction, 6*, 1-15. https://doi.org/10.1016/j.lcsi.2015.01.001

Sannino, A., Daniels, H., & Gutierrez, K. D. (Eds.). (2009). *Leading and Expanding with Activity Theory*. New York: Cambridge University Press.

Sannino, A., Engeström, Y., & Lahikainen, J. (2016). The dialectics of authoring expansive

learning: Tracing the long tail of a Change Laboratory. *Journal of Workplace Learning, 28*(4), 245-262. https://doi.org/10.1108/jwl-01-2016-0003

Sannino, A., Engeström, Y., & Lemos, M. (2016). Formative interventions for expansive learning and transformative agency. *Journal of the Learning Sciences, 25*(4), 599-633. https://doi.org/10.1080/10508406.2016.1204547

Santos, S., Jones, R. L., & Mesquita, I. (2013). Do coaches orchestrate? The working practices of elite Portuguese coaches. *Research Quarterly for Exercise and Sport, 84*(2), 263-272. https://doi.org/10.1080/02701367.2013.784722

Saury, J., & Durand, M. (1998). Practical knowledge in expert coaches: On-site study of coaching in sailing. *Research quarterly for exercise and sport, 69*(3), 254-266. https://doi.org/10.1080/02701367.1998.10607692

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Kindle edition

Sen, G. (2012). Wine intertwined with education and complexity theory. *Complicity, 9*(2), 69-72.

Skinner, B. (2012). The problem of shot selection in basketball. *PLoS One, 7*(1), 1-8. https://doi.org/10.1371/journal.pone.0030776

Smith, W. (2013). Intentionality, coordination dynamics and the complexity of human movement. In A. Ovens, T. Hopper, & J. Butler (Eds.), *Complexity thinking in Physical Education: Reframing curriculum, pedagogy and research* (pp. 67-92). New York, NY: Routledge.

Snowden, D. (2005). Strategy in the context of uncertainty. *Handbook of Business Strategy, 6*(1), 47-54. https://doi.org/10.1108/08944310510556955

Snowden, D. J., & Boone, M. E. (2007). A leader's framework for decision making. *Harvard Business Review, 85*(11), 68-76.

Sperber, M., & Minjares, V. (2015). Millionaire college coaches and the schools that pay them. In E. Comeaux (Ed.), *Introduction to Intercollegiate Athletics* (pp. 163-176). Baltimore, MD: John Hopkins Press.

Sport New Zealand. (2012). *New Zealand Community Sport Coaching Plan: 2012-2020*. Retrieved from https://sportnz.org.nz/assets/Uploads/attachments/managing-sport/coaching/New-Zealand-Community-Sport-Coaching-Plan-20122020.pdf

Sport New Zealand. (2015). *School Sport Futures Project*: Retrieved from https://sportnz.org.nz/assets/Uploads/attachments/managing-sport/young-people/School-Sport-Futures-Project-Final-Report.pdf

Springgay, S., Irwin, R. L., & Kind, S. W. (2016). A/r/tography as living inquiry through art and text. *Qualitative Inquiry, 11*(6), 897-912. https://doi.org/10.1177/1077800405280696

St. Pierre, E. A. (2012). Another postmodern report on knowledge: Positivism and its others. *International Journal of Leadership in Education, 15*(4), 483-503.

https://doi.org/10.1080/13603124.2012.696710

St. Pierre, E. A. (2013). The posts continue: Becoming. *International Journal of Qualitative Studies in Education, 26*(6), 646-657. https://doi.org/10.1080/09518398.2013.788754

Stake, R. E. (2006). *Multiple case study analysis.* Guilford Press. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=362572

Stake, R. E. (2010). *Qualitative research: studying how things work*. Guilford Press. Retrieved from http://ebookcentral.proquest.com/lib/aut/detail.action?docID=479606

Sterling, S. (2010). Transformative learning and sustainability: Sketching the conceptual ground. *Learning and Teaching in Higher Education, 5*, 17-33.

