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How a Game Sense Coaching Approach Impacts on the Learning Experience for Teenage Rugby Players.

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Abstract

Rugby is the national game in New Zealand and has played a significant part in the lives of many New Zealanders. More recently there has been a steady decline in the number of youths engaging with rugby (and organised sport in general), which is of concern to governing bodies such as New Zealand Rugby and Sport New Zealand. This collaborative action research study collaborated with coaches of two provincial representative rugby squads (one boy's, one girl's), consisting of 16-18-year-olds, where the coaches implemented a Game Sense (GS) coaching approach throughout their respective campaigns. The perspectives of the players were sought through focus groups and individual semi-structured interviews, to better understand how the learning experience was received by them. The researcher led and supported the development of the coaches through an initial workshop, observation, and feedback, as well as relaying relevant themes from focus groups, to better understand and implement GS together. The study intended to enhance understanding of a GS approach through the eyes of youth participants, with the hope that coaches and coach education may benefit and provide a practice offering that meets the needs of teens. Results suggest that players were highly engaged with a GS approach as the practice environment replicates the reality of a match through the practice design, utilising opposition, contact, and a questioning approach in practices. An underpinning theme on a culture of trust emerged, depicting how important team culture is for teenagers to engage with not only GS but also a team sport like rugby.

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Glossary of Terms

Back Attack:	Where the backs can attack with the ball from scrums and lineouts.
Backs:	Players numbered 9-15 who generally play behind the forwards.
Flyhalf:	A playing position. A fly-half generally leads the team's game plan, where they gain possession from scrums, lineouts, and general play. They wear the number 10 and are also referred to as the First Five.
Forwards:	Players numbered 1-8 that compete for the ball at lineouts and scrums.
Fullback:	A playing position. The fullback positions themselves behind the backline and are the last line of defence if opponents breach their team's defence.
Hooker:	A playing position. The hooker is positioned between the two props in the front row of the scrum, where they 'hook' the ball back for their team. They generally throw the ball into the lineout.
Lineout:	A lineout restarts the game after the ball has gone into touch. The players from both forward packs line up parallel to each other to compete for the ball.
Lock:	A playing position. The locks' primary role is to jump for the ball at lineouts. They push in the second row of the scrum.
Prop:	A playing position. Props play in the front row of the scrum and push against opposition props to help secure the ball. At lineouts, they generally lift the locks into the air to compete for the ball.
Ruck:	When the ball is on the ground, players from opposing teams may compete over the ball.
Scrum:	A contest to start play, where forwards of both teams compete for the ball. A scrum consists of all eight forwards of both teams.

Set-piece: Facets of the game that restart play, such as scrums, lineouts, and kick-offs.

Tackle: When one or more defending players brings an attacking player to the ground.

Wing: A playing position. Wings play in the backs and generally position themselves at the edge of the pitch.

Chapter 1: Introduction

Rugby has captured the hearts and minds of New Zealanders for over a century and offers pathways to players, coaches, and administrators both within New Zealand and internationally. However, more recently the sport has been marked by a reduction in player numbers, particularly in the teenage years, with players numbers decreasing 12% between 2016 and 2020 (School Sport New Zealand, 2021).

The New Zealand Rugby (NZR) strategic plan states ‘our goals are to increase participation, appeal and relevancy of all forms of rugby for all New Zealanders and offer different forms of rugby to new and returning participants’ (New Zealand Rugby, 2018a, p. 14), where increasing teenage player numbers is referenced as a key measure. NZR is hugely concerned with current attrition rates of teenage rugby players, where in conjunction with the strategic plan, led a review of secondary school rugby (with an intention of understanding why teenagers are opting out), and published a report titled ‘*Review of New Zealand Secondary School Rugby’* (New Zealand Rugby, 2018b). The review states that the ‘quality of coaching is a key determinant of the player’s experience and thus retention’ (p. 4), although most recommendations from the report were focused on the alignment of governance and competition structures, rather than improving ‘quality of coaching.’ It appears that most efforts from NZR around introducing new participation frameworks and competition structures (such as non-contact forms, Rugby sevens, removal of rep competitions, the introduction of national age-grade camps and competitions) and adaptations to the game (such as team sizes and law changes), have been rather futile in keeping teenagers in the game, so it is timely for NZR to reflect on coaching, coach education to ‘increase appeal and relevancy’ for teenagers.

Concomitantly Sport New Zealand (Sport NZ) has refocused its strategic direction to address the decline in youth participation across the spectrum, through implementing the *Balance Is*

Better philosophy. There has been a shift in focus on 'rangatahi' (youth aged 12-18) and curbing the downward trend of this group participating in sport and recreation, with a strong emphasis on 'voice of the participant' as evidence to steer decision-making (Sport New Zealand, 2021a). Coaching has long been part of the Sport NZ strategy, with past and current resourcing targeted at growing the capacity and capability of coach educators (Sport New Zealand, 2015), where more recently the *'Coaching For Impact'* programme supporting 60 coaches of teenagers across the country (Sport New Zealand, 2021b).

The youth sport landscape has changed where youth are exposed to a growing number of alternative sport experiences, diversity of sporting and non-sporting choices (such as online gaming), and development of professional 'pathway' opportunities, which have all experienced significant attention from youth. Teenagers want an experience that is going to capture their hearts and minds. Providers, therefore, need to consider contemporary trends in player attrition and consider how they offer their respective sports. As teenagers vote with their feet and opt out of rugby, a question that one considers is 'are the current offerings in rugby actually what teenagers want?'

I am characteristic of many young New Zealanders who was brought up playing rugby and dreaming of becoming an All Black. I spent many-an-hour through my junior and secondary school (SS) playing days, doing passing drills ('four corners'), tackling static tackle bags and running through an extensive playbook of set plays. I often wondered why we did not always have success in executing all this effort in a match (especially making tackles against opposition that moved). However, I have fond memories of all the wonderful people, friends, coaches, and supporters who contributed to the making of wonderful experiences. As a person who is passionate about rugby and sport in general, I have become increasingly concerned about the downward trends in participation, as I know the positive impact sport can have on our youth.

As an adult, I have developed a passion for coaching. I am a qualified World Rugby trainer and coach educator, have 15 years of rugby coaching experience (from junior to senior

Representative levels), plus I was a former physical education teacher. At the time of the study, I was employed as 'Coach Development Manager' for a provincial union. More recently, I have done advisory work for NZR (facilitating World Rugby coach educator programs and formally on the coach development advisory group), Sport NZ (Sport Development Leadership and Coach Developer programs) and various sporting organisations and community clubs.

In my formative years as a coach educator, I trudged from team practice to team practice and kept asking the question; 'is this practice actually engaging the players and helping them learn and get better?' I eventually ceased observing coaches at Thursday team practices (typically rugby teams practice twice a week, generally Tuesdays and Thursdays), as I would witness similar practice methods everywhere – unopposed practices where teams 'perfect' set plays and team attacking systems, techniques coached in isolation, with coaches generally controlling the practices and treating the players like puppets. Through my school teaching experience, I witnessed a shift from teacher instruction to more enquiry-based, student-centred approaches, but I did not see this movement so clearly in rugby. For me, associated questions are 'is how what I am seeing, influencing the trends and concerns highlighted by the NZR report and Sport NZ *Balance Is Better* strategy?' And 'is what's on offer actually capturing our teenagers and meeting their needs?' I became curious as to why coaches would teach techniques in isolated, passive, and unpressured situations, and coaches' propensity for 'perfect' technique through drills that do not contextualise the game of rugby itself. I struggled to see the link between what team practices looked like and the actual match itself, and whether the practices actually helped players learn and indeed perform on the weekend. As in a rugby match, opposition teams and players stress technique and force players to make decisions. Through various encounters with coaches, coach educators and players, I became interested to understand more about whether all this effort at practices *actually* enhanced the learning experience for players.

What also disheartened me, was realising that formal coaching courses that I was facilitating, such as *World Rugby level 2* and *Rugby Smart*, did not seem to have the expected impact on coach behaviour. Coaches left the courses full of ideas and praise for a great experience but often appeared to forget it all on the way home and resort back to how they always coached. As a coach educator, I was having similar challenges with coaches, that coaches were having with players, in that learning from the 'training' did not always connect and be implemented. Although it felt that more intimate approaches such as observation, feedback, and mentoring had more impact, the challenge was that this approach sapped excessive time and energy. Consequently, I pondered how one could influence coach behaviour on a mass scale?

While governing bodies such as NZR and Sport NZ have been focused on making changes to participation and competition structures and the game itself, which may have merit in addressing high-level participation issues, coaches have been forgotten about. The New Zealand rugby system encourages coaches to lead practices between matches, so the practice environment needs consideration to better meet the needs of teenagers. This initial enquiry kick-started this study and led me to explore game-based coaching methods such as GS, which seemed to fit a pedagogy that would align with the needs of teenagers.

Although society, policy, and rugby has changed over the years, rugby practice has not. Whilst game-based learning models such as GS have had a presence in coaching and coach education for 40 years, it appears to have made little impact on coaching in rugby circles. Furthermore, there is little understood about how GS is received by rugby players, let alone teenagers and its impact on their learning experiences. Asking the players, who are the recipients of coaching approaches such as GS, their perspectives, seems like a feasible approach to better understand GS pedagogy and potentially why it has struggled to make a dent in current coaching practices. For example, how does a player-centred approach impact learning? How do games and game scenarios impact player learning? How does a questioning

approach impact learning? What alternative training methods and/or approaches would support player learning?

If we can understand the perspectives of our teenage players, then maybe we can frame the practice experience to better suit their needs. Player experiences, particularly learning experiences have received a disproportionate degree of attention from researchers. This study will therefore address this imbalance and attempt to shed light on how the professional development of coaches and associated coach education programmes are informed through the eyes and voices of players. Thus, the question guiding this study is: *How does a game sense coaching approach impact on the learning experience for teenage rugby players?*

Coaching rugby has typically been dominated by a technique-based approach, with skills broken down, coached through drills, often in isolation from the whole game, with little consideration to how this approach impacts on the learning experience for players. Currently, all coaches in New Zealand do a compulsory Rugby Smart course (combining an online quiz and a face-to-face workshop), which offers NZR a unique opportunity to educate and upskill coaches on a national scale. Rugby Smart is focused on player safety and injury reduction (mostly due to a funding partnership with ACC), with a traditional technique-based approach through drill-based coaching methods, reinforced by coach educators facilitating the workshop. Rugby involves a high level of physicality and could be argued to be a multi-dimensional, technical sport, thus requiring players to have a technical ability, however, there is little evidence documented by NZR or other sources to quantify how this technique-based approach impacts NZR's and ACC's goal of improving player safety, as the introduction of Rugby Smart courses coincided with law changes (Freitag, Kirkwood, & Pollock, 2015). Reviewing current coaching methods and coach education programmes in rugby should be considered, especially as coaches can influence the learning

experience and retention rates of players (Barnett, Smoll, & Smith, 1992; Boardley, Kavussanu, & Ring, 2008). Governing bodies such as NZR face huge challenges around upskilling coach educators and coaches, to provide positive learning experiences for players, to ultimately attract and retain players in and to the game.

Study Structure

This study will review current literature on GS and other game-based coaching methods. It is organised into sections that investigates GS pedagogy, current research contexts, practice design, coach education, questioning, and explores a learning experience. The literature review frames both the research question and methodology.

Chapter three outlines the research method which is founded on a collaborative action research paradigm. Data collection techniques of participant observation, focus group, and individual semi-structured interviews are outlined, as well as detailing a thematic analysis process.

Results are outlined throughout chapter four, highlighting a major theme of replicating reality, with four sub-themes, namely practice design, using opposition, contact and questioning. A final fifth theme of culture of trust is then presented. A discussion will follow each presented theme.

Finally, I will present my conclusions highlighting common threads across the themes and how that may impact coaching and coach education moving forward.

Chapter 2: Literature Review

Youth have an innate love of playing. No invitation is needed to play, make up games and to engage in competition with their friends (Slade, Webb, & Martin, 2015). Despite this preference for play, current coaching models in rugby seem to reinforce drill-based coaching methods, which rarely represent the actual match. Existing research indicates that there is a current lack of understanding of whether existing coaching methods in rugby appeal to the learning needs of teenage rugby players or whether these methods actually help players learn.

Game Sense Coaching

A GS approach is a player-centred pedagogy, where learning is contextualised through games or game-like scenarios in which the coach facilitates learning through questioning (Evans & Light, 2008; Light & Evans, 2013) and modifying the practice environment and design (Evans, 2012). This contrasts with a technique-based approach, where players participate in a series of structured drills to help improve game-related skills (Turner & Martinek, 1999). A technique-based approach identifies that players must learn the skills in order to play the game, where GS is founded on learning the game first (Evans & Light, 2006),

GS pedagogy was developed in Australia in the 1990's specifically for sports coaching (Evans, 2012; Light & Robert, 2010) and was derived from the Bunker and Thorpe (1982) model of Teaching Games for Understanding (TGfU) (Harvey, Cushion, & Massa-Gonzalez, 2010; Kirk & MacPhail, 2002; Turner & Martinek, 1999). GS is similar to TGfU in that it is founded on a constructivist approach, uses games or game-like scenarios, and emphasises questioning. However, TGfU has generally been founded in physical education settings and follows a prescriptive model, where GS has largely been evident in sport settings and is seen as less structured (Jarrett & Harvey, 2016).

Other similar versions include Play Practice (Launder, 2001), Tactical Games Model (Mitchell, Oslin, & Griffin, 2013) and Games Concept Approach (Fry, Tan, McNeill, & Wright, 2010). Throughout this thesis, 'GS' will be referenced to encompass such similar versions that align with the stated GS definition.

GS is founded on a player-centred coaching approach which caters for players' needs and understandings and enables them to have control of their learning and participation (Kidman, 2005), The player and not the technique is at the centre of the GS model, so coaches are required to know and understand their players. GS has been noted to heighten interest and engagement in learning (Evans, 2012; Fry et al., 2010) and increase intrinsic motivation, which has been associated with a stronger likelihood of players remaining in sport (Harvey & Jarrett, 2014; R. Jones, Marshall, & Peters, 2010; Mandigo, Holt, Anderson, & Sheppard, 2008; Pritchard, Hawkins, Wiegand, & Metzler, 2008), all of which is a core justification for implementing this approach (Jarrett, 2011). Generally player motivation is increased as practice situations are more active and player autonomy is elevated, where players feel they can move in to a position of decision-making within the team (Evans & Light, 2008)

Coaches are seen as more of a facilitator where learning is socially constructed between the coach and players (Light & Evans, 2013), built on 'equal' relationships which may be seen to increase motivation and engagement for players (Pill, 2015). The coach's role is to design and modify the practice environment through games, game scenarios, activities and problem setting, then encourage the players to problem-solve by modifying the practice environment and design (such as adapting the space, rules, players, constraints) or through questioning, facilitating group discussion, problem-solving and collaboration scenarios. The players are then afforded the opportunity to test and reflect on their strategies, tactics and skills back into the practice context (Evans, 2012), all in an attempt to develop their understanding of the sport (Slade et al., 2015).

It is argued that GS can develop better game players (Jarrett & Harvey, 2016) by promoting intelligent play (Jarrett, 2011) and providing opportunities for coaches to develop more complete players than is possible with technique-focused approaches (Light, 2004) as learning is seen as more contextualised (Light & Evans, 2013). Players are thought to develop and have more success with making effective decisions on when to execute technical motor skills at appropriate in-match situations (Miller et al., 2017), such as cues presented within the playing environment (Broek, Boen, Claessens, Feys, & Ceux, 2011). The perceived problem with traditional technique-based approaches is that skills are taught in isolation from the game context so players do not develop decision-making skills (Gray & Sproule, 2011). A technique-based approach may be like 'reading but without comprehension' (Slade et al., 2015, p. 73).

Challenges for coaches

Theorists of GS have generally highlighted positive outcomes of this approach, although implementing GS comes with some challenges for coaches, so oversimplifying a potentially challenging and demanding approach to coaching should be considered (S. J. Roberts, 2011). GS is generally considered a long-term term investment, so potentially a longer term commitment is required to implement GS and see the associated value from it (Light, 2004; Rink, French, & Tjeerdsma, 1996), so it may face resistance in short-term campaigns.

Coaches noted challenges associated with GS include having insufficient pedagogic content knowledge, the use of an appropriate questioning strategy, gaining access to appropriate support material (S. J. Roberts, 2011) and dealing with the aesthetics of practice, which can look quite chaotic for coaches and people (such as parents) watching (Light, 2004). Challenges occur as the coach may not always be able to set the practice parameters to meet all individual needs (Fry et al., 2010), especially as a rugby squad can sometimes have 25 or more players.

These challenges highlight the importance of the coach being skilled in GS pedagogy, by guiding the learning process and making players acutely aware of why GS methodology is being utilised. Coaches can face challenges implementing GS due to interpretations of the pedagogy, unease about the changing role of the coach (to more of a facilitator), adopting a player-centred approach to coaching and resistance from traditional communities of practice (Cushion, 2013; Jarrett, 2011). As the coach is seen as more of a facilitator and socially constructs learning alongside players, GS appears to present challenges for some coaches (Light & Evans, 2013). The power relationship or control balance is very much handed over to players, which can be met with trepidation (R. Jones et al., 2010). Many coaches may see this less authoritarian position to contradict what they and others see as 'good' coaching. Typically, coaches are perceived as the fountain of all knowledge and need to impart this knowledge on to players (Light, 2004).

Coaches tend to base their coaching practice on experience (Harvey, Cushion, & Massa-Gonzalez, 2010), which is often grounded in a more traditional approach where the coach leads a series of drills and finishes practice with a game. To start practice with a game and integrate games throughout practice may be quite foreign, where traditionally coaches may finish with a game if the team has worked hard and behaved appropriately (Cushion, 2013). Often coaches have a negative attitude towards GS and may be unwilling to change (Wang & Ha, 2012) and adopt a new method, especially where certain 'tried and tested' methods have been the norm for so long (Harvey, Cushion, & Massa-Gonzalez, 2010). Coaches may hold beliefs of what coaching and learning looks like (Harvey, Cushion, & Sammon, 2015), such as the coach transmits knowledge for players in a linear process, that they then put into action in a practice and match setting (Evans & Light, 2006).

There may be a viewpoint of 'this is how we've always done it' by coaches and an associated reluctance to implement a GS approach, especially in-season when results are deemed important (Harvey, 2009). Coaches may feel the pressure to win, so adopt a more controlling approach (Cushion, 2013), which is almost certainly the case in the teenage rugby space in

New Zealand. The pinnacle of SS rugby is to play for the top team, named the 1st XV. With the rise in status of 1st XV rugby and the importance that some schools put on winning, there is almost certainly pressure on coaches to 'control the environment' in order to get quick wins (McKenzie, 2019). This notion of coach or adult control in organised youth sport is thought to be prevalent where such environments often lack the enjoyment and potential of play (MacDougall, Schiller, & Darbyshire, 2004).

Winning and/or results can lead coaches to become outcome-focussed rather than player-centred, which heightens resistance to GS (Harvey, Cushion, & Massa-Gonzalez, 2010), especially if GS is seen as a method that may require a longer time for players to learn (Light, 2004). Harvey, Cushion, and Massa-Gonzalez (2010) noted that coaches felt that GS interfered with their preparation for upcoming matches, where it may be preferable to adopt a more controlling approach to attempt to get quick performance outcomes. This may be prevalent in rugby as set-piece situations (such as scrums and lineouts) allow for set-plays to be constructed and rehearsed. Generally the coach is the 'orchestrator' (R. L. Jones, 2006) of such plans and directs the players to get immediate outcomes.

Player perspectives on challenges

Although youth player perspective in GS is very under-researched, players have stated problems if they do not understand the purpose of the pedagogical process, (for some) working with less-skilled players and resolving game disputes amongst themselves, a noted aversion to prolonged teacher questioning especially in breaking the flow of the game (Fry et al., 2010) and getting the game right (Harvey, 2009).

Players, like their respective coaches discussed previously, may be reluctant and may push back on GS approaches, especially if they are used to being coached in a more traditional approach such as technical skill development coached in isolation, culminating in a game at the end of practice (Harvey et al., 2015; Thomas, Morgan, & Mesquita, 2013). And, as the coach may take on a more passive approach, players may feel that the coach 'isn't coaching'

as they are not controlling and telling. This throws up a conundrum for coaches on either persevering or resorting to traditional approaches (Harvey et al., 2015). There may be perceptions from players of what learning is and that they come to practice to be taught.

Players may in fact resist a player-centred coaching method if they are conditioned to instructional behaviour from their coaches (Harvey, Cushion, & Massa-Gonzalez, 2010). This is a potential problem in rugby for players used to working within highly structured, system-reliant playing environments. Making the purpose for this pedagogy explicit to players is recommended to create 'buy-in' and reduce confusion (Harvey, Cushion, & Massa-Gonzalez, 2010; S. J. Roberts, 2011).

Players may also be wary of experimenting at team practices if the coach discourages mistakes and sees success at 'getting things right' (Koekoek, Kamp, Walinga, & Van Hilvoorde, 2014), which may be prevalent in rugby where players are expected to learn and execute set plays and systems.

Although this study has not set out to find how different genders experience GS, it has been conducted in both boys and girls contexts, so may require some consideration. Broek et al. (2011) noted that male students scored higher tactical scores than females, where Gray, Sproule, and Wang (2008) noted that males preferred invasion games more so than females. Both results were linked to a potential scenario of males being exposed to more sports and games growing up.

Coach Education

Despite GS and like forms of game-based approaches existing for close to four decades, this approach has failed to receive much attention from coaches, coach educators, or coaching frameworks (Cushion, 2013), let alone make a major dent into mainstream rugby coaching (Evans, 2012). For GS to make its way into community coaching, it would seem rational for coach education frameworks to promote this approach. However, there are certain challenges with influencing coaching frameworks to adopt GS. Kinnerk, Harvey, MacDonncha, and Lyons

(2018, p. 15) note that “a significant task that remains in coach education is moving coaches from “just playing games” to using GBA (game-based approaches) focused pedagogy to impact player learning.” Commonly, coaches feel that GS is ‘just playing games’ (Jarrett & Harvey, 2016), so there can be some reservation that they aren’t actually ‘coaching.’ But GS is more than just ‘kicking a ball out’ and playing. Coaches are required to support player learning by ensuring learning is explicit through a clear purpose for practice sessions, activities, games, scenarios and guiding learning through questioning. (Kinnerk et al., 2018). This ‘just playing games’ interpretation of GS was evident with football coaches in Australia who enjoyed following the Australian Football curriculum and incorporating game-based practices, although were unaware of how to link questioning to deliberately foster thinking skills for the players (Karagiannis & Pill, 2017).

Currently coach education in New Zealand has a large focus on technique-based coaching approaches, through formal courses (such as Small Blacks, Rugby Smart, Level 1, Level 2, and Level 3) and resources (coaching handbooks and on-line platforms such as Rugby Toolbox) (New Zealand Rugby, 2021). Current GS resources (such as games to use in practice) available to coaches is extremely limited. There has been a recent move to provide coach resources to promote game-based warm-ups, although the games are not rugby specific and rarely represent the demands of playing rugby. Until NZR start promoting GS through its resourcing structures, coaching approaches may remain the same for years to come. Although notably, the English Rugby Football Union introduced GS pedagogy into its coach education courses through the mid 1990’s, but there were still many challenges such as inconsistency of messages from coach educators, limited time to apply practical learnings and limited resourcing (Reid & Harvey, 2014). Sport New Zealand’s ‘*Community Sport Coaching Plan 2016-2020*’ makes no mention of GS or any game-based coaching approaches, although it pays mention to ‘participant centred’ and ‘ideal development coaches (‘development coaches’ include coaches of teenagers) will… focus on skill development and

decision-making' (Sport New Zealand, 2015, p. 23). So there remains challenges in how to influence governing bodies, coach educators and coaches.

Most studies in GS have incorporated more intimate models of coach education, such as collaborative action research, mentoring, observations, and reflective practice. These approaches appear to make a positive impact on the coaches as it is far removed from traditional workshop based approaches that struggle to meet the participants needs (Harvey & Atkinson, 2017). Although more intimate approaches appear to have a lasting impact, they are also time consuming for coach educators, so fail to make a wide-spread impact. However, how coaches are 'educated' is far broader than formal coach education frameworks. Being exposed to other GS role models, colleagues or communities of practice is seen as an influencer on coaches adopting this approach, where coaches may learn the pedagogy informally (O'Leary, 2016). Often coaches will look to role models from the elite end of the game.

Even if coaches are keen to adopt a GS approach, there may be some political and strategic trepidation to implement this approach if key influencers (such as esteemed high performance coaches, coach educators, people who make coach selections) are not advocates (Harvey et al., 2015). Often community coaches role model their coaching approaches off the elite level and although there are some advocates from the highest level of rugby coaching, such as Wayne Smith (Kidman, 2005) and John McKay (Mckay & O'Connor, 2018), GS has to date, been faced with some resistance from elite level coaches.

Light and Evans (2013) noted that elite level rugby coaches exhibited a habitus demonstrating a doubt that players 'sense of the game' could be helped significantly through coaching, as players were perceived to be born with it. These elite level coaches emphasised a bigger importance on preparing players physically, potentially as outcomes can be easily measured and seen.

There was also resistance to 'experimenting' with new coaching approaches such as GS, as the lifespan of a coach at the elite level can be quite short, where performance results can

dictate the future of coach appointments (Light & Robert, 2010), so coaches may need to understand the connection between GS and scoreboard results (Pill, 2015) for them to 'buy in.' Such viewpoints and contexts may present challenges as to why GS has not been adopted widely in a rugby context.

Practice Design: Getting It Right

A fundamental pillar of GS is to provide as many opportunities for players to experience situations in the practice environment that will happen in a match so players can developer both decision-making and technical skills simultaneously (Pill, 2015; Renshaw, Chow, Davids, & Hammond, 2010), with the hope of improving aspects of team play (Light, 2012). 'The closer training is to the actual game the better rugby players will perform in the game' (Evans & Light, 2006, p. 26), so 'getting the game right' is important in motivation and enhancing learning for players (Gréhaigne, Grehaigne, Griffin, & Richard, 2005).

Although motivation is heightened as players know they are not going to stand in queues and do repetitive drills (Light, 2004), the challenge for the coach is to provide players with game-like scenarios and opportunities to solve potential problems that arise in matches. Slade (2015) uses the notion of 'representative learning design' which is a learning structure that helps make players aware of what is required to perform, where practice must 'replicate conditions that mirror both the tactical, technical, and perceptual elements of the performance context' (p. 656). So, in essence, 'if it doesn't look and feel like rugby, then don't do it.'

Coaches need a strong understanding of the game (Cushion, 2013) so they know what level their players are at and how to advance them. Coaches lacking knowledge of rugby, may in fact lead to coaches just 'kicking the ball out' and letting the players play (Cushion, 2013) with little intervention from the coach. Coaches can often diagnose problems associated with technique but struggle with the strategic and tactical elements of the game (S. J. Roberts, 2011). The coaches role is to identify and manipulate constraints, tasks, and rules within the practice environment to encourage desired outcomes, therefore require a strong

understanding of the sport so they can adapt the practice environment (Renshaw et al., 2010) to enhance learning.

A common misconception of the GS model is that a technique and skill-based instructional approach is neglected. However, technical instruction may be integrated after understanding the game's strategies and tactics (Harvey, Cushion, Wegis, & Massa-Gonzalez, 2010) and only when it is 'conceptually and developmentally appropriate for the performer' (S. J. Roberts, 2011, pp. 34-35).

This poses the question of what coach education could look like. Not only are there challenges around *how* to coach, but also *what* to coach. It is important for coaches to understand what makes up a game of rugby so they can replicate the practice environment appropriately.

There is little documented on how players perceive the impact of practice design on their learning experience, let alone teenage rugby players. High school students in the Rikard and Banville (2006) study felt that playing games were preferable to traditional approaches, such as warm-up laps and fitness drills, where you 'feel like cattle being herded around in circles' (p. 393). Light (2006) documented that those children felt that games were fun and promoted a natural way of learning. Players have noted that it is important for coaches to 'get the game right' to help engagement and transition learning from practice into match situations. There is a preference for simple games that are more 'game realistic.' When modified games do not represent the full game learners may suffer and drop their level of engagement and intensity (Harvey, 2009).

Pimenta and Light (2018) noted that teenage basketball players in New Zealand found practice games to be fun, intense, and promote decision-making, where they felt they became better thinkers in actual matches. This would suggest GS appealing to the learning needs of teenagers, although their positive experience was founded on a strong connection and relationship to their coach, so it is not clear whether their experience is due to the practice design, relationship with coach, or other factors.

Practice design mechanics

Coaches may use a range of practice design approaches to generate different outcomes. Manipulating tasks, such as rules and constraints are often the most common approach to engineer learning for players (Renshaw et al., 2010). Alternatively, coaches may adopt the STTEP principles, which is a tool to help coaches design practice activities, games and scenarios, through manipulating either space, time, task, equipment or people (Grout & Long, 2009). For example, using a smaller space may lead to increased levels of contact, which can be suitable for practise sessions focused on contact aspects such as tackling and rucking. Larger spaces will lead to defensive players covering more realistic spaces as they spread further apart, which offers opportunities for attacking players to use greater spaces to attack and may encourage more width in their passing. Although Gabbett, Abernethy, and Jenkins (2012) found no significant difference to passing skill involvements such as receptions, passes, and quality of pass on small or larger spaces for elite players in rugby league. However, this study did not account for the type of pass or decision-making measures, where rugby players are required to execute a range of passes depending on what opportunities are presented by the defensive team. No research was able to be sourced on how different spaces or other principles highlighted above, impact quantitative outcomes in rugby union, or how players perceive learning.

Often rugby practices are performed unopposed and without realistic oppositional pressure, for example learning attacking lineouts, back attack strike moves and team attacking systems. This is a phenomenon that occurs in rugby, although it is questionable whether this approach to practice is helping prepare players for match-like conditions. To support skill development for players, applying pressure (Evans & Light, 2006), seems suitable. It has been noted, that less able players may not have the physical and cognitive ability to apply learning in pressure situations (Holt, Ward, & Wallhead, 2006), so coaches should utilise opposition pressure in practices, when and where contextually appropriate for the players. Opposition pressure may provide relevant match-like realities to enhance the skill development of their players, to

perform relevant movement patterns and techniques in a match. The great US College basketball coach, John Wooden discussed that his practice methods would replicate the game of basketball through applying (varying degrees of) opposition pressure in practice scenarios (Wooden, Tobin, & Walton, 1988).

Small-sided games

Often rugby teams have small squad sizes, where coaches may use small-sided games to foster learning through increased involvement. Studies in other sports have highlighted how implementing small-sided games can dramatically increase involvement (Fenoglio, 2003; Fernández-Espínola, Abad Robles, & Giménez Fuentes-Guerra, 2020), enhance physiological benefits (Miller et al., 2017) as well as providing opportunities for small-group problem-solving, which appears to have merit in fostering both engagement and learning for players. Using small-sided rugby games in rugby focussed on key skills such as passing, tackling, rucking, and decision-making associated with those skills and may impact positively on the learning experience.

Although many studies have shown increased player involvement, it is still unclear whether small-sided games foster a transfer of skill acquisition and decision-making into the full match. And, of particular interest is that the vast majority of studies on small-sided games have been conducted in football, with very little understanding in a rugby context (Fernández-Espínola et al., 2020). Football players (aged 11-12) in the Koekoek et al. (2014) study noted that they felt the tactical and decision-making elements of small-sided games supported learning in a match, although the game had to have the right level of pressure to challenge them. Thomas et al. (2013) identified through a study involving young rugby players, that the players wanted to play the ‘real game’ as they felt the small-sided games were more to help with skill development as the link with the small-sided game and where it fits in the match, was not made clear in the initial stages of the study. Small-sided games may have perceived benefits,

although players need to understand where the small-sided game connects with the match, or the engagement could be lost.

Rugby specific context and considerations

Rugby may be interpreted as a complex invasion game (Mandigo et al., 2008) so it comes with challenges for coaches to adopt relevant games (Harvey, 2009), to stimulate significant learning for the players. Rugby involves a balance of structured and unstructured play. Structured facets of the game involve set-pieces such as scrums, lineouts, and back attack. The game stops and players have time to make decisions on what set plays to use, communicate it to fellow team members then attempt to execute said plays. Once the ball is in play, rugby becomes dynamic and decision-making time for players reduces dramatically based on movements from both their own team and their opposition. Coaches have attempted to provide structure for ball in play scenarios to reduce decisions and build cohesion between teammates (Light & Robert, 2010).

Mckay and O'Connor (2018) noted that over a five-year period of Super Rugby, from 2011 to 2015, on average 44% of possessions came from structured plays (scrum, lineout, and kick-off receipts) and 56% of possession came from unstructured possessions (kick receipt, turnover in general play, turnover at set-piece, and quick taps at penalties). This initial gathering of data formed the nucleus of how the 2011 Super Rugby championship winning Queensland Reds (coached by the first author McKay) would spend their full squad practice time, to replicate what they would experience in a match. They identified the need to provide more unstructured time at practices, such as allowing turnover ball to play out after mistakes, as well as practicing against opposition regularly.

Often teams will spend large proportions of practice perfecting set-piece plays such as scrums, lineouts, and back attack strike plays, with little regard to practising turn-over ball. This high emphasis may reflect how rugby was played in past decades. Although age-specific match data is not on hand, the game has changed, although coaching may not have moved at the

same rate. Of note is that between 1995 and 2015, the number of scrums and lineout at the international level reduced by 37% and 35% respectively, while the ball in play increased from 33% to 44% of a match (Mckay & O'Connor, 2018). The emphasis on high proportions of time spent coaching set-piece, with little regard for transitional play, may be lingering from past decades. Barkell, Pope, O'Connor, and Cotton (2017) noted that the Sevens rugby teams that are more proficient in transitioning from attack to defence, defence to attack, or from structured to unstructured play progressed further in World Series Sevens tournaments.

Rugby is also a contact sport, involving a high number of physical collisions and encounters, such as tackling, rucks, mauls, and scrums. This is a challenging context due to increased injury risk. Often, non-contact touch games are used in practice, although this does not fully replicate the pressures, speed and intensity of a full-contact match (Mckay & O'Connor, 2018). The above highlights a need to balance structured and unstructured practice time in a rugby context to better replicate the demands of a rugby match and consider how contact may be implemented safely into the practice environment. While most GS and game-centred practice approaches are conducted in non-contact sports or research contexts with high proportions of 'ball in play' scenarios, which should be considered when applying such methods to the uniqueness of rugby.

Questioning

GS pedagogy emphasises learning to be guided through questioning (Wang & Ha, 2012) rather than telling players what to do (Light, 2004). It is perceived that questioning will hand over power to the player to construct their own meaning, with the potential to increase a deeper level of thinking and thus learning. Players will see improved tactical awareness (Broek et al., 2011) and an increase in motor skill and tactical performance (Darnis & Lafont, 2015), compared to players who do not experience a questioning approach.

Questioning is a vital pedagogical tool, although it requires planning, practice and perseverance (Pill, 2015), where questions need to be planned and specific to the desired

outcome(s) (Pearson & Webb, 2008). And although a questioning approach is promoted through the literature to put the player at the centre of the learning experience and promote decision-making, there is very little support for coaches on how to implement this approach (J. Wright & Forrest, 2007). A questioning approach may be more complex than prescribed in the theoretical framework of GS, documented in current literature.

The coaches role is to focus questions on helping players to solve problems rather than point out everything that is wrong (Harvey, Cushion, & Massa-Gonzalez, 2010), although repositioning oneself to be more of a facilitator rather than giving players solutions appears to be a challenge for coaches (Evans & Light, 2008).

It is important to pitch questions at an appropriate level to the players understanding so players can comprehend, answer (Thomas et al., 2013) and ultimately implement. In fact, a questioning approach might not come easy if coaches have a limited experience or understanding (McNeill, Fry, Wright, Tan, & Rossi, 2008) of rugby. There are challenges around applying a wide range of responses as coaches require specific knowledge of the game to talk the language of the game, and to interpret the game and the sport (Forrest, 2013) and thus support players learning.

J. Wright and Forrest (2007) found that coaches often used questions to elicit correct answers rather than allowing opportunities for discussion and problem-solving, which appears to be contrary to GS pedagogy, where players are encouraged to create meaning. Often coaches may ask closed questions to elicit facts, information recall, and knowledge (Mawer, 2014). This conjures up challenges as players may be reluctant to ‘get it wrong,’ especially if the coach praises correct answers and disregards or criticises incorrect answers (Van Zee & Minstrell, 1997). Coaches may resort to a more closed approach due to time constraints at team practices, coach capability, or coach control. The context is important, especially in rugby, as at times the coach may check for understanding around content, such as team plays and calls, so a more closed approach may be suitable.

Facilitating deeper tactical and game understanding is critical to the success of GS pedagogy, which can be a complex process for many coaches (S. J. Roberts, 2011). Coach participants in the Harvey and Jarrett (2014) study commented on the challenge of effective questioning 'to stimulate gameplay knowledge construction' (p. 14). Honing the skill of questioning to probe player understanding beyond recall and knowledge to a deeper level that promotes tactical awareness seems to be a real challenge for coaches (Fry et al., 2010; S. Wright, McNeill, & Fry, 2009). Coaches are encouraged to use open-ended questions to allow for more exploration, rather than elicit a 'yes/no' answer, especially when encouraging tactical proficiency. Questions that require 'yes/no' answers may limit the value for the athlete as involvement is reduced (Forrest, 2013). By utilising open-ended non-judgemental questions, discussion and connection between players can be enhanced (Van Zee & Minstrell, 1997).

Typically a questioning approach may follow what Van Zee and Minstrell (1997) refer to as IRE, where the coach initiates a question, the players respond and the coach then evaluates the response. This often closes the loop on the process as answers are generally right or wrong, which may place the players knowledge and interpretation secondary to that of the coach (J. Wright & Forrest, 2007). Coaches may be encouraged to use a 'reflective toss' where the coach asks for an articulation of the players' initial thoughts on the response, to elicit more depth, potential understanding, and action (Van Zee & Minstrell, 1997).

Relevant literature documents that coaches need to consider how to balance when to step in and question and when to let the game or practice scenario flow. It is often difficult to know when to stop games and activities, as well as removing players from the game to provide feedback, often due to high engagement in the game (Evans, 2012; Harvey et al., 2015) or practice. Players have noted an aversion to prolonged teacher questioning especially in breaking the flow of the game (Fry et al., 2010). Coaches will often use questioning as a tool at the end of a task, game, or practice rather than as an ongoing part of the process (Light & Robert, 2010), which may mean 'coachable' moments are lost. This evidence suggests applying a range of questioning approaches should be considered.

Questioning contexts

Most literature points to coaches using whole group questioning approaches, although often one or two players may dominate the discussion so there is little certainty that the entire group have understood (McNeill et al., 2008). The coach needs to be skilful in handling whole group discussions to foster a safe environment, where players will be confident to share and potentially challenge ideas (Van Zee & Minstrell, 1997). Whole group questioning should be used sparingly as in the Fry et al. (2010) study, students expressed dislike for breaking the flow of the game. Although it is important to note that this study was conducted in a PE setting, where rugby players may have a vested interest in enhancing learning opportunities as a team if it will positively support their learning and/or team performance. However, this an unknown through current research or literature in team sport contexts.

Coaches may wish to stop practices to allow small groups to problem solve, where the coach may align with a group to facilitate questioning. This can be a useful approach if using small-sided games or unit work in rugby (such as forwards, backs). This approach can become a challenge to facilitate if groups outnumber the available coaches. The coach may wish to rotate through the groups, although this takes time (Harvey & Atkinson, 2017) or leave the players to discuss and problem-solve together.

A pair questioning approach may increase the involvement of all players, where the coach can pose questions and players discuss ideas and solutions with a partner. There can be a tendency to get off task as the coach cannot monitor all the conversations and if they are paired with someone they do not respect or feel they can learn from or with, they can disengage. Although, on the contrary, being paired up with another player who is perceived to be highly skilled or knowledgeable can be well-received (Cothran & Kulinna, 2006). Rugby coaches may be encouraged to pair (or group) players according to relationships that are required in a match. For example, half-back and flyhalf, hooker and jumper, wing and fullback.

More individualised coach to player questioning approaches is understated in current literature. Individual questioning may increase the levels of intimacy between the player and coach, where the player's needs can be met directly. Although finding time in a rugby environment, for this approach, may be problematic as coaches are often time-poor. However, it is unknown how individual questioning approaches may benefit player learning in a rugby context, or whether it is feasible.

Often coaches are at odds with what approach to apply in the various contexts they operate in, so often resort to whole-group approaches. There is also little understanding of how to frame questions to enhance learning. Current coach education and resourcing in rugby fail to provide any clear support, such as frameworks for coaches to utilise. The GROW framework may provide some guidance for coaches.