Stetsenko, A. (2008). From relational ontology to transformative activist stance on development and learning: Expanding Vygotsky's (CHAT) project. *Cultural Studies of Science Education, 3*(2), 471-491. https://doi.org/10.1007/s11422-008-9111-3

Stetsenko, A. (2012). Personhood: An activist project of historical becoming through collaborative pursuits of social transformation. *New Ideas in Psychology, 30*, 144-153. https://doi.org/10.1016/j.newideapsych.20

Stetsenko, A., & Arievitch, I. M. (2014). Vygotskian collaborative project of social transformation: History, politics, and practice in knowledge construction. In *Collaborative projects: An interdisciplinary study.* (pp. 217-238). Leiden, Netherlands: E J Brill.

Stone, J., Perry, W., & Darley, J. M. (2010). "White Men Can't Jump": Evidence for the perceptual confirmation of racial stereotypes following a basketball game. *Basic and Applied Social Psychology, 19*(3), 291-306. https://doi.org/10.1207/s15324834basp1903_2

Sumara, D., & Davis, B. (2006). Correspondence, coherence, complexity: Theories of learning and their influences on processes of literary composition. *English Teaching: Practice and Critique, 5*(2), 34-55.

Taylor, P. (1995). THE OLDEST PICK IN THE BOOK: THE DEFENSE USUALLY KNOWS IT'S COMING, BUT THE WELL-EXECUTED PICK-AND-ROLL IS STILL PRO BASKETBALL'S MOST DEPENDABLE PLAY. *Sports Illustrated*. Retrieved from https://vault.si.com/vault/1995/11/13/the-oldest-pick-in-the-book-the-defense-usually-knows-its-coming-but-the-well-executed-pick-and-roll-is-still-pro-basketballs-most-dependable-play

Toiviainen, H., & Engeström, Y. (2009). Knowledge, values, and educational policy: A critical perspective. In H. Daniels, H. Lauder, & J. Porter (Eds.), *Critical perspectives on education* (pp. 95-109). London: Routledge.

Tsoukas, H., & Hatch, M. J. (2001). Complex thinking, complex practice: The case for a narrative

approach to organisational complexity. *Human Relations, 54*(8), 979-1013.

Tulle, E. (2014). Living by numbers: Media representations of sports stars' careers. *International Review for the Sociology of Sport, 51*(3), 251-264. https://doi.org/10.1177/1012690214525157

Uehara, L., Button, C., Falcous, M., & Davids, K. (2014). Contextualised skill acquisition research: A new framework to study the development of sport expertise. *Physical Education and Sport Pedagogy, 21*(2), 153-168. https://doi.org/10.1080/17408989.2014.924495

Van Maanen, J. (1988). *Tales of the field: On writing ethnography.* University of Chicago Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b10847042&site=eds-live

Van Rheenen, D. (2012). Exploitation in college sports: Race, revenue, and educational reward. *International Review for the Sociology of Sport, 48*(5), 550-571. https://doi.org/10.1177/1012690212450218

Varela, F. J., Thompson, E., & Rosch, E. (1993). *The embodied mind: Cognitive science and human experience.* MIT Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b11261158&site=eds-live

Virkkunen, J., Eikeland, O., & Ahonen, H. (2011). Supporting expansive learning through theoretical-genetic reflection in the Change Laboratory. *Journal of Organizational Change Management, 24*(2), 229-243. https://doi.org/10.1108/09534811111119780

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat05020a&AN=aut.b10015449&site=eds-live

Wachsmuth, D., Madden, D. J., & Brenner, N. (2011). Between abstraction and complexity. *City, 15*(6), 740-750. https://doi.org/10.1080/13604813.2011.632903

Whitley, M. A., Forneris, T., & Barker, B. (2014). The reality of evaluating community-based sport and physical activity programs to enhance the development of underserved youth: Challenges and potential strategies. *Quest, 66*(2), 218-232. https://doi.org/10.1080/00336297.2013.872043

Wilco, D. (2019). *How the new 3-point line might affect college basketball*. Retrieved from https://www.ncaa.com/news/basketball-men/article/2019-10-03/how-new-3-point-line-might-affect-college-basketball

Williams, S., & Manley, A. (2014). Elite coaching and the technocratic engineer: Thanking the boys at Microsoft! *Sport, Education and Society, 21*(6), 828-850.

https://doi.org/10.1080/13573322.2014.958816

Wilson, J. (2009). *Inverting the pyramid: The history of soccer tactics*. Kindle version

Wu, S., & Bornn, L. (2017). Modeling offensive player movement in professional basketball. *The American Statistician, 72*(1), 72-79. https://doi.org/10.1080/00031305.2017.1395365

Wylleman, P., & Reints, A. (2010). A lifespan perspective on the career of talented and elite athletes: Perspectives on high-intensity sports. *Scandinavian Journal of Medicine & Science in Sports, 20*(2), 88-94. https://doi.org/10.1111/j.1600-0838.2010.01194.x

Appendices

Appendix A: Ethics Application Approval

AUTEC Secretariat

Auckland University of Technology
D-89, WA505F Level 5 WA Building City Campus
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

12 August 2015

Lynn Kidman
Faculty of Health and Environmental Sciences

Dear Lynn

Ethics Application: **15/271 Tactical learning experiences in New Zealand secondary school boys basketball.**

Thank you for submitting your application for ethical review. I am pleased to confirm that the Auckland University of Technology Ethics Committee (AUTEC) has approved your ethics application for three years until 10 August 2018.

AUTEC wishes to commend the researchers on the quality of their application.

As part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through http://www.aut.ac.nz/researchethics. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 10 August 2018;
- A brief report on the status of the project using form EA3, which is available online through http://www.aut.ac.nz/researchethics. This report is to be submitted either when the approval expires on 10 August 2018 or on completion of the project;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this.

To enable us to provide you with efficient service, we ask that you use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.

All the very best with your research,

Kate O'Connor
Executive Secretary
Auckland University of Technology Ethics Committee

Cc: Vincent Minjares vminjare@aut.ac.nz; Jane Gilbert

Appendix B: Athlete Information Sheet

Appendix B1

Athlete Information Sheet

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

An invitation

My name is Vincent Minjares, I am an international postgraduate student currently undertaking a Doctorate in Philosophy (PhD) at the Auckland University of Technology (AUT). This information sheet details a proposed research study that explores tactical learning experiences in New Zealand secondary school boys' basketball. Please read all the information carefully then consider whether you wish to take part. Participation is completely voluntary. If you decide to take part, you will be asked to sign a consent form. Thank you for your time.

What is the purpose of this research?

The purpose of this research is to conduct a case study of a secondary school boys' basketball team in New Zealand. Tactical learning involves a range of activities on and off the court in relation to strategy and decision-making. Examples include reading the defence, learning team concepts or preparing for an opponent. This research area is valuable to study because it helps us understand the ways in which playing sports challenges us to think critically and solve problems. In this study, I explore how athletes experience these aspects of the game by attempting to tell the story of a full season from within the team itself.

What are the benefits?

Results from this research will aid our understanding of athlete development by helping connect to athletes' experiences. It is hoped that the outcome of the final project will improve delivery from coaches and talent development programmes in New Zealand and around the world. By participating in this research project you will receive a summary of the study findings. Findings may be used for academic journal articles, conference papers, and other publications.

What will happen in this research?

This study uses an approach to research that involves me, the researcher, becoming a part of the team for one year (September 2015 to October 2016) as a volunteer. Being in the team environment will allow me to listen, watch and be immersed in daily team activities, such as meetings, huddles and pre/post-game conversations. To study tactical play, I will also capture video and photo of game play from training and competition. Throughout the study, I will chat with coaches, managers and athletes. Some conversations may include video reflection from moments of game play that participants identify as personally meaningful. The research will also involve conversations with people in the surrounding environment, such as parents, school leaders and coaches of outside teams. In some instances, I will ask permission to audio record conversations. You will be invited to share documents or resources that help me understand

this area. 2-4 members of the team will be profiled in more detail as part of focused case studies, involving more extended observation outside the team.

Why am I invited to participate in this research?
You have been invited because you are an athlete with the basketball team at XXX College.

What are the risks / discomforts?
Having participated on many basketball teams over 25 years, I fully respect the personal nature of teams and recognise that this research involves a significant degree of trust. It is very important that you feel confident to speak and act freely. If there are any aspects of the study which cause you concern because of your cultural, religious or traditional customs or beliefs I will encourage you to inform me. If situations arise (a health issue or unacceptable practice is identified) which does cause you distress, the researcher will engage the support and advice of the AUT Counselling team, or the Executive Secretary of AUTEC.

How will these discomforts and risks be alleviated?
In my role as team volunteer, I will not have any involvement in coaching decisions. I agree not to share confidential information. I agree to respect all personal boundaries. Anything that you share or I observe will not be shared with anyone else. Consent to be part of this research study is voluntary and you can withdraw at any time. At any time you can elect not to share information and to not be audio-recorded. As an athlete, you can choose not to be profiled as an individual case study.