Questioning approach: GROW model

The GROW model of questioning is a prominent tool that coach educators in New Zealand are encouraged to use when conducting coach feedback, although has not been explicitly highlighted as a tool for coaches to use with players. It is a four-step process (Goal, Reality, Opportunities, Way forward) that coaches can move through to help players build awareness, take ownership and solve problems (Harvey, Cope, & Jones, 2016; Whitmore, 2010). For example:

- Goal: What are we trying to achieve?
- Reality: How are we getting on?
- Opportunities: What could we do differently? What could we improve?
- The way forward: What will we implement?

The skill of the coach is to facilitate the questioning, listen to responses to connect new questions to probe deeper thinking, if and when appropriate.

There appears to be a lack of research on how a questioning approach is actually received by teenagers, in particular how it impacts on their learning experience, which appears at odds

with a pedagogical approach founded on social constructivism. Light (2004) noted that players will typically be able to articulate how to solve a problem prior to physically demonstrating it, although it is unclear whether a player's ability to answer questions and articulate solutions to problems actually transfers into improved performance (Rink et al., 1996; Thomas et al., 2013). Coaches are encouraged to use questioning approaches coupled with an opportunity to perform.

Defining a Learning Experience

Learning in a sports context can be complex (Quennerstedt, Öhman, & Armour, 2014), when considering the multi-faceted nature of what learning might look like, so defining a learning experience is problematic. GS is founded on a constructivist approach of learning where players build on prior experiences (Butler, 2006; Pill, 2015) and knowledge, whilst encouraging players to interact and work together to find solutions, thus being a social process (Light, 2012). The role of the coach is to assist social interaction and support players to build on prior knowledge (Llobet-Martí, López-Ros, & Vila, 2018). But coaching is broader than this. In its simplest form, a coach helps players and teams improve. The coach facilitates practice sessions to help with this improvement and thus execute in a performance, such as a match. Thus 'learning' may be viewed through behaviourism as coaches look to influence behaviour change, as well and through a cognitivism lens where players may need to acquire knowledge (such as game-plan content) related to their sport (Chambers, 2013), which is certainly the case in rugby, due to content such as set-players, that players are required to learn and execute.

Social constructivism

A social constructivist approach encourages players to construct knowledge collaboratively with peers and coaches, and link new learning to prior knowledge (Chambers, 2013). This is aligned to GS, due to the nature of GS being player-centred with a heavy focus on questioning.

Players are active in their learning where they work with teammates to solve problems, where the coaches role is to facilitate group interaction (Broek et al., 2011). Low ability students reported higher levels of engagement in sport as a result of GS, as there was not the emphasis on performance outcomes, but rather constructing knowledge and problem-solving, through a fun way of activity (play) (Light, 2006). Social constructivism connects well in a team sport such as rugby, as in a match, players will need to rely on each other, solve problems and make decisions collectively. The coaches' role is to facilitate a safe environment for social constructivism to occur, through fostering strong relationships where they know and understand the players (Koekoek, Knoppers, & Stegeman, 2009).

One of the features of GS is that it fosters and builds a supportive social climate (Light, 2004) or team culture (Kidman, 2005), which can enhance interactions and relationships (Light, 2006). Learning for players is not only in the hands of the coach, but their experience is also influenced by the abilities, motivations, and contributions of their peers. (MacPhail, Kirk, & Griffin, 2008). Players can develop knowledge of their teammate's strengths and weaknesses and how to maximise and compensate appropriately, by playing together in context as well as how knowledge and solutions are often socially constructed. GS is seen to enhance communication and teamwork (Harvey, 2009), while strengthening social skills (Fry et al., 2010) and citizenship, where skills such as fairness, equality, and empathy are encouraged through compromising, questioning, negotiating, and listening, as well as fostering personal skills such as self-confidence, social awareness, and respect (Butler, 2006). Social interaction is seen as a prominent factor in creating meaningful sporting experiences for youth (Beni, Fletcher, & Ní Chróinín, 2017), as young people prefer participating in sport with friends where they are able to learn new tasks with less conflict (Koekoek et al., 2009). Squads that are formed based on a selection process, which is often the case in rugby contexts, may provide different challenges for players, as some relationships will be established, where other relationships will be new.

A team sport such as rugby certainly relies upon relationships of understanding and opportunities to socially construct knowledge, which can be enhanced with a GS approach (Slade et al., 2015), due to players being questioned and spending time practising together in context. However, it is unclear whether GS may enhance a team environment or perhaps the opposite, as practices can be quite messy with high error rates, which may potentially reduce confidence and trust within the team environment (Mckay & O'Connor, 2018), thus placing players in vulnerable positions, which may impact on their learning. Gray et al. (2008) noted how in PE settings, less able teenage students can often feel daunted when playing with more highly skilled students, often participating with a fear of making mistakes and being ridiculed. There may also be resistance from players to socially construct learning with their peers (Fry et al., 2010), especially if they see the coach holding the knowledge with the intention of imparting to the players (Cothran & Kulinna, 2006).

The coach needs to be skilled in creating a culture of trust to implement a GS approach and thus make positive impacts on the learning for players. The coaches role may be to foster a supportive, safe environment where there is trust between players, so players can take risks, test out ideas, and answer questions without fear of judgement (DeVries & Zan, 1996).

Facilitating an environment for players to socially construct knowledge and take ownership of their learning appears to have challenges for coaches as it may be a longer-term commitment to foster, especially if players are used to more traditional approaches where they are told where to be and what to do, which is often the case in rugby.

Behaviour change

Learning through a behaviourist lens would see players changing behaviour as a result of the practice environment that the coach sets up. Players may develop new behaviour which aligns with certain objectives (Chambers, 2013; Quennerstedt et al., 2014), such as skill acquisition, decision-making and game knowledge. GS can lead to increased success for players as well as an increase in the quality of their participation (Lee & Ward, 2009). Koekoek and Knoppers

(2015) noted that students saw learning and performance as inter-related, showing their learning by demonstrating ability or executing skills and tactics. This is certainly a prevalent view of what success might look like in rugby. The coach aims to help players improve performance which can and may ascertain success, generally through witnessing certain behaviour that is practiced then performed in a match.

There is evidence presented to show a GS approach can improve decision-making in match situations, which is a key skill of players in an invasion sport such as rugby. On the contrary, there appears to be little correlation between a technique-based approach improving on-field performance. (Gray & Sproule, 2011; Harvey, Cushion, Wegis, et al., 2010; Pritchard et al., 2008; Turner & Martinek, 1999). Work from Light (2004) showed that coaches, applying a GS approach, perceived that players learn to 'work off the ball' (which is supported by the Gray and Sproule (2011) and Miller et al. (2017) studies) and have a superior transfer from practice to the game.

Some quantitative studies have found a positive impact of GS on performance indicators such as decision-making, game knowledge and skill execution, compared to a technique-based approach. Gray and Sproule (2011) (4v4 Basketball, PE setting), Turner and Martinek (1999) (hockey, PE setting) and Miller et al. (2017) (Netball, Sport setting) all designed interventions comparing GS and technique-based approaches. All studies showed the GS groups making significant improvements in decision-making and game knowledge. Turner and Martinek (1999) showed some improvements in regard to skill execution, which may be related to this study being over a longer intervention period (15 sessions). This is consistent with the Pizarro, Domínguez, Serrano, García-González, and del Villar Álvarez (2017) study, which found that U12 footballers make significant improvements in decision-making and skill execution after 22 sessions, but not after the first 11 sessions.

A longer-term commitment to applying a GS approach is recommended to foster improved skill execution for players (Miller et al., 2017). The season length in a rugby context can vary considerably. A typical season of SS rugby in New Zealand may last approximately 15 to 25

weeks including pre-season, so should provide enough opportunity to promote skill acquisition, through a GS context, where short-term campaigns so may conjure up challenges of what to prioritise time on.

Interestingly in the Turner and Martinek (1999) study, the technique-based group did not perform better than the control group (who participated in softball for all 15 sessions) on most measures. This raises the question as to why coaches rely on technique-based coaching, especially if you can play softball for 15 sessions and be on par with students that have actually practiced hockey.

Although it appears that decision-making skills and knowledge are enhanced through a GS approach, all the studies were conducted in small-sided versions of the sport, due to the ability to notate measures more accurately. This may pose problems when quantifying how effective GS is in a 15 aside sport such as rugby. Also, of note, these studies were conducted in invasion sports where the ball was in play with limited time to make decisions and execute skills. Rugby involves a lot of set-piece, where the game stops, which allows time for decision-making. It is unclear, through current literature, whether positive decision-making and execution in structured set-piece contexts can be accelerated.

Contrary to quantitative studies, it is unclear whether players perceive their behaviour changes through GS or if they feel their competence actually improves. Do teenage rugby players feel they get better, more competent or learn through a contextualised approach such as GS? Perceived competence is a player's belief about their ability or effectiveness in their environment (Miserandino, 1996), which is important perceived competence is linked with self-motivation (Papaioannou, Bebetsos, Theodorakis, Christodoulidis, & Kouli, 2006) and retention rates (Gray & Sproule, 2011; Papaioannou et al., 2006; Pritchard et al., 2008), which links with higher-level issues for NZR and Sport NZ.

There is a dearth of research to support how current coaching methods in rugby actually link with behaviour change, let alone improved performance. A technique-based approach has traditionally been used, but the execution in performance often breaks down, which is little

wonder when practices are largely done unopposed (Slade, 2015). Furthermore, what is unclear through current literature is how learning content is acquired through GS. Rugby requires players to learn content such as lineout calls and back attack set plays, so it is of interest if players prefer learning through a lineal progressive process, integrated into games and/or scenarios or other approaches.

Coaches generally want to see evidence of learning in a match (Light, 2004), so it is important that all the effort coaches put in at practice actually helps players feel and see some improvements, as this may positively influence the learning experience and how players perceive their competence (Gray & Sproule, 2011). Coaches often scratch their heads trying to understand why players have not implemented the game-plan or transferred learning from practice into performance. Without this transfer, the coaches' role at practice may as well be made redundant.

Current GS Literature Context

To this point, the breadth of research has not led to how a GS approach impacts on the learning experience for teenage rugby players. The vast majority of GS research has been conducted in school PE programmes, which was confirmed by Harvey and Jarrett (2014) through their review of game-centred studies conducted between 2006 and 2012. More recently, in a review of game-based approaches in competitive sport contexts, by Kinnerk et al. (2018), twenty-three studies were identified, of which eight were done in rugby, with much of the rugby-related research (Evans & Light, 2008; Light, 2004; Light & Evans, 2013) focused on coach perspectives in high performance/elite level environments. Thomas et al. (2013) discussed the player perspective of primary school-aged rugby players. Seven of the 23 papers were conducted with teens (13-18 years), although none were in a rugby context.

Most GS literature to date has been done in other sports such as hockey (Slade, 2015; Turner & Martinek, 1999), football (Harvey, 2009; Harvey, Cushion, & Massa-Gonzalez, 2010; Harvey, Cushion, Wegis, et al., 2010), volleyball (Pritchard et al., 2008), cricket (S. J. Roberts,

2011) and basketball (Gray & Sproule, 2011) and/or done in physical education contexts (Fry et al., 2010; Gray & Sproule, 2011; R. Jones et al., 2010; Lee & Ward, 2009; Mandigo et al., 2008). Harvey (2009), Fry et al. (2010) noted player perspectives on learning, however, very few studies have focused on the player perspectives, let alone how GS impacts on the learning experience of teenagers, which is unfathomable, given that the players are the key participants and have important insights and perspectives (Thomson & Gunter, 2009) that can help shape coaching approaches that fit their needs.

The nature of most GS studies has generally been short-term interventions, which can be problematic for a model that is argued to be a potentially complex model that demands long-term understanding (Harvey & Jarrett, 2014; Jarrett, 2011). The majority of studies which have involved intervention and pedagogical development with key participants (coaches and teachers), have adopted more intimate professional developmental models such as 'communities of practice' (Nash, 2009), mentoring (Gray & Sproule, 2011; Harvey, 2009; Harvey, Cushion, Wegis, et al., 2010; Wang & Ha, 2012) situated learning theory (Jarrett, 2011; Nash, 2009) and a collaborative action research model (Evans & Light, 2008), to help participants understand a potentially complex method as well as support validity.

In summary, the context of current literature has justified a need for this study. No research to date has empirically investigated how a game-centred approach such as GS impacts on the learning experiences of teenage rugby players.

The rationale for the study

Although GS and similar game-centred approaches have existed for the past four decades, they have yet to been adopted to any significant scale in rugby. The coaching experience that is presented to young rugby players, should be considered, especially with the aforementioned concerns of declining numbers of teenagers opting into rugby. And, although some research addresses the benefits of the GS model and highlights the perspectives of coaches, the voice of the key recipients, being the players, has yet to feature prominently in existing research.

Chapter 3: Methodology

Something needs to be done to address the decline in participation and engage teenagers in rugby. Diminishing participation numbers are a concern, so engaging with teenagers to understand their needs requires attention as current literature highlights an alarming lack of youth voice, in particular young rugby players.

It would seem unfathomable to point the finger at teenagers as the focus of the problem, where current pedagogical and structural frameworks may potentially be the root of this conundrum (O'Sullivan & MacPhail, 2010). This study aims to better understand how GS impacts on the learning experience for teenage rugby players, in particular how GS pedagogy is received, with the intention to better support and influence coaches and coach education. Little is known about how coaching through a GS approach impacts on teenagers, so a deeper authentic understanding requires a more intimate approach of learning alongside, observing and listening. By engaging with players to understand what makes meaningful rugby experiences, it is hoped that the experience can be shaped to best serve their needs. However, engaging with coaches is important in shaping the experience for their players, therefore this study adopts a participatory action research (O'Sullivan & MacPhail, 2010) framework to collaborate in partnership with players and coaches. And as little was known about GS in a rugby context, a collaborative approach of constructing knowledge and understanding between players, coaches, and myself as the researcher, best serves the aim of this study, hence a collaborative action research model was deemed as a workable design to elicit answers to the research question upon which this study is framed.

Research Overview - Collaborative Action Research

Collaborative action research methodology is a form of disciplined inquiry that involves a democratic process where the researcher and practitioner(s) (coaches) are considered equal partners (Bradbury-Huang, 2010; Brydon-Miller, Greenwood, & Maguire, 2003; Cohen, Manion, & Morrison, 2007; Evans & Light, 2008). Collaboration was seen as a 'parallel process' (Vella, Crowe, & Oades, 2013) where the coaches, players, and myself as researcher reflected on GS pedagogy together. This study involved an intervention with coaches, with an attempt to generate knowledge and address areas of concern (Evans & Light, 2008), to influence, improve, and steer decision-making and practice (Cohen et al., 2007; Pitney & Parker, 2009) of GS coaching in the teenage space.

I am a coach developer with a heightened interest in GS. Initially, I intended to influence the participant coaches in implementing a GS approach, to enhance the coaches practical application and understanding of coaching (Kemmis, 2009), in particular GS, thus fitting an action research paradigm. I positioned myself as an 'expert' in the field of GS, although soon realised that there was so much to learn, especially in the practical implementation of the pedagogy. I was also committed that the coaches had the autonomy of the campaign (without this, it would seem a contradiction of GS), as well as learning about GS alongside the coaches and players, hence a collaborative action research approach was applied. This approach proved to be rich as insights and reflections from the players, coaches, and myself helped shape the direction of each respective campaign to better suit the learning needs of the players. The coaches and I thrived on an intimate relationship with the ability to work alongside each other to enhance coaching approaches and gain better insight into GS.

Research Design

Two provincial unions (PU) under 18 representative rugby squads (one boys' squad and one girls' squad) were the focus of this study. The coaches from the respective campaigns (the term 'campaign' is used to describe the timeframe including before, during, and after the period of time when the players assembled, as well as encompassing the people involved), implemented a GS approach throughout the campaign, with the thoughts of the players being collected. Each campaign involved the pre-season, where the coaches planned their season, selected their squads, and upskilled in GS; in-season (lasting eight weeks) where the squads assembled to practice and play matches; post-season which involved campaign reviews.

This project adopted qualitative research methods, where data was collected from the players (being the key participants) during the season through observations and FG interviews and, post-season through individual semi-structured interviews. The coaches implemented a GS coaching approach and participated in coach development opportunities. My role as a researcher was to support and guide the coach's implementation of a GS approach as well as to conduct the FG and individual interviews. I was constantly aware of the associated issues and implications of wearing the hat of researcher and coach educator, which is discussed further below under 'where I sit'. Following which all data gathered was analysed inductively using a thematic analysis protocol (Braun & Clarke, 2006; Green et al., 2007; Pitney & Parker, 2009) and subsequently represented through assigned themes.

Research Setting

Both squads played in a regional competition in the upper North Island of New Zealand. Following the SS rugby season, PU's select sides to compete against neighbouring PU's. These boys' and girls' campaigns occurred concurrently, although they practiced in different venues, for eight weeks from late July through to September, with each squad playing four matches in the final four weeks of the campaign.

Participants

Participants for this study were players and coaches. This study set out to understand how a GS coaching approach impacts on the learning experience for teenage rugby players so data from the players was collected, which was done through observations, focus groups (FG) and individual semi-structured interviews. Incidentally, the coaches were viewed as passive participants, as their coaching and behaviour was observed, although perspectives were not sought in the data given that the focus for the study was the learning experiences for the players. As with any study, limitations are required. For this study player voice in relation to their learnings through a GS approach was the focus. And while there were both male and female voices delineated by separate campaigns, a collective player voice that included male and female players was pursued over comparisons between genders.

Players

Players that consented, for the FG and semi-structured interviews were selected at random from the respective squads, in order to provide a range of perspectives (Thomson & Gunter, 2009). Although players that lived more than an hour from the practice venue were not considered for the FG due to welfare reasons, as FG interviews were conducted after 7:30pm. All players were 16-18 years old, so parental permission was not required, although parents were informed and invited to attend the initial information evening. Players were required to be in attendance for more than 80% of squad practices, for data to be used. All participating players met this criterion.

The U18 boys' squad consisted of players selected from co-educational SS's from within the PU. Boys that attended local boys only schools were not considered for selection as these schools competed in the 'New Zealand SS Top 4' competition, which overlapped with the representative season. Boys that played club rugby (school leavers) were not considered for selection also, as they were eligible for the PU under 19 squad (which is made up of only

school leavers). The squad had a total of 13 practices. For the first three weeks of the campaign, the squad practiced once a week on Mondays, as the SS and representative seasons overlapped. For the remaining five weeks, the squad practiced twice a week (Tuesday and Thursday). The winning co-educational SS from the PU competed in a national knock-out competition, where 11 players from this SS, missed the first competition game, although they attended all practices. There were 40 players in the initial squad, which reduced to 32 once the competition matches began.

The U18 girls' squad consisted of players from both SS and club (school leavers). The majority of the players were selected from two schools within the PU. The squad had 16 practices in total, where they practiced twice a week (Tuesday and Thursday) throughout the eight-week campaign. There were 24 players in the squad, of which generally 12-16 players would be present at squad practices, due to the players having other sporting commitments. For example, during the campaign the 'New Zealand SS Winter Tournament' was held, with over half the squad representing their respective schools in other sports such as basketball and netball. Players involved in the lead up to this tournament often had clashes with other sport commitments and were also absent for an entire week of the rugby campaign due to their attending the NZSS Winter tournament. Once the NZSS Winter tournament week finished, attendance at squad practices increased dramatically, despite only the final two matches remaining.

Coaches

Insight from coaches was not collected for this study, as some research focussed on coach perspective exists (Evans & Light, 2008; Light, 2004; Light & Evans, 2013). This study intended to gain a better understanding of player perspectives of GS, due to the lack of research focused on how a GS coaching approach impacts on the learning experience for youth in general, let alone teenage rugby players. Although data was not collected from the coaches, their participation in the study was critical to its success, as they implemented a GS

approach with the participating players. The boys' coaching group consisted of a head coach and two assistant coaches (all male), where the girls' consisted of a head coach (male) and three assistant coaches (two male, one female).

To implement a GS approach effectively the coaches required sufficient pedagogic knowledge, appropriate questioning strategies (S. J. Roberts, 2011) and rugby knowledge (Cushion, 2013; McNeill et al., 2008). The coaches needed to be committed to adopting a player centred approach, thus positioning themselves as more of a facilitator (Light & Evans, 2013) by handing over power to the players (R. Jones et al., 2010). As this was a representative campaign there was also the potential for the coaches to focus on winning by taking on a more controlling approach (Harvey, 2009).