How will privacy be protected?
All records of this study will be kept private. Research records will be kept in a locked file. Data from this study will be retained by AUT University and will be stored for six years and permanently destroyed after this period. Your real name, the name of your school, parents and any participants in the study will not be used in the final written report. Your participation is entirely voluntary and you are free to withdraw from the study at any time. If you withdraw from the study, it may not be possible to destroy all video records of you in game play. However, any information about you will not be used in the study. If you prefer to have your real name used in the study, you can choose to do so in the consent form.

What are the costs of participating in this research?
There are no required financial costs of participation.

What opportunity do I have to consider this invitation?
Please return the signed consent form to me by xx (date). Whether or not you participate will not affect your relations within XXX College or AUT University. In order for this team to be selected as a case study, 2/3 of all athletes must consent to participate.

What do I do if I have concerns about this research?
Any concerns regarding the nature of this project should be notified in the first instance to me or to my principal PhD supervisor, Dr Lynn Kidman. Lynn is a senior lecturer at AUT University

Appendix B3

Coach Information Sheet

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

An invitation

My name is Vincent Minjares, I am an international postgraduate student currently undertaking a Doctorate in Philosophy (PhD) at the Auckland University of Technology (AUT). This information sheet details a proposed research study that explores tactical learning experiences in New Zealand secondary school boys' basketball. Please read all the information carefully then consider whether you wish to take part. Participation is completely voluntary. If you decide to take part, you will be asked to sign a consent form. Thank you for your time.

What is the purpose of this research?

The purpose of this research is to conduct a case study of a secondary school boys' basketball team in New Zealand. Tactical learning involves a range of activities on and off the court in relation to strategy and decision-making. Examples include reading the defence, learning team concepts or preparing for an opponent. This research area is valuable to study because it helps us understand the ways in which playing sports challenges us to think critically and solve problems. In this study, I explore how athletes experience these aspects of the game by attempting to tell the story of a full season from within the team itself.

What are the benefits?

Results from this research will aid our understanding of athlete development by helping researchers, coaches, parents and organisational leaders connect to athletes' experiences. It is hoped that the outcome of the final project will improve delivery from coaches and talent development programmes in New Zealand and around the world. By participating in this research project you will receive a summary of the study findings. Findings may be used for academic journal articles, conference papers, and other publications.

What will happen in this research?

This study uses an approach to research that involves me, the researcher, becoming a part of the team for one year (September 2015 to October 2016) as a volunteer. Being in the team environment will allow me to listen, watch and be immersed in daily team activities, such as meetings, huddles and pre/post-game conversations. To study tactical play, I will also capture video and photo of game play from training and competition. Throughout the study, I will chat with coaches, managers and athletes. Some conversations may include video reflection from moments of game play that participants identify as personally meaningful. The research will also involve conversations with people in the surrounding environment, such as parents, school leaders and coaches of outside teams. In some instances, I will ask permission to audio record conversations. You will be invited to share documents or resources that help the researcher understand this area. 2-4 members of the team will be profiled in more detail as part of focused case studies, involving more extended observation outside the team.

Why am I invited to participate in this research?
You have been invited to participate in this project because you are a coach, manager or staff member with the basketball team at Pakuranga College.

What are the risks / discomforts?
Having participated on many basketball teams over 25 years, I fully respect the personal nature of teams and recognise that this research involves a significant degree of trust. It is very important that you feel confident to speak and act freely. If there are any aspects of the study which cause you concern because of your cultural, religious or traditional customs or beliefs I will encourage you to inform me. If unforeseen circumstances arise (a health issue or unacceptable practice is identified) which does cause you distress, the researchers will engage the support and advice of the AUT Counselling team, or the Executive Secretary of AUTEC.

How will these discomforts and risks be alleviated?
In my role as team volunteer, I will not have any involvement in coaching decisions. I agree not to share confidential information. I agree to respect all personal boundaries. Anything that you share or I observe will not be shared with anyone else. Consent to be part of this research study is voluntary and you can withdraw at any time. At any time you can also elect not to share information and to not be audio-recorded. The organisation and the participants will be confidential and anonymous in the final written report.

How will privacy be protected?
All participants who consent to participate will be considered part of the project. All records of this study will be kept private. Research records will be kept in a locked file. Data from this study will be retained by AUT University and will be stored for six years and permanently destroyed after this period. Your real name and any other identifiable information will not be used in the final written report. Your participation is entirely voluntary and you are free to withdraw from the study at any time. If you withdraw from the study, any information about you will not be used in the study. If you prefer to have your real name used in the study, you can choose to do so in the consent form.

What are the costs of participating in this research?
There are no required financial costs of participation.

What opportunity do I have to consider this invitation?
Please return the signed consent form to me by xx (date). Your participation is entirely voluntary and you are free to withdraw from the study at any time. Whether or not you participate will not affect your relations within Pakuranga College or AUT University. In order for this team to be selected as a case study, 2/3 of all athletes must consent to participate.

What do I do if I have concerns about this research?
Any concerns regarding the nature of this project should be notified in the first instance to me or to my principal PhD supervisor, Dr Lynn Kidman. Lynn is a senior lecturer at AUT University and can be contacted on +61 406234364 or via email lynn.kidman@aut.ac.nz Concerns regarding the conduct of the research should be made to the Executive Secretary - AUTEC, Kate O'Connor, at +64 9 921 9999 extn: 6038 or ethics@aut.ac.nz

Appendix D: Site Access Consent Form

AUT
TE WĀNANGA ARONUI O TĀMAKI MAKAU RAU

Site Access Consent form

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

- I have read and understood the information provided about this research project in the Information Sheet dated 24 August 2015.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes may be taken during training, games and around the squad. Videos and photographs will be used for academic purposes only and will not be published in any form outside of this project without my written permission.
- I understand that a participant can withdraw her/himself or any information that they provide for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If a participant withdraws, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- I give consent to the researcher to have access to Pakuranga College to conduct data collection on site (*please tick one)* Yes ✓ No ○
- I wish to receive a copy of the report from the research (please tick one): Yes ✓ No ○

Principal's signature: .....

Principal's name: MICHAEL WILLIAMS

Sport Director's signature: .....

Sport Director's name: CLIVE DANIELS

Head Coach's signature: .....

Head Coach's name: JOSIAH MAAMA

Contact Details (if appropriate): Date: 16/09/15

.....

.....

Note: The Principal should retain a copy of this form.
Approved by the Auckland University of Technology Ethics Committee on 12 August 2014
AUTEC Reference number 15/271

Appendix E: Athlete (16-20) Consent Form

Appendix A2

Athlete (Age 16-20) Consent form

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

- I have read and understood the information provided about this research project in the Information Sheet dated 25 August 2015.
- I have been able to ask questions and to have them answered.
- I understand that notes may be taken during training, games and around the squad. Notes may also be taken during conversations with me and that they may be audio-recorded.
- I understand that the videos and photographs will be used for academic purposes only and will not be published in any form outside of this project without my written permission.
- I understand that I may withdraw myself, or any information/images/documents that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that it may not be possible to destroy all video images of me in game play. All other relevant information will be destroyed.
- I agree to take part in this research (please tick one): ○Yes ○No
- I consent to my real name being used in this study (please tick one) ○Yes ○No
- I consent to being profiled as part of a focused case study (please tick one) ○Yes ○No
- I wish to receive a copy of the report from the research (please tick one): ○Yes ○No

Athlete's name ……

Athlete's signature……

Parent/Guardian's name ……

Parent/Guardian's name signature……

Contact Details (if appropriate): Date: ……

……

Approved by the Auckland University of Technology Ethics Committee on 12 August 2014
AUTEC Reference number 15/271
Note: The Participant should retain a copy of this form.

Appendix F: Athlete (Under 16) Assent Form

Appendix A1

Athlete (Under 16) Assent form

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

- I have read and understood the information provided about this research project in the Information Sheet dated dd mmmm yyyy.
- I have been able to ask questions and to have them answered.
- I understand that notes may be taken during training, games and around the squad. Notes may also be taken during conversations with me and that they may be audio-recorded.
- I understand that the videos and photographs will be used for academic purposes only and will not be published in any form outside of this project without my written permission.
- I understand that I may withdraw myself, or any information/images/documents that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that it may not be possible to destroy all video images of me in game play. All other relevant information will be destroyed.
- I agree to take part in this research.
- I consent to my real name being used in this study (please tick one) ○Yes ○No
- I consent to being profiled as part of a focused case study (please tick one) ○Yes ○No
- I wish to receive a copy of the report from the research (please tick one): Yes ○ No ○

Athlete's name ……

Athlete's signature……

Contact Details (if appropriate): Date: ……

……

……

Approved by the Auckland University of Technology Ethics Committee on *type the date on which the final approval was granted* ***AUTEC Reference number*** *type the AUTEC reference number*
Note: The Participant should retain a copy of this form.