Thus, it became imperative that I as the researcher collaborated with coaches who had an understanding of and eagerness to improve GS pedagogy, have an open mind to learning, and be committed and reliable. Two head coaches were approached about being part of this project. Both were experienced rugby coaches (8+ years), had good rugby knowledge and had some experience of and were interested in upskilling in a GS approach. I (who also led the appointments of representative coaches) reiterated that the programme was focused on player development rather than performance outcomes (competition placement was vacant from campaign objectives). Both coaches felt that a GS approach would in fact accelerate the performance, whilst also fostering rich development for their players, so bought into this approach. Subsequently, assistant coaches who had strengths or interests in GS were then appointed to support the respective campaigns.

Procedure

This study involved three phases to namely 1. Coach upskill, 2. Data collection and 3. Data analysis.

Phase 1: Coach upskill

The researcher worked collaboratively predominantly with the head coaches, but also the assistant coaches of each campaign, which has been seen as a favoured approach to such research and coach development approaches (Evans & Light, 2008; Harvey, Cushion, & Massa-Gonzalez, 2010; Pill, 2015). Collaboration with coaches was conducted using three approaches; work-shops and discussions, individual observations and reflection, and reference to literature (Evans & Light, 2008), in an attempt to upskill in GS pedagogy (to support accuracy of data) and for the coaches and I to gain fresh insight on relevant learnings in a rugby context.

The coaches attended an initial workshop before the campaign started, where the study was outlined, with some discussion and debate around GS. An experienced coach in GS pedagogy attended this workshop to add value and insight. The workshop was framed around 5 topics 1. Playing games v game scenarios, 2. Structured v unstructured, 3. GS approach v technical approach, 4. How to get player 'buy-in,' 5. Framing season.

Following the first workshop the coaches had the opportunity to apply GS principles such as game design and questioning approaches with a club rugby team of 10 and 11 year-olds. This proved valuable as the coaches could observe each other, reflect, and build their competency in GS. The coaches from both squads and I had one more collective meeting three weeks into the respective campaigns to share learnings and ideas.

Once the campaigns began, I would communicate regularly with the head coaches, either via a phone call, email or in person to discuss squad practice plans and share relevant literature. I then attended squad practices (8/13 boys' practices, 9/16 girls' practices in total), to observe and then review observations with the coaching group. This process allowed the coaches and I to collaborate and grow understanding and practical application of GS. It was not feasible for me to be at every practice as the squads practiced at the same time, but at different venues.

Phase 2: Data collection

This study is qualitative by design, aiming to depict insights and interpretations of teenage rugby players. Qualitative research offers challenges for making meaning and interpreting generated data (Pitney & Parker, 2009), such as data volume and the time taken to interpret that data (Green et al., 2007). The focus of data collection was on players, which was done through observations at practices, FG and individual semi-structured interviews.

Observations

While I was attending practices to observe and support coaches, the observation focus was on both coaches and players. It was important to observe both how the coach was implementing GS principles and session plans and how the players were responding to the coaching. Observations were made and fieldnotes were compiled directly at squad practices. I positioned myself in the best place to observe practice situations as well as see and hear interactions between coaches and players, without being too obtrusive. Occasionally video and audio devices were used to capture moments from practice, such as games and coach questioning. The fieldnotes were collated into a detailed document immediately following practices. Ultimately, observations of the practice and player response, interaction and behaviour, were used to frame reflective conversations with the coaches and inform questions for FG and individual interviews. Additionally, observations were used to supplement player voice through the research findings.

Focus groups

FG interviews of eight or nine players, were chosen to allow a large group of players to give their insights in a less formal setting (Liamputtong & Ezzy, 2005). There was also the opportunity for the players to feel safe with their peers, whilst also allowing for discussion between the players (Pitney & Parker, 2009). Food and beverages were provided to help make the players feel more comfortable, whilst replenishing them following practice. FG's met

fortnightly, three times throughout the campaign, initially in the fourth week (before their first competitive match), two weeks later and then in the final week of the campaign, before their final match (see table 1 for FG attendance). The allocated times allowed ideas and rapport to grow over time. GS is considered a long-term investment (Light, 2004), so meeting with FG throughout the season allowed participants and I to evolve our thoughts and understandings together, whilst potentially helping validate data without environmental factors (Franklin & Ballan, 2001) such as performance results impacting too heavily on their perspectives.

The boys' FG initially consisted of eight players. Following the first FG, one player left the campaign, and two players were to be absent from the second FG, so two additional players were added for the second FG and thus remained for the third FG. The girls' FG consisted of nine players, which remained consistent throughout the campaign. Not all players, in either the boys' or girls' FG were present for all interviews.

I conducted the FG interviews through a semi-structured process. Questions generally started by focussing on the practice that had just occurred, where I referred to fieldnotes. The interview then shifted to a set of pre-planned questions (see appendix F). The FG interviews were held in the clubrooms adjacent to the respective practice venues. All FG interviews were recorded and later transcribed verbatim for analysis. The following table represents how many participants attended each session.

Table 1: Number of participants per focus group

	FG session 1	FG session 2	FG session 3
Boys	8	7	8
Girls	9	8	6

Individual semi-structured interviews

To achieve a fine-grained appraisal of player learning experiences, four players (two boys, two girls) were interviewed individually, two to three weeks after the conclusion of the eight-week campaign. FG interviews can be an intimidating process for some participants who may not feel safe voicing their opinions in front of their peers (Cohen et al., 2007). Semi-structured interviews were therefore used to allow further opportunities to gain a deeper understanding (Cohen et al., 2007; Kvale, 1994; Pitney & Parker, 2009) from players regarding how they perceived GS. These interviews gave the players a voice and for me to further seek understanding, update, and improve learning on GS pedagogy. They were interviewed in a venue of their choice, such as their school or PU headquarters. The questions were a combination of pre-planned questions (see appendix F) and questions determined inductively following the FG reflection process.

Both the FG and individual interviews considered skills, such as establishing rapport, using quality questions, probing, listening skills, and allowing response time all to help improve the quality, accuracy, and ultimate success (Barriball & While, 1994), as well as reading body language to know when participants might be feeling uncomfortable about carrying on (Pitney & Parker, 2009). The capability of myself as interviewer and how I conducted interview ultimately determined the quality of the data (Green et al., 2007).

I transcribed FG interviews almost immediately post-event, which allowed an opportunity to reflect on and improve on the stated skills continually throughout the process. As an added measure in improving these skills, a FG interview was piloted before the study, with a group of players who were not part of the study. This helped to iron out any potential issues such as whether respondents could and would answer questions, the performance of myself, with the opportunity to fine-tune questioning techniques and other potential problems (Barriball & While, 1994; Gill, Stewart, Treasure, & Chadwick, 2008; Whiting, 2008).

I considered how my position at the PU would influence their confidence to speak freely, as potentially I could have been viewed as an ‘authority’ figure within the local rugby circles.

However, as it unfolded, a strong rapport of trust ensued between the players and I, where they thoroughly enjoyed giving their insights and were most forthcoming. Most topics that were discussed might be considered safe, although some more personal thoughts (such as relational challenges with other players or coaches) were shared, in confidence.

The interviews were recorded (via audio device) and then transcribed. Participants were allowed the opportunity to read and update a copy of their transcript (Becker, 2009) to improve quality and accuracy, although no participants requested this opportunity. The data from observations, FG's and individual interviews formed the basis of the subsequent thematic analysis.

Phase 3: Data analysis

Data analysis is a systematic classification process to sort collected data (Green et al., 2007), which requires careful attention to generate themes to report. Thematic analysis was used in this study to analyse data generated from the FG and individual interviews. This process is a way of identifying, analysing and reporting patterns from the collected data (Braun & Clarke, 2006; Pitney & Parker, 2009).

Where I sit

At the time of the data collection, I was employed as PU coach development manager participant representative squads, where I already had established relationships with the coaches before this study. The coaches needed not to feel coerced into participating in the study, as I oversaw the coach development programmes and appointments of the representative coaches. The coaches were assured that their involvement was optional and was not a necessity to being a representative coach. The coaches naturally had a heightened interest in GS, so a conflict of interests was avoided.

My experiences of educating and observing coaches led to a great fascination in learning and engagement for rugby players and sport people in general. My background and experiences

have led to a natural bias towards GS pedagogy. Reflexivity needed to be demonstrated by understanding my position, potential strengths, and limitations of this position and reflecting on the investigation, research methods, and conclusions (Guillemin & Gillam, 2004; Malterud, 2001; Pitney & Parker, 2009) with the goal of taking a more neutral position.

Researcher bias is a consideration when interpreting data and something that is hard to avoid (Malterud, 2001). I conducted the interviews, had a rich history and advocation of GS, so had to work hard to interpret findings as neutrally as possible. In my role as a coach educator, the purpose of this study was to interpret and report on data in a way to better support coaches and influence more relevant coach education frameworks with the hope that teenagers will benefit. This focus allowed me to approach data analysis more neutrally than if the purpose were to push an agenda of GS.

This study is framed by a thematic analysis process as espoused by and Braun and Clarke (2006), Green et al. (2007) and Pitney and Parker (2009).

Reading through transcripts

I transcribed and immersed myself in the data by reading through the data following each FG interview to familiarize myself with the data and potential themes. Re-reading and listening back to the interview audio was also applied throughout the study's duration (Green et al., 2007) to make meaning of potential themes. Initial theming of new data and insights were generated as the study and interviews unfolded (Braun & Clarke, 2019; Green et al., 2007; Pope, Ziebland, & Mays, 2000). Interpretations of generated themes were either fed back to the coaches, to support them with their application of GS, or explored further with subsequent FG and individual interviews.

Assigning labels

Once all interviews were completed and transcribed, I applied 'labels' (also commonly known as 'codes') which were used to interpret meaning from the transcripts (Pitney & Parker, 2009). By assigning labels or coding, data was able to be categorised, to group together findings and

uncover any potential patterns (Braun & Clarke, 2006; Pope et al., 2000). This was done by initially making notes in the margin (Green et al., 2007), then typed onto the transcript to help with the theming process.

Theming labels

Thematic patterns developed through the labelling process, although a more thorough process of organizing the labels into similar themes was needed (Pitney & Parker, 2009). Once the transcripts were labelled, similar labels were catergorised together to identify high-level themes. To uphold the integrity and uniqueness of data collected from each campaign, labelling and theming was separated into boys' and girls' campaigns.

Interpreting and verifying themes

Initially, themes and results were drafted separately, although were merged to uphold the intention of the study, which was understanding how GS impacts on the learning experience of players, rather than a study focused on gender differences. Of note, through this process, it was evident that many themes were highlighted in both campaigns, which aided themes being merged. My supervisor and I met regularly to discuss themes and apply a triangulation of the data (Anderson, 2010). For example, the supervisor read the initial results draft and reported back on thematic interpretations. This process helped clarify identified themes to shape the thematic results of the report.

Ethics

Face-to-face FG and individual semi-structured interviews pose certain ethical concerns such as confidentiality, rights to participate and withdraw, informed consent, and beneficence (Cohen et al., 2007; Pitney & Parker, 2009). Before the commencement of this study approval was sought and gained through the University of Waikato (see appendix G). Given the nature of this research specific ethical considerations were afforded to specific areas, such as informing the participants on the nature of the study, informed consent of players (including parents), right to withdraw, anonymity and confidentiality (L. D. Roberts & Allen, 2015).

Informed or voluntary consent

All players (and interested parents) were informed of the nature and purpose of the study (Gill et al., 2008) at an information evening at the end of the first practice for respective squads. An information sheet with details (see appendices A and B), plus a consent form (see appendices D and E), were provided. They were then offered an opportunity to ask questions and grant consent at a suitable time. As players were all 16 years or older, they could give consent themselves, which was done before the first FG. They were informed that they could withdraw at any time, as well as refrain from answering questions or attending FG sessions.

Anonymity / confidentiality

No PU, school or individual names were used in the research, to protect relevant identities, thus pseudonyms were allocated to each participant. This information was communicated at the information evening(s) and stated in the consent form. The identity of FG participants was known (informally) to the squad and coaches, as they were conducted immediately following practice. Players were informed that their collective ideas might be shared with coaches as at times, there was a need to feedback learnings from FG interviews to the relevant coaches to improve and better understand GS, capture positives and adapt certain aspects. However, only key themes with group consensus were shared back, with no reference to individual players. The identity of participants in the individual interviews was not known to teammates or coaches, as they were conducted following the campaign.

Summary

In summary, this study adopted a collaborative action research approach, where I as the researcher worked alongside the coaches of two U18 provincial representative rugby squads (one boys, one girls) to implement a GS coaching approach. I led and supported the development of the coaches through an initial workshop, observation and feedback, as well

as relaying relevant themes from focus groups, to better understand and implement GS together. Data was collected through observations at squad practices and seeking out perspectives of the players (who were the key focus of this study), through focus group and individual semi-structured interviews. The data was interpreted using a thematic analysis process.

Chapter 4: Results and Discussion

Rugby is a multi-faceted sport, which involves a balance of structured and unstructured play, large squad sizes with varying positional demands, and high levels of body-on-body contact, which all pose challenges for coaches. A GS approach was implemented by coaches of both a boys' and girls' representative campaign, where the perspectives of these players were sought to better understand how a GS coaching approach may impact on their learning experience.

The following chapter outlines that the players felt that practices should replicate the realities of a rugby match. Replicating reality was best achieved through suitable practice design, practising against opposition, integrating contact into practice and employing a questioning approach. All this is best achieved through a culture of trust and inclusiveness, which appears to be critical in successfully adopting a GS approach. Results will be outlined in five sections, with a discussion following the results of each section.

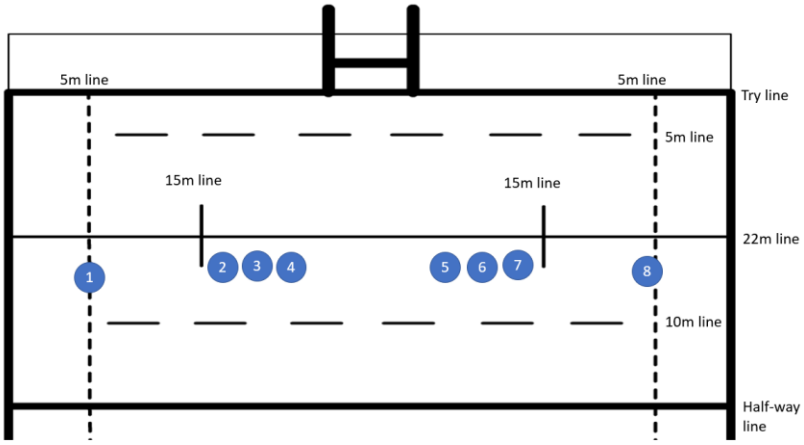
4.1 Practice Design: The Mechanics of 'Getting it Right'

Often coaches 'tear their hair out' after conjuring up attacking game plans and practice activities only for players to fail to execute these in match situations, as often practice environments are frequently far removed from the realities of the match. Getting the game or practice environment right is no easy feat and not to be underestimated (Harvey, 2009). The coaches of both squads and I spent a lot of time designing (and then reflecting on) the practice environment (including games, scenarios, activities, drills) to replicate the contextual demands of a rugby match, which made sense to Chloe where she summarised 'in a game, you don't rise to the heat of the battle you sink to the habits you've created in training. You need to train how you want to play. I think that's what it comes down to.' The coaches balanced practising both structured and unstructured aspects of rugby to support players to execute the relevant game plan, systems, and skills.

Learning game plan: attacking system

Both squads aimed to implement an attacking game plan that utilised players across the full width of the pitch. A 1-3-3-1 attacking system was adopted by both squads to encourage teams to use all fifteen players to exploit space in opposition defences, by positioning forwards across the pitch in four mini-groups; one forward is situated on either side of the pitch, between the 15m line and side-line and two groups of three forwards together between their respective 15m line and the centre of the pitch. Traditionally, rugby coaches will utilise unopposed 'run-throughs' to practice and perfect attacking systems, potentially due to tradition and lack of playing numbers. Both coaching groups in this study applied a range of approaches including games and scenarios, utilising incentives and consequences to support player learning. The boys' squad had success executing this game plan in matches, whereas the girls' squad did not. It was unclear whether this was due to player ability, the quality of opposition, practice design, or other factors.

Figure 1: A 1-3-3-1 Attacking System



Note: The images with numbers 1-8 represent the forwards of a rugby team. The numbers do not represent playing positions.

The boys' practice environment was designed for the squad to constantly practice this attacking game plan in 15v15 situations. Early in the season, the boys' coaches conditioned a consequential rule that the attacking team had to be in the 1-3-3-1 system, or the ball would be turned over. The game was 15v15, where the play would start from set-piece scenarios such as lineouts or scrums. Players learned the attacking system quickly as they did not want the ball to be turned over.

The girls' squad had fewer players to practice using this method, although they identified how the practice environment may have influenced their attacking success. After playing three matches, they were not executing this game-plan to the level they hoped, where they had generally played a forward orientated game. The half-back would pass to a group of three forwards (referred to as a 'pod') to run forward, which would generally involve one player running the ball forward to be tackled, with the other two players supporting to secure the ball. I drew upon fieldnotes to highlight to the coaches, that four of the six practices to that stage of the campaign, had been spent practising forward pods, with the major focus of forward pods being to carry into contact, with little ball being handed to the backs and thus negating the opportunity to get the ball to wide spaces. The coaches reflected on these notes and felt they had identified a clear link between practice design and performance. From this discussion, a new refinement was formed for the next practice.

A game was designed (Three Zone Game) where three linear channels were marked out down the pitch (two wide channels and one middle channel). The two wide-channels nearest the side-line were 15m wide. The game started as touch, where the player in possession of the ball would go to the ground after being touched to simulate a tackle and ruck situation. Two teams of eight formed, with the half-back and flyhalf playing on the attacking team who had possession. The attacking team could only be touched on one occasion in the middle channel (if the attacking team was touched twice in a row the ball would be turned over), so would then need to work to get the ball to attack in a wide channel. This rule forced the attacking team to attack wide channels as opposed to keeping it in the middle of the pitch, whilst also

encouraging the attacking team to find space to exploit. After some inevitable errors and confusion, Scarlett felt that the design of the game worked well to replicate the desired game plan assenting:

> Because in the game we do take it in the middle channel quite a lot and I think that game created the awareness to take it wide, we need to change it, we need to take it out wide and not in the middle too much. And like having the limited amount of times we could take it in the middle was good.

This game also replicated positional demands on players. For example, playing an expansive game plan where the ball moves from side-to-side can be physically demanding for half-backs. Half-backs are required to be at every ruck, so they can get the ball to provide continuity. The Three Zone Game replicated the amount of running a half-back would be required to perform, along with challenges that would require decisions from other players. Emma played half-back and found this game difficult due to the amount of running, whilst acknowledging her frustration of her teammates' failure to react.

> Oh, maybe like if say because I'm half-back and I'm on this side of the field at wing, then I pass it and they keep passing and I'm all the way over here and I'm tired, and I like can't get there, sometimes they [teammates] just stand there and watch the ball when I'm not there. And I'm like really tired and tried getting other people to grab the ball out and pass it and be half-back kind of, because it was so far away from me.

Consequently, following this practice the playing team executed their best performance of the season, playing with width and confidence to dominate the opposition. Although it is unclear whether this success is related to the practice environment, opposition ability or other factors.

Learning game plan: defensive system

The girls' coaches felt that opposition teams were exposing their defensive line, on the fringes of the ruck. The squad then adopted a strong emphasis on the defenders closest to the ruck ('rocks') being set in position to make tackles around the ruck. The defensive coach designed

the Rock Game, where if an attacker could run through the space, then it was an automatic try. Initially the attacking teams scored tries by running through that space. ‘Through mini-team discussions, the players diagnosed that they needed to prioritise a ‘rock’ defender to avoid conceding tries’ (Fieldnotes, September 10, 2019). Alice understood the importance of having a defender at rock. On reflection, she reasoned ‘I think it’s really crucial because it does happen in the game, so like the number nine [half-back] is not going to go for it [the space].’ She identified a transfer of learning from that practice to the following match, ‘because in our last game against [opposition], like they wouldn’t have any rocks and then Emma was just picking all day, so you can see how crucial it is.’

Alice identified that the Rock Game also incentivised the attacking team to attack that space, into the last match of the season. Subsequently, ‘through the Rock Game, the head coach worked with Emma (half-back) to get her looking at opportunities next to the ruck (mainly to help the defensive team practise) and then attacking that space if the opportunity was presented’ (Fieldnotes, September 10, 2019). In the last match ‘Emma made numerous line-breaks by running through the space where the rock should be’ (Fieldnotes, September 21, 2021), which she felt was due to both the impact of the game and the guidance of her coach. Emma explained that ‘I think it [the Rock Game] gave me a lot more confidence because he [head coach] was telling me to just look up and run it if there was no one there. So that gave me a lot of confidence to run it from half-back.’