Appendix G: Athlete (Under 16) Guardian Consent Form

Appendix A4

Under 16 Athlete - Guardian Consent form

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

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- I have read and understood the information provided about this research project in the Information Sheet dated dd mmmm yyyy.
- I have been able to ask questions and to have them answered.
- I understand that notes may be taken during training, games and around the squad. Notes may also be taken during conversations with my child and that they may be audio-recorded.
- I understand that the videos and photographs will be used for academic purposes only and will not be published in any form outside of this project without my written permission.
- I understand that I may withdraw my child and/or myself, or any information/images/documents that we have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- If my child withdraws, I understand that it may not be possible to destroy all video images of him in game play. All other relevant information will be destroyed.
- I agree for my child to take part in this research.
- I consent to my child's real name being used in this study (please tick one) ○Yes ○No
- I consent to my child being profiled as part of a focused case study (please tick one) ○Yes ○No
- I wish for my child to receive a copy of the report from the research (please tick one): Yes ○ No ○

Athlete's name ……

Parent/Guardian's name ……

Parent/Guardian's signature……

Contact Details (if appropriate): Date:……

……

……

***Approved by the Auckland University of Technology Ethics Committee on** type the date on which the final approval was granted **AUTEC Reference number** type the AUTEC reference number*
Note: The Participant should retain a copy of this form.

Appendix H: Conversation Topics

Appendix D

Conversation Topics

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

Athletes

- Descriptions of moments from game play in training and competition
- Reflections on decisions made on the court
- Approaches to learning and improvement
- Beliefs about talent, ability and intelligence
- Perceptions of transition(s) facing self and team
- Outside experiences in basketball and learning
- Descriptions of daily life for son as athlete

Coaches

- Origins of pedagogical approach to coaching
- Approaches to learning and player development
- Descriptions of moments from game play in training and competition
- Perceived factors that influence decision-making and game play for team
- Beliefs about talent, ability and intelligence
- Perceptions of transition(s) facing team

Family Members

- Descriptions of daily life, such as logistics, resources and outside demands
- Beliefs about talent, ability and intelligence
- Perceived factors that influence decision-making
- Perceptions of transition(s) facing team

Significant Others

- Role of officiating in game play
- Patterns in tactical challenges faced across community and region
- Material resources and facility access
- Sport governance – game rules, participation trends, coach development

Appendix I: Observation Protocol

Appendix C

Observation Protocol

Project Title: Tactical learning experiences in New Zealand secondary school boys basketball
Researcher: Vincent Minjares, 021 0255 7932 vminjare@aut.ac.nz
PhD Supervisor: Dr Lynn Kidman, +61 406234364 lynn.kidman@aut.ac.nz

How people will be recruited?

The observed people will be participants who have full information of the project and their parent/caregivers and themselves have signed consent and assent forms. The participants are the athletes and coaches/managers of a secondary school basketball team, including 2-4 individuals who have been selected as part of focused case studies. Participants also include caregivers and significant others who may not be directly involved in the team but have a perspective identified as important to the study. All participants will be recruited through a voluntary consent process.

How people will be informed about the observation?

Before data collection begins, I will present the study to the sports director and head coach of the team in a meeting where they will be afforded an opportunity to ask questions. I will also conduct an information session with the full team, including the coaches/managers, athlete participants and caregivers, where I will present the study and they will be afforded an opportunity to ask questions. I will present an information sheet to all significant others. To establish trust and familiarity, I will be known to the participants of the team as a volunteer.

How people will consent to the observation?

The athletes, coaches, caregivers and significant others will all receive information sheets. Consent and assent forms from all participants will be signed.

What will be observed and what data will be collected?

The researcher will observe the real-time tactical learning experiences of athletes by studying them in their natural environments, both on and off the court. The researcher will achieve this by first collecting data on tactical play, namely the tactical situations, challenges and responses of athletes in both training and competition, such as reading the defence, learning team concepts or preparing for an opponent. This involves capturing data on on-court play itself as well as the interactions and processes that lead into and follow that on-court play. This observation will flow dynamically from on-court to off-court settings, including stoppages in play, huddles, sideline conversations between athlete/coach and team meetings to prepare for an upcoming opponent. Data that deepens the researcher's understanding of team culture, social relationships and goals/aspirations are also relevant athlete learning experiences. However, data is not restricted to the school team training or competition environment. This means that the researcher will also capture data from outside environments that relates to the

athletes' tactical development, such as when playing for a second team or training with a family member. This logic also extends to environments that indirectly relate to the learning environment, such as administrative meetings with school leaders to discuss scheduling or parent meetings to discuss travel logistics.

How the data will be collected?

The data will be collected using the following methods:

- **Reflexive diary.** All observations will be captured in the form of jottings that will be transferred to written reflexive field notes. Observations will focus first on decisions that athletes make in the context of play and how those decisions evolve over time. The researcher will take notes on configurations of play commonly faced, styles of play, patterns in decision-making, and situations that present particularly challenging tactical play. The practice activities themselves, such as coaching pedagogy and sideline behaviour, will also be observed in relation to the actions by the players on the court. This includes coach feedback, instruction, task design, material features of the playing space, and motivational climate of the team. Observations of team meetings/events will provide insight into the off-court environments that influence on-court play. Notes will be take on how strategy sessions are organised and presented. In order to explore connections between environments, observations will also include settings where the athletes are not present, such as coaching staff meetings, coach-parent meetings, and meetings with school leaders concerning issues that may have an indirect influence on the learning environment, such as policy, facility access, scheduling, team resources, etc. For individual case study participants, trainings and competitions outside of the school context (e.g. representative team or informal training) will also be observed for further insight into an individual athletes' tactical development.

- **Video and photograph.** Videos and photographic images will be captured of athletes' on-court game play during training and competition. Video data will allow the student researcher to conduct a post-match reflection on the embodied nature of tactical decisions (Mouchet, 2005) and will provide a tool to cross-reference direct observations made during the matches, training and team meetings. The data collection method provides a backup tool for observation because the dynamics of the observational setting (e.g. noise, crowd, sideline behaviour) may impair the student researcher's ability to fully capture tactical elements in the live setting.

- **Conversations/Unstructured interviews.** Informal conversations with the athletes, coaches, family members and significant others will also be carried out. Informal conversations are unstructured interviews that happen in the context of fieldwork. Conversations will address emergent issues related to the research question, including patterns in play, beliefs about learning, strategies for learning, constraints on athlete development (e.g. facility access, scheduling conflicts, etc.) and resources that support athlete learning. Some conversations may include video reflection from moments of game play in order to serve as a stimulus for

recall. Athlete and coach participants will be invited to identify personally meaningful moments of game play to serve as the basis of video reflection. Conversations will take place at venues of mutual convenience between the researcher and participants, for example at a parent's home, a sports club or in an administrator's office. Conversations will involve both individual and small group discussions depending on the topic. The researcher may request permission from participants to take notes and audio record conversations. Audio files will be downloaded to an external hard drive and stored in a locked cabinet, directly accessible only to the student researcher and the second supervisor. All audio recordings will be kept for six years then destroyed.

- **Document & artefact analysis.** Document and artefact analysis will be used as a tool for analysing the cultural and historical context. Archival data may include training and competition schedules, practice plans, team statistics, team policy documents, organisational reports, communications (commonly in the form of emails) and learning tools. As a tracing tool, documents and artefacts can be used to better understand the history behind a particular environment. For example, training schedules and practice plans can be used to demonstrate the logistical challenges that went in to managing a sequence of training sessions. Instructional videos used by coaches and players may be studied to better understand influences on decision-making and skill development. Team statistics and team policy documents will provide a basis for understanding historical performance and team culture. Public reports from the National Sporting Organisation will help locate the team within the patterns of participation throughout the region and country.

How any deception involved will be managed?

No deception is involved. All participants are fully informed and will have signed consent and assent forms.

The data collection instrument

No empirical standardised instruments will be used. The data collected will be from unstructured participant observation of the tactical challenges faced by the athletes.