Encouraging transitional play

‘The boys’ squad was practising in a 15 v 15 scenario. The attacking team threw the ball into the lineout, Ryan successfully won it, where Liam passed it to James. James knocked the ball on. The head coach put his whistle to his lips, to then suddenly refrain from the temptation to blow it. The opposition players quickly pounced on the ball and counter-attacked to the other end of the pitch. Eventually the play stopped. As the players made their way back down the pitch, Liam and James spoke together,

> problem-solving what they could do differently to get their timing better. The coaches remained silent, while the players re-organised themselves. The same lineout was repeated. This time James executed the set play, to put his team in a strong attacking position' (Fieldnotes, September 17, 2019).

Based on the research from Mckay and O'Connor (2018), which highlighted the large instances of transition play in rugby, such as turn-overs and kick returns, encouraging transition play became a big focus for the coaches of both campaigns. Often, coaches intervene following errors, by stopping and asking players to repeat certain actions. There may be a temptation for coaches to blow a whistle to bring order, although this can be detrimental to what players will experience in a match. For example, rugby referees are encouraged to play advantage following errors and turnover, to allow for more continuity, so coaches would be encouraged to allow practice scenarios to evolve following turnovers and errors.

It was clear that players from both campaigns were not in tuned to transition play and would often stand still, especially after errors. Initially coaches would say 'play on' to encourage players to react. Once players became used to expectations around transition play, the coaches transitioned to remaining silent (which was initially a challenge for the more vocal coaches), to allow players to self-organise, both individually and collectively, whilst moving quickly into positives position. As a result, the players became more adept at transitional play, as well as problem-solving together. Consequently, the boys' squad scored a large number of tries in their matches from turn-over ball where they would exploit apathetic efforts from opposition teams. The girls took longer to respond to this approach, which may be due to their limited rugby experience, as a large proportion of players were in essence still learning the basics of rugby. However, Scarlett saw the benefit of practising transition play rationalising:

> I reckon that would create discipline because in a game we do get quite frustrated when the knock-ons are called and stuff. It would be good discipline for us to switch from attack to d. Because in a game we get quite relaxed, well not relaxed. We're not assertive, like in the game, with knock-ons, people are walking slowly.

Isla agreed venting ‘there’s been a couple of times when girls have dropped the ball and they just stop and look at it,’ which was supported by Maia. She confirmed ‘yeah, it happens outside [practice]. It happens [girls standing still] at our trainings so it’s gonna happen in a game. Like it happened in our last game.’ She also felt that allowing play to continue ‘made us think even more.’

Keeping the ‘whistle in the pocket’ was a simple approach applied to foster transitional play. Encouraging coaches to avoid intervention following errors was certainly a challenge for some in the coaching group. Often, coaches feel the need to be actively involved and leading discussion through questioning and/or giving feedback. However, it was felt that to replicate the realities of the match, the coaches needed to remain silent at times to allow players to work together.

Skill development

Practising skills through small-sided games was a fresh approach for players of both campaigns, who had traditionally experienced skill development through closed drills, which do not always replicate the realities of a match. Matthew was receptive to a GS approach arguing:

> When we do game plan stuff, doing it in different places, different situations, different gaps and stuff, instead of the drills where we are on cones, and we know where we are going. I mean in attack it’s like anything can happen really. So, it’s better to do some game-play stuff.

The coaching groups predominantly used small-sided games to support skill development, for fundamental skills such as passing, vision/decision, tackling and ruck, especially in the early stages of the campaigns. The players were thoroughly engaged in this approach as it was a fun approach to learning skills, whilst also practising in a more realistic match-like environment.

> ‘Players were heard leaving the pitch saying, ‘it was a mean training.’ In fact, one of the senior women’s players from the adjacent pitch came over the end of her own team practice and said, ‘I reckon if I played all those different types of touch games, I’d get so much better, as drills you get used to what’s happening and you can cheat them’ (Fieldnotes, August 1, 2019).

The coaches of the boys’ campaign designed the entirety of their fundamental skill development blocks through small-sided games. However, the girls felt that they needed some technical coaching through drill-based approaches so they could grasp some of the technical requirements for rugby, which appeared to support the work of Gray et al. (2008), which highlighted boys having a higher preference for games than girls.

Small-sided skill fame: vision/decision

A popular game that the boys’ squad used throughout the campaign was Kick-out, often intending to support vision/decision skills for attacking players. One team would kick the ball from their try-line to the opposition attacking team of 15 players. The defensive coach would work with the kicking team and give them certain constraints such as reduced players (often 8-10) or leave certain spaces across the pitch to help the attacking team identify opportunities to attack. This method proved popular with both players and coaches as there were opportunities to problem-solve between each set. Steven felt Kick-out helped decision-making explaining:

> That was pretty cool, because when it is kicked out, there is staggered defence, so sometimes you only end up with having 8 up front. So, it was cool as it trained us to not just look into the ruck because you have to look outside. There was this one time when I was on defence and [the coach] told me to leave a gap right in the middle and they never hit it eh. It was pretty crack-up.

He felt it helped with his vision/decision skills because:

> ‘You had to really think about it, because you have to find the gaps or you’re not going to score really. It was like you had to think a lot more and have a think for a second and see where the defence is and call it on that.’

On top of individual decision-making, it was noted that ‘there was a lot of problem-solving and dialogue between players when the game stopped and, also when the game was going’ (Fieldnotes, 29 July, 2019).

Small-sided skill game: tackling

The girls’ head coach designed a game with a constraint where only one person could make a tackle at a time. This was designed to help the players tackle low around the legs to bring the ball carrier to the ground quickly and safely, without the support of teammates, as sometimes supporting players can cause confusion and complacency. Emma understood the rationale for the rule and how this practice approach transferred into matches vindicating:

> The one that I kind of enjoyed was when there was only one person had to tackle, two people couldn’t tackle the person running with the ball. Getting lower in the tackle, cause in the games we were always going high and could never get the players down. And we got told that we needed to tackle lower, and it worked [in the next match] and we got them down straight away.

Small-sided skill game: ruck

In both campaigns, the coaches used Ruck Touch to support skill development of ruck and contact skills. Often touch games were used, where the ball-carrier, once touched in possession would go to the ground to simulate a tackle. The coaches would allow the defensive teams to compete for the ball on the ground. This encouraged the ball carrier to protect the ball on the ground and support players to arrive quickly to secure the ball and remove and defensive players. This approach replicated realistic pressures players would experience in matches, such as ball presentation, ruck technique, decision-making, and

turnover skills. Emma, who played half-back felt this added pressure helped her game. She confessed ‘I needed to get to the ball faster and I had to talk a lot to the forwards to get over and seal. And I need to get the ball out fast and look and listen to where the ball needed to go and what moves we were doing.’

Drills

Many of the girls were new to rugby and at times, putting them in open-ended practice environments appeared to cause increased stress and potential disengagement, as witnessed through observation notes:

> The girls played the Three Zone Game. There was a bit of confusion about some of the rules (the half-back and flyhalf changing teams). They got really frustrated with each other and stopped engaging with the game. Emma ended up in tears. Of interest is that this behaviour hasn’t been evident through drills that the coaches have started adopting from time-to-time.’ (Fieldnotes, September 17, 2019)

It became evident that the girls thrived on learning technical skills such as tackling and ruck techniques, in a closed-drill approach. This appeared to give them confidence before going into open-ended scenarios and games. Zoe was new to rugby and enjoyed skills being taught in isolation, exclaiming:

> Last Thursday there was only 8 of us… We did tackling and [the coach] was coming around and helping us how to tackle properly and how to catch off the kick-off. And, how to like run your lines straight and stuff and when to like tip the ball and everything. And there was only a couple of us, but it was like helpful... Especially for me because I’m new to it, so it’s like nice to get that because I haven’t really been taught all that basic stuff yet.

Technical drills were added, generally through warm-ups, as the season progressed, which fitted the girls’ needs, with Sophie remarking that through the drills ‘we learnt a lot.’ Zoe felt this approach helped learning ‘stick in our brain better,’ where according to Sophie it was ‘like

body memory, muscle memory.' This approach allowed the coaches the opportunity to provide individual or small group feedback. Ruby felt warm-up drills would transfer into match situations explaining 'so when someone's coming or running to me and I'm making a tackle I will always think what I've learnt here or from anyone, like 'punch through' or 'get lower' or 'wrap' or that and if I don't do it, I try to do it the next tackle kind of thing.'

There was, however, the consensus from both boys and girls, that overusing drills was, or 'being treated like robots' as Liam described it. Early in the girls' campaign, the coaches prioritised large periods of time for the team to learn the forward pod roles. The players enjoyed learning this content and testing their skills under defensive pressure, increased contact and reduced timeframes. However, at one practice a drill lasted 40 minutes. The drill did replicate a part of the game, although the players had grasped the concept quickly and were ready to be stimulated in different ways. Sophie felt it needed to be adapted. She lamented, 'when we were doing the pod stuff, we did for so long, doing the same thing, with like nothing in between, like nothing like a brain booster.' Isla also quickly lost interest bemoaning:

> When we first started doing that 3 pods it was really interesting and all the girls were like 'yeah ok' lead, give, carry and all that and then when we started adding a volcon [a play where the ball-carrying forward would pass to a back] it made it more exciting, but now that we've done it 3 or 4 trainings, I feel like it's just like going through the motions.

This feedback was discussed with the coaching group, and it was decided to restrict the amount of time spent in drill-based contexts to ten minutes and spend more time developing skills in games and game scenarios, to simulate realistic match pressures as well as retaining heightened engagement.

Matthew had experienced straight line passing waves in previous campaigns but felt it did not replicate the demands of a match as he reasoned that 'everyone can pass but can they do it while running a hard line while looking for space at the same time and being able to catch a ball under pressure.' The coaches worked hard in collaboration with each other and me to

make practices replicate rugby as much as possible, including any drill-based coaching, such as live tackling. Ruby felt that practising live tackles in a match-like context, stretched her ability stating 'he [the coach] was running hard to us [in a tackling activity] and like actually stepping because I'm only used to girls running it straight. Like if they do footwork, I'm like "oh." I had to like adapt.' The girls' coaches would set up tackling drills to look and feel different depending on what position the girls played. For example, forwards will generally make tackles near to their opposition so are operating in small spaces, compared to a full-back, who will generally have a large space to defend and under huge pressure. Isla played full-back and reflected on a tackling drill that the coach set up, which was slowly adapted to meet her personal and positional needs. She enthusiastically explained:

> When we were tackling at first, she was making us tackle front on, but for me, I like tackling on the side and soon as I tackled on the side I asked her about it, she [coach] just said 'do what you feel comfortable tackling from.' Then, as soon as I tackled from the side, that tackle was 'fricken' on. And so, she was like 'ok, you just keep tackling like that because that's your strength.' So then after that I just kept tackling, it just made it easier for me, so when I tackle like that in a game, because I don't really tackle front on in games, so it was better to get that information instead of learning a whole complete tackle that I would never do in a game.

Learning content through progression

Rugby differs from some sports, as it has a large emphasis on set-piece play. 44% of possessions will come from a structured set-piece such as a scrum, lineout, and kick-off (Mckay & O'Connor, 2018), so it lends itself to teams practising and rehearsing set-plays and team attacking systems. There is a high amount of content for players to learn, such as lineout calls, back-line strike moves and team attacking system calls. Learning this content is vital for teams to be successful in gaining and retaining possession. For example, the forwards require clear lineout calls so the jumper, lifters, and throwers can coordinate to win the ball. Ryan

suggested ‘you need to do a few of what your lineout calls are before playing, and that just going out and playing without knowing the calls would be silly.’

The coaches tested different methods of presenting content to the players, such as start at the end and work backwards, progress slowly, learning the whole, learning a part. The players of both campaigns were aligned that they preferred progressing in a linear fashion where they learned the content, then slowly added pressure to test their skill set and understanding. Lucas wanted to ‘know what to do first, then those game-like ones so you can actually like put it to use and start thinking more. Then you have like real attackers,’ where Emma wanted ‘it down packed and then add in the defence to add pressure. Because, sometimes when you’re under pressure you forget everything.’ These views were shared by Maia explaining that ‘I think we just need a bit more time to kind or work out a strategy of how we could get them up quicker [lineout lifting], because we did have another three contesting, so it gave us a bit more pressure.’ Once the coaches understood the players’ preferences for a progressive linear approach, they often slowed down practices to allow the players to get confidence with the set-plays, or focusing on a small part, such as role clarity within the 1-3-3-1 attacking system, before going back into a game situation. Liam appreciated the time to learn set-plays as:

> We actually got time to go through things, like our backs sussing out our line running and our moves and then it was better in the team runs. Because everyone knew what the move was, everyone knew what was happening. Execution wasn’t there at the start, but it got there.

The boys also preferred learning content through a more drill-based approach where there was predictability and little decision-making pressure associated with having opposition. The coaches set up closed drill contexts that replicated match scenarios to support content learning, such as parts of the attacking system, defensive scenarios, lineouts, and back attack. The players enjoyed this method of learning content as James argued, ‘The drill makes it seem a lot simpler than if they were like to just tell us and explain it to us and then just put us straight in a game situation.’

Once the players had learned content, games, or scenarios, they generally responded well to pressure being applied to stretch their learning, with Ryan explaining:

> I think you should always progress it to make it slightly harder because that way you start and are challenged. And once you work that out you go to the next thing and you are challenged again, then go to the next thing and you're challenged again. You slowly work it out until you've got it, so you get better.

Examples of progressions that the coaches utilised, were adding new rules, opposition, time and space constraints (Grout & Long, 2009), kicking out a new ball to play from and increasing levels of contact.

Design: rules, space, people

A large proportion of practices involved games and required the coaches to design games to maximise learning. The STTEP principles (Grout & Long, 2009) were referred to in adapting the tasks/rules, space, and people. Rules appeared to pose the most challenges for the coaches in 'getting the game right.' Rules have the intention of encouraging and discouraging certain behaviour and needed to be delivered in a simple and concise manner for players.

Learning game plans and developing skills through carefully designed games was a big focus for both squads, although it became clear that keeping rules to a minimum worked best. Harry appreciated the coaches keeping things simple explaining 'we're just not trying to do 17 things at once. And I'm not the smartest guy, so it's like, you tell me one thing, right oh that's fine. You tell me five things and I'm like 'f…', what do I do now?' In the early stages of the girls' campaign, games were often designed with too much complexity through many rules or constant introductions of new rules. This was due to coaches wanting to get a lot of content across to players in a short time. One game observed, involved two teams of eight playing ruck touch against each other. When the ball carrier was touched, they would go to the ground and set a ruck. Each team was granted five rucks to score and had to use four different plays that they had learned. 'Blue' - get the ball to the right edge, 'gold' - get the ball to the left edge,

‘set’ – three-player group set up for a pass from a ruck and a ‘volcon’ where the middle player from the ‘set’ would pass behind them to a back. An assistant coach refereed the game and became extremely confused along with the players, where she lost confidence and handed the whistle to the head coach to manage the game. The players failed to implement the calls as there were too many rules and instructions. The players failed to get much out of this game as they did not implement the calls. Isla was rather frustrated explaining:

> I feel like there were too many rules like given, like at one point we were all like thinking of all the rules we had to do so it would, like all our plays and attack just kept getting all like, muddled up and it kept getting real confusing. It was unorganised and that because we were thinking of like all the rules we had to play in those situations and then after we just, we kind of just ended up playing what was in front of us.

The head coach and I debriefed following this practice and player feedback, which led to the coaching groups designing games and activities with one or two rules to reach the desired outcome. Once players grasped the game design, new rules could be added to increase pressure and stretch learning.

It became evident that if the coach could skilfully provide an explanation of the purpose and design of the game, then the players would engage quickly, the game would flow and thus achieve the desired outcomes. Even with clear, concise explanations, there was generally a time-period where some confusion existed for players until they grasped how the game looked and felt.

The Three Zone Game was an example of how a lack of rule clarity could derail a practice environment.

> The half-back and flyhalf were required to change teams to be on the attacking side. The coach wanted these players to practise their attacking combination, whilst overloading the attacking team to exploit defensive space. Initially, the players did not grasp this concept as the rationale and functionality were not explained clearly. Once the game started there was mass confusion, which led to conflict between Ruby and

> Emma. Ruby swore at Emma, who was left in tears. The tension within the squad rose, so it was decided that the half-back and flyhalf would remain in the same teams to reduce confusion and conflict (Fieldnotes, September 19, 2019).

There was an underlying tone of tension within the squad, which will be discussed (see chapter 4.5), although this situation demonstrated the importance of clear simple rules, which are communicated effectively as players became frustrated when there was confusion. Emma's learning experience was impacted, where she disengaged from the practice from that point.

With all skill games, the pitch size needed to be considered. For example, the girls progressed a touch game into contact, although the space was too big, so it did not achieve the desired results. 'Players were avoiding contact to keep the ball alive' (Fieldnotes, September 19, 2019), where the coaches wanted more contact to replicate what they would experience in a 15 aside match. Isla commented 'I think maybe we should have made the field a bit (smaller). Like I get like we were trying to do wide to wide, but with the amount of people we had in our teams it felt like we were pretty much playing a 7s game.'

The girls also noted that having even teams was preferable as if key players were grouped together, they could dominate the game, where their opposition might lose confidence. Zoe felt that the coach 'should pick the teams or something. Cause then it's just not very enjoyable, cause I hated that [game].' Isla felt that:

> He [the coach] just needs to switch a couple of players like every stoppage so there can be a different kind of team that we play against each time so that brings different experience, different plays, different communication, and stuff, so everyone gets used to everything.

Discussion: Getting the Practice Design Right

Coaches 'getting the practice design right' by replicating the realities of rugby is sought after by players. When done well, learning experiences for players are enhanced, where game-

plan, transitional play, and skill development can be enriched through games and scenarios. The Rock Game and Three Zone Game, for example, showed the power of careful design in player learning, namely through rules that emphasised both incentives and consequences. Coaches may utilise these approaches to encourage behaviour through incentives, such as spaces in defensive lines, whilst applying consequences to negate undesirable behaviour. Just as parents use punishments such as time-outs and police prosecute people for exceeding the speed limit, the same behavioural fundamentals can be applied to the practice environment. Both the boys and girls felt consequences such as a turnover of possession or fitness punishments worked well, so 'if you don't do it, you have a consequence' (Maia). The key is for coaches to have a clear picture of what they want and do not want to see. This is fraught with challenges, especially if coaches do not have sufficient rugby knowledge which has been highlighted by Cushion (2013) and McNeill et al. (2008). Coaches need to understand how the game is played in an efficient and safe manner, which poses the dilemma for coach educators that support coaches balance what and how to coach.

When fostering skill development for players both small-sided games and drills had their place. Small-sided games is an approach that all coaches can adopt to better replicate the demands of a match, as they are not reliant on large squad numbers. With careful design, coaches can help players develop skills within games. For example, reducing the pitch width generally leads to more contact, or mixing different combinations within the squad, so they become more familiar with each other's style of play.

A common misconception is that GS does not allow the coach to use technical drills (Harvey, Cushion, Wegis, et al., 2010). Contrary to any argument that GS does not involve drills, there is a place if the drill is relevant to the whole game and the needs of the player (S. J. Roberts, 2011), such as positional needs. GS is founded on a player-centred approach, so coaches are encouraged to involve the players in their learning. Hence, if they feel that doing technical drills helps with their learning, the coach would be advised to cater for that. The key is to help the player understand where the technical drill fits in the bigger picture of the match, replicate

the match as best as possible and help them understand why they might need to improve proficiency in a certain technical aspect. For coaches adopting drill-based approaches, there should be consideration afforded to appropriate timeframes as players may quickly become disinterested if they are not feeling challenged, stimulated, or making the connection between drill and match.

Using drills certainly had its place, particularly in the girls' campaign. The girls responded well to being coached through drills as they felt it helped them learn techniques or parts of the game plan in a meaningful way. It is unclear whether this is due to the players' experience level of rugby, past experiences of sport and coaching, the experience delivered by the current campaign coaches, gender, more individual attention from the coaching staff, or other factors, but finding the right place for drilling needs to be considered. Many girls were new to rugby, so they appreciated learning the technical aspects of the game. In particular, there appeared to be a certain mystique around the contact elements, where the girls chose rugby because of this unique aspect. Often, the drill approach in practice meant the players were operating in small groups with more care and attention from the coaches. They responded extremely well to individualised coaching and feedback, so potentially enjoyed the drill blocks because of this.

Clarity of the practice design is crucial to the success for the players. If games are too complex then players can become confused, frustrated, and subsequently disengage from practice. Ideas to enhance the players' understanding of the game may involve a clear, concise explanation of the purpose and game or scenario, demonstration, a chance to ask questions, then play the game for a time (two minutes) and offer further opportunities for players to get clarity. It may be helpful for coaches to use familiar games such as ruck touch and layer in one simple rule at a time to draw focus to the purpose, as there was a preference to learn new games and content progressively. This guideline may have reduced issues in the Three Zone Game, where players may have remained engaged with their learning.

Potentially a GS approach may expose relational tensions between players, through heighten frustration, especially if there is confusion and mistakes being made. Players not ‘playing by the rules’ or understanding the rules can be a source of frustration for their peers, so clear guidelines and boundaries are needed. However, it could be viewed that this is the reality of rugby and sport in general. Not everything will go smoothly. Players and referees will make mistakes, so the ability to adapt and continue playing is the reality of what is needed. It may in fact be beneficial for coaches to put players under this tension in the practice environment before it festers into matches.

GS can cause coaches some stress, especially if they want to see things constantly working, so they should be forgiving and patient to allow players to grasp the game while refraining from pointing out errors and problems (Koekoek et al., 2014). The coach may also remind players that this approach to practice may start messy with errors and some confusion and to persevere through the early stages. The coaches of these campaigns were advocates of GS and experienced in coaching through a GS approach yet still found re-positioning themselves to more of a facilitator and ‘keeping the whistle in the pocket’ a challenge at times. This may highlight potential conundrums around implementing a GS approach as highlighted by Light and Evans (2013) and Jarrett (2011), especially for coaches who like to be highly involved or even controlling (Cushion, 2013).

These results have highlighted the importance of the coach having sound pedagogical content knowledge and an awareness of their players to support learning.

4.2 Practising Against Opposition: Rather Than Running Against the Wind

A common rugby phenomenon is for attacking practice scenarios to be unopposed as or ‘running against the wind’ as Alice described it. Generally, rugby coaches have adopted unopposed practices to perfect set plays and attacking systems (such as ‘run-throughs’). Unopposed practices have largely gone unchallenged, where it seems this approach has been handed down through generations of rugby coaches. Questions remain as to what evidence

is presented that ‘running against the wind’ actually ‘works’ for the players or if indeed player voice has been pursued to understand its worth.

Players from both campaigns felt they benefited more from practising against opposition which better reflects the reality of a rugby match, as Oliver explained, ‘when you are playing the opposition, they are just running different lines, you are getting a bit under the pump which would happen in a game. So, you learn better.’ Consistently practising against opposition was relatively new for the players, wherein their respective 1st XV campaigns, they had experienced the coach controlling unopposed run-throughs as witnessed in the following scenario early in the boys’ campaign:

> The boys were playing kick-out. One player went through a big hole in the defence, ran ten metres stopped then lay on the ground and set a ruck. This was really interesting and potentially what they do in their school teams? The coaches then explained that the boys need to take opportunities and aim to score, rather than stop and set a ruck. Following that some players were still hesitant when in space, but by the end of practice, boys were sprinting through gaps and support players busting to keep up with them (Fieldnotes, July 29, 2019).

Liam explained this scenario that the players are:

> Just too used to being in drills and everyone would have done it I reckon. Because once you usually make a break at training, the ref or the coach usually blows his whistle and go down. I think he was just expecting that. As soon as you make a break go down.

The coaches of both campaigns framed most practice situations to have opposition to better simulate the realities of a match, both through unstructured and structured practice scenarios.

Structured set-piece

Rugby is a unique sport that encompasses a balance of structured and unstructured play. Structured elements include set-piece aspects such as lineouts, scrums, and back attack,

which afford an extended time-period (30-60 seconds) for players to make decisions on what set-plays to use. Both scrums and lineouts are major sources of possession in rugby and require a cohesive effort from the forwards to win possession, generally under pressure from the opposition. The backs are then tasked with utilising possession to breach opposition defences to either score or put their team in a position to score points. A common coaching approach in rugby is to separate into forwards and backs units, to allow players to learn set plays, generally unopposed. Both squads found time to practise in units to learn set-plays through scrum, lineout, and back attack contexts.

Scrums are an important source of possession in rugby, whilst also attracting heightened attention around safety. It is important that players are encouraged to build safe technique, whilst also gaining and contesting possession. A favoured approach for coaches has been to generally use scrum machines (a padded weighted device that players practise their scrummaging against), as often squad numbers do not allow 8v8 live scrum practices. However, this approach has its limitations as it can feel vastly different to what players will experience in a match. Jackson was new to playing prop and voiced his concerns about scrum machines confessing ‘scrum machines suck. I think live scrums are better, but it’s just having the numbers.’

The boys’ squad was large, so all scrum practices were done against teammates. Scrum practices would often start by doing ‘primers’ such as one v one, then progressing to two v one, three v two and eventually to eight v eight. Players noted that they had traditionally practised using scrum machines and saw the benefits of live scrummaging as it was more realistic. Ryan explained that ‘there is a big difference (with opposition) because it’s pushing back when it’s live. You’re actually holding up and pushing through.’ Steven also noted how live scrummaging helped build tactical awareness that was hard to replicate on a scrum machine recalling ‘we got taught that when the attacking team lifts its feet you have just got to push as hard as you can. You can’t do that on a scrum machine really.’

Lineouts are another critical source of possession in rugby. Teams in possession have multiple variations that they can employ, and these variations require cohesiveness between all forwards employing specialist roles, such as thrower, lifters, jumpers, and support players. Teams will generally have a series of calls that they use to gain an advantage to win the ball. Often lineouts are practised without opposition, which certainly limits the opportunities for players to practise in realistic match situations. This is another traditional practice approach that has attracted little questioning to its effectiveness.

Through both campaigns, the players constantly practised in opposed situations. Initially, the players would learn set calls, then apply against varying degrees of opposition pressure. The forwards' coach of the boys' squad would manipulate the defensive team to set up scenarios for the attacking team, which encouraged decision-making for players. Finn played hooker and saw the benefit of opposed lineouts in promoting accuracy and decision-making with his throwing because 'for me, with that lineout stuff, having opposition just like makes you think more and be more accurate on where you need to go and the front one is like a bullet and the back one you have to lob it over the other team's jumper.'

Harry felt more stimulated through opposed lineout practices professing, 'you're not just going through the motions and going up at C, up at K, up at E. You're actually jumping against someone.' Steven, who played hooker felt opposition pressure was more realistic. He argued that:

> It's just easier [with no opposition] because you've just got one set of hands to target at. When there is defence, you have to throw straight. At this training it was like man, you actually have to focus, and it was pretty hard.

This perspective was also echoed by Ryan who played lock, so was often jumping in the air to compete for the ball.

> I think it's good because it's a real game. It's practising real game stuff. So, it's good when you're in the air, catching the ball and having competition there, so it makes it

> harder to catch and makes the lifts have to be sharper and makes the jump have to be quicker.

Back attack

Backs will generally execute attacking plays from scrums and lineouts to exploit opportunities in the opposition defence to gain territory or score. Early in the boys' campaign the backs practised their attacking set plays under reduced timeframes. When the coaches and I reflected on this approach, it was decided that this method did not reflect the realities of a match, as when the play stops in rugby, it is usually re-started from a scrum or lineout, which affords the backs 30-60 seconds to decide on what set-play to perform. The backs coach adjusted practice methods by manipulating the defensive players to show certain pictures for the attack, which was more realistic. Generally, there would be at least four defending players to practise attacking plays against, which gave the attacking players opportunities to practise under realistic defensive pressures and adjust following errors. Liam enjoyed this approach as defensive pressure would highlight areas that needed working on explaining:

> Yeah, it was mean because we noticed that our first, second and centre were all running their lines not perfect, not just to the standard. So, for me at first five I had to come, run in first to make that first 5 come in on me and the centre had to change their angle more and yeah it was just mean.

Ball in play

Winning possession from structured set-piece and using it effectively is crucial to the success of the team. Once the ball is in play, decision-making time is reduced dramatically for both attackers and defenders, where decisions are made instantly and adapted to opposition behaviours and pressure. The coaches of the respective campaigns set up scenarios and games involving opposition pressures that the players were likely to face in a match, including 15v15, attacking and defensive scenarios and small-sided games.

Attacking systems – 15v15

Teams will often adopt an attacking system where all 15 players have certain roles. Often rugby teams resort to traditional 'run-throughs', where teams practise attacking systems and set-plays by 'running against the wind,' without defence. Run-throughs are often the stable diet of coaches and rugby teams for the last practice of the week (generally a Thursday for clubs and schools, or a captains run the day before kick-off at the professional or semi-professional level). Unopposed run-throughs have been adopted by rugby coaches as a way for players to learn and perfect content, which was appreciated by Sophie when first learning the team attacking system as it helped the team 'get used to it, so everyone knows where they need to be.' But the realities of a match will place players in situations where they are required to execute decisions and skills under opposition duress. Ryan questioned unopposed run-throughs, suggesting, 'I think they [coaches] just do it cause they want to see you in that system and it looks smooth but once you get in the game it all gets messed up and people were knocking it on and throwing bad passes.' James had experienced unopposed run-throughs with this school 1st XV team and supported opposed practices as a welcome relief to what he had previously experienced reasoning:

> I quite liked the two teams attacking each other, because it's like a rugby game and I like to play rugby games. It's good because I'm not used to doing it other than game time, but it makes you think more on the spot and passing because there's actually players there rather than at school, there would only be three defenders so you could just run 20 metres without anyone being right there.

Both teams adopted a 1-3-3-1 attacking system. Because the boys squad had sufficient squad numbers, the coaches would often set up 15v15 games with rules and constraints to practise their attacking systems under pressure, as using opposition was seen to replicate reality of matches. Once the players had learned the system, the coaches added pressure by adapting rules, such as the defence could compete to turn the ball over, if playing Ruck Touch, or setting

up defence scenarios, such as leaving spaces in certain parts of the pitch. These progressions added a contest at the breakdown and encouraged players to look for space, which simulated similar opposition pressures and opportunities the players would face in matches. James noted how this helped because ‘it just replicates the game really well and you feel more comfortable on Saturday because you know where you’re meant to be and what you would do in certain situations and seeing those pictures.’ Liam agreed noting ‘it’s good that it’s game-based scenarios at trainings because as soon as we went into the matches it was just like we were playing again, and it was with the same guys, so we adapted pretty quickly.’ He also shared a specific scenario where he recalled ‘it helps in the match whenever there’s someone short on one side, you’re more likely to look at it because you’ve been doing it in training,’ thus linking learning from practice into the match.

Practising defence

Contrary to attacking practices, rugby coaches will generally employ opposition when practising defence, which felt particularly natural for the coaching groups of each campaign. Not a second thought was given when simulating defensive realities for players, where utilising attacking players was the ‘go-to’ approach through these campaigns and previous campaigns they had coached.

> Tonight, the boys’ squad was taught and then practised their defensive system calls. The four calls (‘press,’ ‘jockey,’ ‘arc’ and ‘blitz’) were introduced inside the clubrooms using visual aids on a whiteboard. They then practised each different call, where the coach manipulated the attacking team to attack in a certain way. The defensive team could see the relevant picture, make the call then execute the correct defensive system. This then progressed to a game of 15 attackers against 10 defenders. The attacking team was playing in their 1-3-3-1 attacking system and moving the ball across the width of the pitch. At times a new ball was kicked out to create un-structured play, so both teams had to adapt. The coaches utilised a guided questioning approach,

> to encourage players to discuss what was working and how to improve their defensive proficiency (Fieldnotes, August 19, 2019).

Oliver noted that he felt this practice approach helped him to learn the calls based on what will happen in an actual match arguing:

> So, you're being put in a situation that is going to happen in the weekend right. You're not going to be, just staying here, going for this one pod. You just see what is in front of you and everything is changing, so you just like do all four defensive situations, you know the jockey, the arc, the press, and the blitz. We are doing all four.

Discussion: Practising Against Opposition

When practising defence most coaches (like in this campaign) are quite familiar with using an opposed approach. Coaches may be encouraged to manipulate the attacking players to support learning for the defensive players, whilst balancing both defence from set-piece and 'ball in play' situations. By placing players in different scenarios, they may become more proficient at reading situations, making the right defensive call, and executing.

It seems clear that utilising opposed practice scenarios as much as possible can only benefit player learning, as it better replicates the reality of a match. The boys' campaign (due to the large squad size) in particular, spent large proportions of their time, practising scenarios that they would directly experience in a match. For example, 15v15, live scrums, lineouts, and back attack. Often schools and clubs have more than one team, so there are opportunities to run opposed practices, although challenges exist especially in disparities of age and ability.

The girls' squad size represented a more realistic context that most school (and club) teams face. All the players (both boys and girls) interviewed in this study played in their respective school 1st XV's. School 1st XV squad sizes ranged from 18 to 24 players and none of the schools had a 2nd XV team to practise with and against. So, there are some challenges implementing 15v15 practice scenarios or even having sufficient players to simulate

meaningful games-like scenarios, hence why many teams may resort to using unopposed practices to practise set-plays and attacking systems. Although 15v15 scenarios are challenging to replicate with smaller squad sizes, coaches can find creative ways to simulate game scenarios by using opposition, such as defenders putting pressure in certain areas, using unemployed attackers to defend, practising on half the width (which was a method adopted in the girls' campaign).

There was a clear preference for practising scrums against opposition as opposed to scrum machines. Players from both campaigns had generally learned scrummaging in their respective school 1st XV environments on scrum machines, often due to small squad sizes. Even with small squad sizes, there are opportunities to do opposed practice such as 1v1, 2v2, 3v3 etc… Players endorsed the huge benefit in utilising the said 'primers', so they can feel the dynamics of opposition. There is much work to be done to upskill coaches in utilising more live scrum approaches to both better replicate the reality of the match and maintaining safety for players.

From the players perspective, there seems little reason for teams to practise lineouts unopposed. As mentioned in section 4.1, although the players longed to learn new lineout content (calls) without opposition pressure, they had a strong preference to practise against opposition once they had learned lineout calls. Small squad sizes pose challenges, however, coaches are able to still set up practices to incorporate opposition pressure, which will replicate match realities. Utilising opposition heightens competition, encourages speed of jump, movement of jumpers and lifters, while challenging hookers to throw with accuracy, which are all skills and decisions players will face in the realities of the match.

Much like other aspects of practices, the players benefited from practising back attack set plays under opposition pressure. Utilising opposition to create defensive pictures for the attack to practise set plays, simulated realistic match scenarios, more so than reduced timeframes would. This appeared to enhance decision-making and opportunities to execute skills as the practice environment simulated match-like pressures.

Once players learn the content of attacking systems and set plays, there seems little reason to use unopposed practice methods, if the intention is to develop the players' skill and understanding of the game. Potentially, the common rationale of unopposed practices for coaches is to help with clarity and confidence, which may have some merit, although players and teams will never be afforded the opportunity to play a match with such perfection and with such little pressure. There may also be a chance as Liam explained for players to 'go through the motions,' once they have learned the content, where they may face the same stimulus as a cow coming to the milking shed day-after-day. If part of a coach's role is to engage players to help them learn and get better, then unopposed run-throughs may be a thing of the past.

4.3 Practising Contact: A Risk v Reward Scenario

Rugby is a highly combative contact sport involving many collisions between players, such as tackling, rucking, scrummaging, and mauling. The degree and extent of contact, coaches infuse into practices can be a conundrum. They must weigh up the risk of injuries against the reward of replicating practice to look and feel like an actual match. As much of the research conducted in GS has been in physical education settings and non-contact sports, little is known about the extent to which contact could be integrated into rugby practices. Players from both campaigns acknowledged the risk associated with contact practices, although expressed a desire for more contact practices than was originally offered at the start of each respective campaign, to better replicate the demands of a match.

The coaches of both campaigns often used non-contact constraints within their modified games and game scenarios. A low level of contact was adopted in practices at the start of the respective campaigns as this time-period overlapped with the school competition play-offs, so the coaches had to balance the squads' learning priorities whilst respecting the importance of the school programme for the players (including school coaches and administrators). Non-contact practice approaches received positive praise from players when learning new content, developing game-plans and certain skills as Steven explains:

> It's real nice when it's touch, as there's no massive pressure on you if you drop the ball as you're not going to get smashed, so you can actually like critique your moves well. You're just learning it. And when you've got that going you can turn it in to contact because you're ready for it in a way.

However, Alice felt that non-contact practices were also unrealistic, and more contact was needed to build confidence. She argued that 'I think you just have to risk it for the biscuit. If you don't want to be scared of contact, then you have to practise tackling someone.' Lucy also felt the team needed more contact to prepare for upcoming matches, exclaiming 'if we come up against [opposition team], they're got some pretty big forwards and wow, we'll get smoked by them.' Ruby agreed with the need for more contact exclaiming:

> And we play like way too much touch. I'm just saying that. I just get annoyed at that, because like rugby isn't a touch game. If we're just going to touch them, then people are just going to be like 'just touch them' and we're just not going to want to tackle when it comes to an actual game. So, it's like kind of annoying. I don't like the touch thing. We might come up against a team that just run hard, tackle hard and we're just like - ooooo [scowly face], because we're just doing too much touch.

This viewpoint was reiterated by the boys, who also wanted more realistic levels of contact. Liam felt that non-contact practices made it too unrealistic and stifled opportunities for the attacking team to break the defensive line, explicating:

> Full contact would be mean for the attack as well because I reckon at the moment it feels like a bit stale like we're not going anywhere. And it is just because it's touch. Anyone can make a touch, but once you get those forward runners going our plays will start working and everything.

It was clear that the players wanted more contact at their practices to be sufficiently prepared for the season. It appeared that contact was a big reason why the players, the girls in particular, had chosen to play rugby. Zoe wanted this need sufficiently met imploring that 'I

like defence and when you're on the wing and I just stand there not doing much defence for most of the time I want some. Because that's like my favourite part of rugby.'

Non-contact practices were seen to potentially lead to poor habits, such as attacking players running further with the ball than would realistically happen in a match, poor skill execution of ruck skills (such as ball presentation, speed for attacking support players to clean-out defensive threats, ruck technique, turn-over technique). Liam felt there needed to be more of a contest at the ruck because 'everyone is going in pretty soft at the moment.' This opinion was reinforced by Finn who felt frustration as there needed to be a more realistic contest at the ruck exclaiming:

> Like on the wings, there were people getting isolated. Especially today. One person would just run, and it would be just him, no one cleaning. People could just touch the ball and in a real game it would be an easy turnover.

Steven agreed noting that 'you don't want to be late to a ruck in a real game, because you don't want to get smashed.' It was certainly clear that the players felt they needed more contact in practices to replicate the realities of a match. This player insight in the early stages of the campaign was fed back from myself to the coaching groups, which proved to be invaluable in shaping future practice contexts to meet player needs. The coaching staff of both campaigns implemented more contact in team practices such as contact drills and primers, progressing levels of contact through games and full contact sessions. The coaches of the boys' campaign implemented more opportunities to contest at the ruck within their game design. For example:

> The coaches applied more of a contest at rucks today. They played ruck touch. The defensive player would have to use a two-hand touch on the ball carrier, which would simulate a tackle. The ball carrier would then go to ground, allowing opportunities for the defensive player to turn the ball over. This raised intensity was match-like, as it forced the ball carrier to place the ball long, support players to get close and remove defensive threats, whilst using a safe, effective technique, otherwise they would lose possession (Fieldnotes, August 27, 2019).

As the season progressed the players felt that a more balanced approach to contact levels could be applied. Their contact needs were being sufficiently met, especially when they started playing matches, where Lucy felt it was time to 'ease off.' There was then a chance for the coaches to use more versions of touch games, to reduce injury risk. The players, like the coaches, were understanding that contact practices exposed an increased risk of injury as Ryan confessed, 'you don't want to be playing full contact the whole training because people are going to get tired, people are going to get injured. You shouldn't get too many injuries from touch anyway.' However, they still felt they needed contact bouts during practice as it better replicated the realities of a rugby match.

The consensus from the players was to slowly progress contact focussed practices from non-contact towards full contact, as Emma explains:

> I think slowly progress, so start with two hands then maybe use a tackle pads so getting used to going low and having the right technique of tackling, cause sometimes you can really hurt yourself if you don't know how to tackle properly. And then get in to tackling each other but not at full pace and then progress eventually.

The girls' coaches would often progress contact by starting with closed contact drills and primers to prepare for contact, whilst providing opportunities to correct and improve technique, where the boys' coaches mostly progressed contact levels through game contexts. In both campaigns the coaches would progress contact practices through levels such as 'two-hand touch,' to 'shoulder on,' (where a defending player would have to stop the ball carrier by making contact with their own shoulder) to five-minute bouts of 'full contact.'. It was also important to be clear on contact levels so everyone knew the expectations, where Ryan expressed 'there needs to be a clear guide-line, because when half the people are going soft and other half are going full contact, that's when injuries can happen.' These levels would be explained at the various stages and monitored by the coaches and players.

Discussion: Practising Contact

The challenge for coaches adopting a true GS approach in rugby will be managing levels of contact to maximise learning, whilst reducing the risk of injuries. This conundrum may explain why coaches have traditionally favoured more non-contact and unopposed approaches in rugby. Coaches working in the teenage space, face the reality of small squad numbers, so prefer non-contact practice approaches, to reduce injury risks and confidently field a team for matches. However, non-contact approaches do not truly represent the real-life match pressures that players and teams will face, so will continue to pose challenges for advocates of a GS approach in rugby.

The coaches of these campaigns, adapted their approach to contact, based on player feedback, thus satisfying the players' needs. All contexts will be different and may change throughout a campaign, so listening to feedback from players may help meet the contact needs of players. For example, the coaches of these campaigns progressed contact levels and adopted small blocks of full contact, in response to player feedback. Monitoring appropriate contact levels is advised, as players can become easily frustrated when the levels of contact are not clear. Using clear guidelines, such as a sliding scale or percentage system to indicate contact levels or allowing the players to lead the level of accepted contact may work.

Both squads played versions of Ruck Touch, allowing a physical contest at the ruck between attackers and defenders to simulate the realistic match demands. There are upwards of 100 rucks in a game of rugby (McCormick, n.d.), so simulating opportunities to practise live rucks is advised. Along with the ruck, other contact aspects such as scrum and maul appear suitable to simulate in live contact scenarios, in order to enhance realistic technical and tactical situations that players will face in matches.

There is more thought needed around how to simulate contact areas of rugby in a controlled and safe practice environment, in particular the tackle. It appears that tackling with safe technique is the most difficult skill to replicate in games due to the dynamic movements

involved. Ball carriers try to evade defenders, generally a full speed, which creates high levels of pressure for defenders. Coaches in these campaigns combated injury risk by utilising touch games to simulate tackles and using drills with small spaces or reduced speeds. Touch could be argued to only support development of the pre-tackle alignment, where closed drills are generally not operating at match speed or intensity. More thought is needed in how to coach tackle competency and other aspects of contact that replicate realistic match pressures, while reducing injury risks for players.

4.4 Questioning Approach: Coach Can't Be There

A key guiding principle of GS is coaches using a questioning approach with their players. A questioning approach hands power over to the players to make sense and come up with solutions (Light, 2004; Wang & Ha, 2012) as Chloe agreed explaining 'it's just like a mind thing I guess. You're [the coach] still telling them to do something, but you're phrasing it that I think that's my idea, cause I'll want to do it if it's my idea.'

Questioning is seen to foster learning for players as they construct their own meaning, with James simply arguing that 'I don't reckon you remember it as well if you just get told.' Players are required to make decisions in match situations, where a questioning approach was utilised in the respective campaigns, to encourage players to think for themselves (Harvey et al., 2016) and improve tactical awareness (Broek et al., 2011; Darnis & Lafont, 2015). The players felt that being questioned to stimulate thinking and decision-making skills made sense as the coach would not be on the pitch during a match to make all the decisions, as James reinforced exclaiming 'the coach can't be there like the whole time, to tell you what to do and tell you to think for yourself. Only at the start, half-time and maybe messages when running the drink bottles on.' Ryan felt that players may often have a better perspective of what is happening as they are in the match feeling it. He confessed:

> I'm not a big fan of coaches that telling me to just do stuff. The downside of that is that you don't have to think for yourself, when a coach is just telling you what to do. And

> sometimes because you are actually playing, you have a better perspective of what the coach thinks.

Harry felt empowered explaining that:

> It's made us or forced us to make our own decisions. Like not just saying 'do this' or 'you have to do this.' Instead, 'what do you think of this? Or 'try this' or 'what have you got that you can put in this situation?'

Lucas also responded well to having ownership of his thinking stating 'I think it's good [being questioned] because it gets you thinking. Instead of the coaches telling you what to do. It gets you thinking for yourself about what you and your team are doing wrong. It just gives you responsibility.' Liam agreed, responding positively to having more ownership:

> It [being questioned] was better, because we got to talk to each other about what we needed to do better, instead of just being told, so that was mean. And it forced us to talk. We needed that. Because when you're being told you have to do exactly that. But when its player driven, you have to talk through it and do it, and it's not like as much pressure so you can rely on the boys if you know what I mean? Like on the game you're not going to have the coach telling you what to do.

Steven also responded well to taking ownership of this learning, where a questioning approach encouraged him to think for himself and the team to work together to find solutions:

> Yeah that was cool, because you can hear or understand as a group, not just coaches telling us what we've done wrong and we still don't know what we've done wrong. But if us as players, we all have a chip in on our discussion, it's a lot more clarity. It brings more sense to everyone because we're thinking about it and not the coaches telling us about it. So we're like 'ah yeah actually we did stuff up in this area' or 'we did well in this area.' Stuff like that. It was good.

Steven also paid mention how questioning contrasted the experience he had in his 1st XV reflecting that 'it was real different because you had to find your own way, but you had the

coaches guiding you.' This was endorsed from other players, including Lucas who thrived on this approach revealing:

> So compared to our normal school trainings, it is just like a whole lot of drills and the coach telling us where to go. Where [the coach of this campaign] at the start of the training, he asked us what we thought we needed to do in certain situations and let us just figure it out by ourselves instead of him just telling us where to go and what to do.

A common challenge coaches face is getting players to communicate with each other. The practice environments of both campaigns encouraged social constructivism by offering opportunities for players to regularly talk with each other. This appeared to support a social constructivist approach in fostering communication skills and connections between teammates, which supports the work highlighted by Slade et al. (2015). Matthew explained that 'in this environment it makes you talk to people you don't normally talk to… If you figure something out, you have to tell the bro.' Oliver agreed favourably justifying 'I like that it gets you talking to all the other players, not just staying in a group. Everyone puts in a word and finds out what's happening and tells everyone.'

The boys felt that a questioning approach was positive as it made them think for themselves, improve recall, grow communication between players, and afforded the opportunity to hear different perspectives from different players. However, there were reservations from both the boys and girls, particularly in whole team situations, where being questioned in small groups or individualised situations was preferred, which will be outlined further (see 'questioning approaches: a range of contexts').

The coaches of both campaigns were adept at using a questioning approach to encourage problem-solving with their players. They had extensive experience of a questioning approach in previous campaigns where they demonstrated a clear process, as well as an ability to listen and probe deeper to elicit a deeper understanding (Fry et al., 2010; S. Wright et al., 2009) if required. They generally felt comfortable taking on more of a facilitator type of role to challenge

the players thinking and allow players to produce solutions to problems. The coaching groups developed their questioning skills through the campaigns, by the adoption of a GROW model questioning process (Harvey et al., 2016; Whitmore, 2010). Coaches would often follow a questioning sequence such as:

- Goal: What is the objective (of this game or activity)?
- Reality: How are we going?
- Opportunities: What could we do better?
- What now: What is the one or two things we will implement now?

They also built their questioning competence through reflective practice with coaching colleagues and me at the end of squad practices. For example, in the initial stages of the boys' campaign 'the head coach often summarises an activity with a closed question such as 'are you clear on the calls?' or 'does everyone understand?' In which case the response is normally a 'yip' or nod of the head' (Fieldnotes, August 19, 2019). Upon reflection between the coaches and I, it was decided that there needed to be a change of approach to both check for understanding and increase engagement. Coaches adapted strategies, by asking players to show rather than explain (such as continuums and demonstrations, for example 'can you three show us the pod and demonstrate their roles') and limiting whole group questioning approaches.

Questioning approaches: a range of contexts

Early in each respective campaign, the coaches generally favoured a whole group questioning approach, although alternative approaches were adopted as the season progressed, including small group, pairs, and individual. The approach was dependent on the context and outcome the coaches and teams were after. Small group and individual approaches were favoured, although the players generally responded well to all questioning approaches.

Whole group questioning

Often coaches will use a whole group questioning approach to engage the whole squad collectively, which Ryan thought was a useful approach to help learning amongst his peers rationalising:

> I think it's good, because there are obviously lots of different ideas in the group, so it's good to hear what everyone thinks and how we can get better and how we can adapt. Because I've got my own ideas and someone might think differently to me and hearing their perspective on how we can change things, helps the whole team work better, I think.

Often a whole group questioning approach can receive engagement from fewer people, where more confident, dominant players tend to answer the questions. Although feedback from the boys was positive, the coaches reflected that generally three key players spoke the majority of the time, with little certainty that the entire team had understood, which was consistent with the work from McNeill et al. (2008). One coach reflected that he was looking towards one key player to offer suggestions, just to break an awkward silence (Fieldnotes, August 5, 2019). This reflection led to the coaches using whole group questioning sparingly and preferring a continuum approach for the whole group which received great feedback.

> The coaches asked players to stand on a continuum 'how well do you understand your role in the attacking system,' with one end being 'know it perfectly/totally confident,' to the other end which was 'confused/no idea.' The coaches and teammates could then identify players who needed further support. For example, one player noted that he lacked confidence with the lineout calls, which was confirmed by other teammates. There was a strong focus later in the session on learning the calls' (Fieldnotes, September 5, 2019).

Jackson highlighted the benefits of the continuum suggesting 'the scale was pretty good, because you could see what the players were thinking, what they needed to work on, what they were alright at.' Harry felt this approach engaged everyone agreeing that:

> The scale was good as well, because you could see what members of the team were confident with it and who wasn't, so could then look out for the bros that needed it. It gets the whole team up there, rather than just the person who is willing to speak up. And guys who aren't quite so talkative at times I suppose, can just stand somewhere.

The same questioning the whole team conundrum happened in the girls' campaign, where generally only three of the more confident senior players would speak in the whole group setting. The coaches provided a structure for more players to have opportunities to speak, which Maia described being 'little speech people, speakers how would kind of voice some solutions,' which she felt 'kind of worked because we didn't have everyone coming in and talking their ideas at the same time.' Scarlett's reflection of 'your play-makers and main players were speaking first, then you had the input of others,' worked to give specific players responsibility.

Through the FG interviews, it was revealed that the players did not provide their ideas in whole group settings as they were fearful of being judged. Lily identified an underlying tone of mistrust within the team, which caused players to remain silent confessing:

> I think basically in this like big team, there is not that trust and there is not that confidence that it's a safe environment to share what you've learned, cause with everyone feeling like they're going to get judged. There shouldn't really be that in a team, but there is.

A theme of mistrust 'bubbled' to the surface in the girls' campaign, when the FG discussed their perspectives on being questioned. This underlying tone, which will be discussed in more depth (see section 4.5), impacted on how players received a questioning approach. Thus, it was important for the coaches and me to reflect throughout the campaigns on questioning approaches to best meet the needs of the players.

> Today we had some quality reflection conversations with the coaches in regard to questioning contexts. We discussed what is the purpose of questioning and who needs to be questioned? We landed on small group contexts seem to better suit the needs of the players and that maybe not all players need to be involved in everything. (Fieldnotes, August 5, 2019)

As these respective campaigns progressed, the coaches used different questioning approaches to increase the engagement of their players. The whole group questioning approach did not always get the active engagement the coaches were after, so the coaching staff resorted to small group and individual questioning approaches as the season ensued.

Small group questioning

There was consensus that the players preferred small group over whole group questioning contexts, where they could offer ideas in a safe environment and hear the ideas of the group. Zoe was new to rugby and preferred constructing knowledge in small groups admitting:

> I don't like getting pointed out [in whole group settings]. I don't like being 'why did you do that?' or 'what would happen?' I would prefer the [small] group setting. So 'why did you guys do that?' And, then you can speak up if you knew. Cause when I get put on the spot it freaks me out, especially with rugby, because I don't really know that much. And that's also why I don't say anything in huddles cause I don't want to say anything and be wrong. Because I don't really know what I'm going to say is right… but if it was like a huge group I'd just feel like a deer in the headlights.

Small groups allowed for more players to have input in a less intimidating whole group context as Ryan explained:

> I think that [whole groups] works as well, but not as well, because the small groups, everyone can have the chance to speak, whereas it may only be the main leaders that talk in the big group. Not everyone is as confident to talk in front of the whole group as well. Might be a bit nervous or something.

Small groups also meant conversations could be focussed on what was applicable to certain players. Players were often grouped into sub-groups according to their playing positions (such as forwards and backs), which helped build key relationships within the team. The nature of rugby practices is that there is often a focus on unit work such as scrum, lineout, and back attack which lends itself well to problem-solving in these small groups, as Harry explained:

> So, when you go in to like, the forward and backs are together and you're talking about a back move, f… knows what that is and Liam goes we're doing this, this and this and I go what? Right, we say we're going to do a scrum and Liam goes ehhhh? So, forwards and backs separate, talking about their own jobs is preferable instead of having one big group discussion.

Through both campaigns, the coaches would often set up a game or scenario, then stop and pose a question to the mini teams, to encourage problem-solving. For example:

> The girls' squad was split into two smaller teams to play a small-sided game designed to improve ball presentation. The coach stopped the game and posed the question 'how can we keep the ball for longer?' The players then problem-solved in their groups to come up with solutions such as long place, army crawl, quick arrival of support play. This had good engagement (Fieldnotes, August 1, 2019).

This was well received by Isla, as she felt everyone could offer some insight relative to their perspective democratically:

> Because our coaches can see one thing, and one person can see one thing, but other people might be standing in a totally different area and can see something else, so having the opinion from everybody but at like certain times, so this person talks so everybody listen, then this person talks and everybody listen. Cause I feel like it's better like because everybody is listening and understands where everyone is coming from, but when everybody is talking at the same time, it is just a shambles.

Isla felt that everyone can and should add value, although at times the players talked on many tangents, so often the coaches would guide the conversation to bring it back to the subject.

The boys' coaches also offered opportunities for players to problem-solve in pairs. The strategy behind this was to engage all players, as even in small groups, certain players may still dominate the discussion. This received mixed feedback, where it worked well for Ryan as he 'could bounce ideas off each other' in a safe environment, although Steven acknowledged that 'it was easy to get off track, unless monitored by the coach.' Players did gravitate towards teammates they had established relationships with. It appears that pairs discussions and problem-solving tasks would require monitoring to keep players focused and accountable. The coaches did use techniques such as moving around the pairs to listen in (Harvey & Atkinson, 2017) and asking players to feedback at the conclusion, which appeared to help player accountability.

Individual questioning

The players thrived with one-on-one opportunities with the coach. Often the girls' coaches would set up small group activities with three to five players per coach, which allowed them to give specific feedback to the players and question them individually. Also, at times, the coaches would pull players out of whole team activities to question them and provide feedback.

> Today the girls did a tackling session where the coaches observed and questioned the girls individually on their technique. In the FG both Zoe and Sophie were able to recall the specific techniques that would help her execute a tackle safely and confidently. It appears that it 'stuck'' (Fieldnotes, September 10, 2019).

Chloe also saw the benefit in this approach as it raised accountability and an opportunity to learn in a way that suits her, conceding:

> When someone talks one-on-one to you, obviously I'm going to listen to you more, because one you feel obliged to look someone in the eye, because if you were if you

> were standing up there, I'm probably not going to listen as much. And then if I didn't understand something, I can talk straight back to you. You'll explain it in a way that I'll understand.

Emma preferred individual questioning as it reduced the fear of being judged by her peers. She confessed:

> So, like no one else can hear what you're saying so you can't be judged. So, if you say something that someone else doesn't agree on, it normally ends up in an argument or they just talk about you behind your back.

The boys' coaches developed their ability through the campaign to capture coachable moments by questioning individual players during games or scenarios, in particular during set-piece practices, where the play could stop for a small duration of time. Liam played flyhalf so was required to communicate attacking strategies to the entire team. The following observation between the backs coach and Liam created dialogue to promote his decision-making, leadership, and communication.

> Coach: 'What do the forwards need to know here?'
>
> Liam: 'Where we are going to strike.'
>
> Coach: 'Ok, how will you let them know.'
>
> Liam: 'Go and tell them the call.'
>
> Coach: 'Ok, off you go then'

Liam then communicated relevant information clearly to the forwards (Fieldnotes, September 5, 2019), and henceforth established a routine of communicating with relevant players at scrums and lineouts.

Ben played inside centre and the backs coach identified that he continually caught the ball on his side or slightly behind him. The preference was for Ben to catch the ball in front, so he could run at full speed and make appropriate decisions. The coach created awareness with Ben through questioning:

Coach: ‘I’ve noticed that you are catching the ball on your side or slightly behind you quite a lot. Why do you think that is?’

Ben: ‘I’m not deep enough.’

Coach: ‘How could you get deeper?’

Ben: (long pause) ‘Take a couple of steps back. So, I can see Liam’s number of his jersey?’

Coach: ‘Great idea. Give that a go.’

There was an instant change, which the coach reinforced through another question?

Coach ‘How did that feel?’

Ben: ‘Good, my timing was better.’ (Fieldnotes, September 12, 2019)

The coach decided not to probe any further as he was seeing the appropriate behaviour from Ben. There was some trepidation from the players when being questioned or probed too much, as it could be linked to perceived negative behaviour such as ‘the coach is asking me this because I’ve done something wrong.’ Scarlett played flyhalf and sometimes lost confidence in her decision-making if the coach questioned her after an action as she explained:

> Sometimes, I don’t like it when people question me after I’ve done something. Like, say if I did something wrong and they say, ‘why did you do that?’ I’d rather them ask me before, say we do a drill. I’d rather them be like asking what we think rather than tell you. But for me I don’t like to be questioned afterwards, I’d rather they just tell me [their opinion]. Like, say I called a move or something and they are like ‘why did you call that move?’ Yeah, when people ask you afterwards, I’m like ‘oh shoot.’ It scares me.

The coach in Scarlett’s context was attempting to reinforce positive decisions made by her, although was interpreted differently. The coach working with Ben demonstrated good awareness to finish his questioning sequence as he was seeing the appropriate behaviour change. This demonstrates the complexity of questioning players.

Discussion: Questioning Approach

It appears clear that players thrive on being questioned as it develops autonomy and ownership, encourages problem-solving and enhances connections between players. However, these perceived benefits highlighted by the players, come with some caution. A consideration for coaches is to vary the approaches to get the desired outcomes. The players preferred discussing and problem-solving in small groups and individualised contexts with coaches, as there are more opportunities to contribute.

Often coaches will adopt whole group questioning methods, generally as it is easier to manage messaging with a perception that everyone has heard, contributed, and therefore understands. The coach can engage the whole group in a short space of time. However, this approach may be used sparingly as players are less likely to engage as there are fewer opportunities to contribute, may lack confidence (Van Zee & Minstrell, 1997), due to a fear of being judged and is not always relevant to everyone. This phenomenon is not too dissimilar to any social setting, which requires people to speak in front of others.

When employing questioning approaches, coaches may need to consider what is the purpose they are hoping to achieve and who needs to be involved, such as the whole group if the purpose is for all members of the team to gain understanding or contribute to a concept. Coaches may increase engagement by assigning certain players to speak or by pointing players out, although this needs to be managed with some tact so players feel safe. And alternative opportunities for players to make sense of and show learning other than through discussion should be considered, as not everyone responds to this approach. The players need to know why the coach is questioning them. This needs to be framed well by coaches to get 'buy-in' from players, such as explaining that questioning is being used to help player learning and encourage problem-solving. The relationship between the coach and player requires a sense of trust so the player knows the coach has good intentions to help rather than interrogate, which was certainly the case for Chloe who respected the head coach explaining that 'I like the way that he asks us. Yeah, just because I know him.'

The players responded particularly well to individual situations with the coaches. This approach is more intimate between coach and player as it is tailored to the specific needs of the player, but also takes more time, although Ryan felt that was ok ‘as you are still learning.’ Coaches may consider how they structure in individual player time into their practice schedule, such as before and after practice, questioning within practice activities and pulling players out of activities at specific times of need. Often coaching groups may have two or more coaches working together in a campaign, so there may be opportunities for coaches to work together to support the learning of players. For example, if one coach leads an aspect of practice, the assisting coach(es) may find opportunities to support player learning by subtly questioning them through the activity or game, or even taking them aside to question.

In both squads, there was a desire for players to have a voice and contribute, although it needed to be managed well. Often a lot of ‘white noise’ can be heard in group discussions, where everyone has an opinion, but comprehension is lacking. Depending on how cohesive the team is, or the level of leadership within the small groups, coaches may be required to guide the conversation if needed. This would allow different perspectives to be heard, whilst drawing some clear focus. In team environments where there are two or more coaches, there are opportunities for all coaches to contribute with this approach, rather than one coach leading everything.

A challenge for coaches is to balance the timing of when they ask (as not to stop the flow of practice) and the number of questions when they ask (Fry et al., 2010). If a player can perform a technique autonomously it may be preferable to leave that player alone, as overthinking a skill or scenario may slow down their decision-making and/or reduce confidence levels.

Coaches are also encouraged to develop a culture of trust where players can speak up without fear of judgement, to provide their ideas and perspective. Without trust, it appears that questioning approaches are rather fruitless as players will not engage as fully as the coach might like (see section 4.5).

4.5 Team Culture of Trust: Build Culture Then Coach Us

Although this study did not explicitly aim to find a connection between GS and team culture, FG and interview conversations often highlighted topics concerning team culture, in particular the notion of trust between players. Players place team culture as extremely important, highlighted quite simply by Ryan's message to coaches suggesting that 'once you build team culture you can start working on getting your team better.' This section presents findings that both reinforce the importance of team culture and its impact on learning, in relation to a GS coaching approach.

The girls' squad in particular, had underlying tones of relational challenges, mistrust, and lack of connection between some players, as Chloe highlighted:

> Everyone bad mouths each other. We talk to each other like they're not even human, like really rude to everybody, obviously not everybody, but there is like certain people who just mouth off all the time, gossip. But I guess that's just girls for ya.

The squad was predominantly made up of players from two high schools, so there were already player cliques coming into the campaign. Due to the challenges of attendance to practice, the coaching staff struggled to galvanise the squad and it manifested itself at team practices and eventually at a match.

Ruby in particular, created a lot of challenges within the squad. She was an extremely talented player and would become quickly frustrated at weaker players or if she disagreed with the practice plan. Of note, this behaviour was considered out of character according to the coaches, managers, and interviewed players, most likely as Ruby was dealing with grief connected to a close family member who has passed away. The head coach of this campaign had a proven track record of building positive team environments but was also dealing with the recent death of a close family member and reflected post-campaign that he was not always present as he dealt with his personal situation. He was not always aware of the situation that

was manifesting within the team and when he became aware, struggled to provide the energy required to deal with situations that were unfolding.

The team travelled five hours for an away match, which provided an opportunity to spend time together and build connections within the team. However, the cliques between the girls from the two dominant schools only intensified. One school, which Ruby attended, had a strong cultural identity and sung school songs, and spoke in a dialect that was unrecognisable to the girls from the other school. This caused bigger fractions and spilled over into the match where the girls, in particular Ruby, criticised other players following mistakes. Subsequently, Ruby was replaced at half-time in an attempt to bring harmony within the squad. Alice went to the same school as Ruby and identified that cliques existed and impacted the performance of the team, as she outlines:

> There were still little cliques in the group you could see and that was my school, definitely. There was still a little group. Just the bond of the whole team and the attitudes didn't merge as well as it should have, because I think if we had a strong connection through the whole season then we would have been on our top game.

At the final team practice of the campaign, tensions reached a crisis point between Ruby and Emma. The team were playing the Three Zone Game, which was mentioned in section 4.1, where the half-back (Emma) and flyhalf (Scarlett) would always play on the attacking team. This was quite confusing for the players and Ruby became abusive with Emma. Following that Emma ended up in tears and disengaged from any learning as she explains:

> I was just a bit upset to train as well. Because I was getting sworn at as well because I didn't really know what was going on. I did, but because me and Scarlett had to play as half-backs and we had to keep switching teams. When our team got the ball and I forgot, and I was there, and I got sworn at. I forgot all about switching.

The coaches did not realise what was happening, although the assistant manager, who was female, identified a tension between the players and acted as a support person for Emma and

some of the other girls. Emma had spent a large proportion of the campaign feeling this way as she explains further:

> It wasn't very a nice environment to be around to be honest. At one point I wanted to leave, but I didn't, because I just love rugby and I didn't want to give that up. Yeah, I just tried to carry on. It was also good having (assistant manager) there, like another female because she knew what was going on. Sometimes with males they like don't know.

Although these challenges appeared to be relational issues between players, the GS approach appeared to amplify tension due to the chaos that games and open-ended learning environments can bring, where questioning approaches amplified these issues, as players were not confident to share their thoughts without lack of judgement, as was detailed in section 4.4.

This behaviour had been evident in team practices but not dealt with. Emma was unsure of how to deal with the situation explaining that 'if I narked or said anything then she [Ruby] would get all those girls on me and everything. So, I didn't really feel very safe.' The coaches attempted to keep Ruby in the squad due to her ability, experience, and lack of players, but upon reflection through their campaign review, felt they should have removed her from the squad earlier in the campaign. Chloe agreed that 'things would have been different if Ruby wasn't there,' although Isla countered that opinion adding 'it would also have been different if Emma didn't play as well because those two are just bang, bang, bang, at each other all the time.'

Where the girls' campaign was disjointed with inconsistent attendance, the practice attendance for the boys' campaign was over 90%. Attendance was important in the players' eyes with James noting that 'coming to trainings and all that is super important so you know what you're up to on Saturday. Matthew felt the campaign had 'mean vibes every training, we were all keen to come to training so yeah just making a good culture amongst the boys and it just reflects on good trainings and good games and good seasons. That's a big one.'

The boys argued that getting the 'team culture right' is extremely important in a successful team and a good place to start. When the players were discussed their perspectives on the general experience and/or learning experience they received through the campaign, they would often refer to elements of relatedness, connection, and culture or 'mean vibes,' rather than the technical application (such as practice design and questioning approaches) of GS.

The boys rated the culture in their campaign high, where connections between players got stronger as the campaign progressed. The boys performed well in their first two matches, with two comprehensive wins, which potentially helped build confidence and a positive atmosphere amongst the group. However, the coaches also gave the players a lot of ownership and encouraged problem-solving in keeping with GS. They also started practices with fun games (which they referred to as 'icebreakers' or 'energisers') to stimulate laughter and dialogue between players. The players enjoyed this approach to practice as it was fun and relaxed. Liam felt the bond between players got stronger as the campaign progressed, which he felt linked with improved performance, as he explains:

> Mine [rating out of 10 for enjoyment] before, a couple of weeks ago, would have been about a six, because we would just come to training and not know each other and pretty much just go home. But now it's up around the eights or nines as we're getting out there and having a laugh. And it's showing that it's getting way better. Like tonight the intensity was mean. It feels mean going into Saturday, so I can't wait for that.

The boys also felt that practising contact offered the opportunity to learn about their teammates and build trust. Rugby is a highly combative sport and the boys felt that trust could be earned through displaying high levels of physicality in practice situations. Jackson felt the team needed to bring physicality in practices noting that 'if you can't tackle your mates or blow your mates out of a ruck then you can't tackle the opposition.' Lucas supported this view because 'if you can't just put like a decent hit on in training, then you can't trust your mates to do it in a game.' Ryan was a matter of fact when saying 'if you don't like contact you shouldn't be playing

rugby to be honest.' Contact sessions soon highlighted who they could trust and became a place to earn respect amongst teammates.

The boys' coaches built trust with their players by reinforcing to the players to take risks, push their limits and that mistakes were an opportunity to learn from, which appeared to build trust with the players. This was a welcome relief for some players who had different experiences in their 1st XV's, such as being unnecessarily punished following mistakes, where James felt that players could be 'forced into their shell and start playing real conservative,' with Finn explaining 'you don't want to be the one who makes the mistake.' Jackson would play conservatively 'especially if the boys are getting a bit 'agro' at you, you just go basic as, so it stops.'

Discussion: Culture of Trust

The link between how team culture impacts on learning has been somewhat overlooked in current GS literature, which appears at odds with GS theory being based on social constructivism. Kidman (2005) has weaved aspects of 'team culture' through case studies relating to 'athlete-centred coaching' with referencing to 'teaching games for understanding.' However, most literature has highlighted the benefits of social constructivism such as; enhancing cooperation and relationships between players (Harvey, 2009; Light, 2004, 2006), strengthening social skills (Fry et al., 2010), citizenship skills (Butler, 2006), in order to collaboratively connect new learning to prior knowledge (Chambers, 2013).

The results of this study have highlighted that teenage rugby players seek a strong connection with their peers. It appears that a GS approach to coaching works best when there is a strong team culture of trust and togetherness. Topics around team trust, connection, and culture constantly rose to the surface in the player interviews. Such topics were not explicitly sought after through the research design, so it was interesting that conversations regularly drifted back to such topics.

Often coaches face the dilemma of balancing team dynamics with performance outcomes, however, both campaigns highlighted the importance of developing a culture of trust between all people involved including players, coaches, and management, whilst implementing a GS approach. This needs to be worked on, otherwise, it appears that a GS approach can stall, as well as highlight issues within the team. Without trust, the players were not willing to answer questions due to a fear of being judged. As learning in a GS context is underpinned by social constructivism and reliant upon a culture of trust, coaches should pay attention to aligning both the technical application of GS, along with fostering a safe, trusting environment that has a 'mean vibe.' And as games can often expose problems, be messy with high error rates, players need to feel confident that they won't be ridiculed or punished following errors (Gray et al., 2008). The girls provided suggestions, such as a team-building camp, however, a team camp was not able to be actioned due to time-frames and external commitments from the players.

Although some situations in the girls' campaign did escalate at practices and eventually a match, this may be seen as a positive in dealing with issues and moving forward. For example, as Ruby and the head coach were both dealing with grief, uncharacteristic behaviour surfaced, where these deeper issues were brought to the surface through interviews and reviewing the practices. As a result, support was provided to both the player and coach, albeit post-season. It is unclear if a traditional technique-based approach would have raised the same issues, although tension between players in closed practice contexts was almost non-existent, as errors and consequences for errors were low.

Coaches generally facilitate team practices to help their players and team improve their performance. GS is generally seen as a long term investment (Light, 2004), which is supported by Miller et al. (2017) and Pizarro et al. (2017), so a high attendance rate at practice is needed to support improved performance. Coaches should consider how to engage players, so they want to attend practice as the players valued the place of team practices in helping them and their team to perform better. Some had mixed experiences with attendance at their school 1st

XV team practices. The players agreed that if the culture is right or had ‘mean vibes,’ where there was a mix of fun with hard work then attendance would be better.

Practice attendance is a complex challenge far broader than this research set out to find, but the boys were engaged in the approach to practice, whilst enjoying the ‘vibe’ of the team environment. The high attendance rates highlight how engaged the players were, although it is unclear if this is in relation to the team culture, practice environment, status of representative rugby, competition for starting positions or other factors. Although Ryan felt that ‘if you can make trainings fun then people will play sport more I think.’

It appeared that games and game scenarios amplified team culture issues, particularly in the girls’ campaign, as errors from individuals would cause frustration. It is not clear if GS led to the tension or whether the tension existed, and the GS approached exposed tension more than may normally occur. Mckay and O’Connor (2018) noted that increased error rates may potentially reduce confidence and trust within the team environment. However, to date scant attention has been afforded to the connection between GS and team culture. Kidman (2005) notes that ‘without quality team culture, success, learning and often winning are difficult. Thus, a major challenge for coaches is to bring athletes together for learning and success’ (p. 21). Kidman brings context through case studies of elite coaches, where many of these coaches (including Wayne Smith), have implemented game-based coaching practices (namely teaching games for understanding) and states that ‘through games, athletes, share success and failure; they learn how to trust each other and to know each other’s way of competing and making decisions, which enhances team culture’ (p. 19). The highlighted case studies tend to depict ‘best case scenario’ and through coach a perspective. However, this study has highlighted participant perspective and potential challenges with implementing a GS approach, which may either enhance or erode team culture. The impact that peers can have on the learning experience has been overlooked in current GS research and it is something that could be explored further.

Summary

In summary, this chapter outlined that the players felt that practices should replicate the realities of a rugby match. Replicating reality was best achieved through suitable practice design, practising against opposition, integrating contact into practice, and employing a questioning approach. A further theme of a culture of trust was highlighted, which appears to be critical in successfully implementing a GS approach. Each theme was discussed outlining potential benefits and challenges of GS, pertaining to the learning experiences of teenage rugby players and implications for coaches, coach educators, and the wider practice of coaching, particularly from a pedagogical perspective.

Chapter 5: Conclusion

Despite forms of game-based coaching approaches being around for the past four decades, they have yet to make a significant impression in rugby coaching pedagogy. This study explored how a GS coaching approach impacted on the learning experience for teenage rugby players. The aim was to use player voice to not only gain insights into a GS approach but also help shape the respective campaigns to better cater to player needs. Through these insights, it is hoped that coaching and coach education may benefit from offering a practice approach that teenage rugby players (who are a target group of NZR due to a declining participation trend), want to engage with and that will benefit their learning.

Through player voice, it was clear that players wanted the practice environment to replicate the reality of a rugby match. This was best achieved through getting the practice design 'right', using opposition, applying contact and the use of questioning. A further theme of team culture of trust emerged, where it appeared that the success of GS was determined by how much trust existed between people involved in the team environment, including players, coaches, and management. These findings in relation to the players' learning experiences, will be unpacked further to discuss implications for coaches and coach education while highlighting further questions and research opportunities.

Implications for Coaches

This study supported previous research, highlighting the importance of getting the practice design right (Harvey, 2009) to support player learning. Rugby is a multi-faceted sport combining elements of structured set-piece and unstructured 'ball in play' elements. Through the research of Mckay and O'Connor (2018), it was clear that rugby practices required a balance of both structured and unstructured practice approaches to better replicate the reality of a rugby match. The challenge for coaches is that the McKay and O'Conner study was conducted in the elite professional Super Rugby context, so may not entirely replicate the exact context for teenagers. The key for coaches is to understand what their level of rugby

looks like, so they can spend more time practising aspects that occur more often. The coaches of both campaigns balanced practices to combine both structured and unstructured play, where skills were generally coached through small-sided games. Generally, all practice situations utilised opposition, as long-standing rugby traditions of unopposed practice methods, made little sense to the players. Coaches are strongly encouraged to utilise opposition in practice as this was well received by the players as they felt the practices looked and felt like rugby, which better prepared them for the demands of the match.

Occasionally drills were adopted, especially in the girls' campaign, to support learning. A misconception of GS is that it is just games and drills are not to be used. However, this study highlighted that utilising drills and direction instruction has its place, especially if there is associated meaningfulness for players, such as where it fits in the match and why they are doing it. Coaches would be encouraged to design drills to replicate the reality players face in a match, such as positional demands for tackling and passing. Keeping drills short in time is advised, as there was push back from the players for prolonged repetitive drills that treated them 'like robots.'

This study also highlighted the importance of keeping games simple through clear rules and explanations. Too many rules led to confusion and frustration for the players, where they would resort to 'just playing' with little purpose. It was preferable to start simple with one or two rules, then slowly progress by adding new challenges. Potentially coaches could adopt the following process to help with clarity. 1. Explain the purpose/objective. 2. Identify the space where the game will be played. 3. Explain or demonstrate how to score. 4. Explain or demonstrate one or two key rules (which links with purpose). 5. Play. 6. Introduce additional rules, constraints, and adjustments if needed.

Often teenage rugby teams have small squads, so do not allow for fully opposed 15v15 practice scenarios, which was the case for the girls' squad. Smaller squads mean fewer opportunities to practise in a full rugby context and may also dissuade coaches from practising contact. The risk and reward of contact practice will continue to be a conundrum for coaches,

as contact comes with the risk of injuries. This, along with small squad sizes, may explain why teams have resorted to unopposed run-throughs, focusing on perfecting attacking plays and systems. Small squads do still allow for small-sided games, particularly when the focus is on skill development. There are also opportunities to practise 15v15 scenarios against other teams if the opportunities present. However, as most teenage teams are based in SS's, there may not be other teams of similar age and/or ability to get the benefit of opposed practice sessions. This was certainly the case for players in this study, where none of their schools had equivalent aged or able squads to practise with and against.

Questioning is a key tool that coaches may use to unpack learning with their players. When done well the players responded positively to a questioning approach as it handed over power, set them up to think for themselves, and socially construct solutions to problems. The players felt this made sense as they would be required to make decisions both individually and collectively in a match as the coach would not be on the pitch with them. However, questioning can be complex. It takes a lot of skill from the coach to balance the amount of time spent on questioning, asking suitable questions, listening, probing, whilst considering individual preferences, team dynamics, and suitable approaches for different contexts. The GROW model (Harvey et al., 2016; Whitmore, 2010) proved to be a useful tool that may help coaches frame their questioning approach.

Often coaches will adopt a whole group questioning approach, although this approach received mixed feedback from the players, where their preference was small group and individual approaches. Player engagement through a questioning approach can be problematic as it often relies on the ability of players to confidently verbalize their thoughts, which does not suit all players. Coaches are encouraged to apply a range of approaches (such as a continuum or demonstration), clearly understand why they are questioning and for who the questioning is aimed at, as not all contexts are benefiting every player. The engagement through questioning will also depend on the levels of trust within the team.

The importance of team culture surfaced through almost all FG and individual interviews and highlighted the importance it holds with the players where they affirmed a need for 'mean vibes' and 'trust' with their peers. There were instances where the practice design and questioning approach both enhanced and strained the culture of the team. GS can lead to practices being quite messy, with high error rates and confusion, which proved to be a source of frustration between some players. Frustration boiled over at times in the girls' campaign, which led to players disengaging from practices leaving little or no impact on their learning. However, at times connection within the team was enhanced as players had to work together to find solutions. Coaches are required to be skillful in fostering environments that encourage players to stretch their skill set by taking risks, without the fear of ridicule or unnecessary punishment, or players may participate and play within themselves.

Teenage rugby players are thirsty for a team culture of trust, although this is vastly overlooked in current GS research. GS is founded on a social constructivist approach, with current literature mostly advocating all the benefits of this theory. (Butler, 2006; Chambers, 2013; Fry et al., 2010; Harvey, 2009; Light, 2004, 2006). However, coaches need to consider how to build an environment where players have the confidence to socially construct knowledge in a safe and inclusive way. This is no easy task but may in fact be the key for coaches in applying a GS approach with success.

Implications for Coach Education

The players who participated in this study highlighted a need for practices to replicate the realities of a match. However, GS has made little impact, as traditional coaching approaches still exist in rugby, where players spend large proportions of practice being coached in unopposed situations and through technical drills, which rarely replicate the realities of a match. This may be a 'hangover' from previous generations where there was more set-piece and less 'ball in play' time (Mckay & O'Connor, 2018).

However, traditional coaching methods are reinforced through current coach education frameworks, including formal programmes and resources. For example, the Rugby Smart programme is delivered to all coaches of teenagers, which emphasises the safety of the tackle, scrum, ruck, and warm-up. Coach educators are guided by NZR to facilitate these programmes, emphasising coaches to break down skills into technical components and set up a series of drills for their players. This technical drill-based approach is also reinforced through the NZR video resource platform Rugby Toolbox (New Zealand Rugby, 2021). Often, what is replicated in these drills is far removed from the realities that players will face in a match, as a match is full of dynamic movements, opposition pressure and decision-making.

Consideration should be given to coach education programmes and supplementary resources that support coaches lead practices that better replicate the realities of a modern rugby match. For example, balancing set-piece and ball in play, encouraging transitional play, small-sided games to enhance skill development, activities to replicate positional and contextual demands, employing opposed practice contexts, and balancing the contact elements of rugby.

Players responded well to being questioned, although, there is a lack of detailed support for coaches on how to do this effectively. The GROW model framework (Harvey et al., 2016; Whitmore, 2010) was used through this campaign, which provided a process for the coaches, although maximising learning for players through a questioning approach is not simple as following a few steps. Coaches are dealing with complex dynamics within team environments such as individual needs, values, backgrounds, confidence levels, as well as social dynamics happening between players. All this needs to be considered when employing a questioning approach. Programs such as Rugby Smart pay little or no consideration to support coaches develop questioning approaches, nor do they reinforce player-centered coaching approaches which the players clearly thrived on.

This study has also highlighted the importance teenage rugby players place on team culture for both their engagement and learning, which should be considered in future coach education

frameworks. Coach education that fails to emphasise the importance team culture holds for teenagers, coupled with support for coaches to enhance their ability to facilitate a culture of trust may in fact set coaches up to fail.

Coach education and resourcing should consider mixing *what* to coach with *how* to coach. Designing the practice environment to engage players and support their learning is no easy feat and requires some skill from coaches as they need to keep things simple, a sound knowledge of rugby and an ability to change the design and question appropriately to meet the needs of the players. Potentially video resourcing showcasing games, scenarios, and activities integrated with coaching process (such as questioning approaches), as well as constructing a GS framework would be helpful for coaches.

This study adopted a collaborative action research approach (Evans & Light, 2008), which is closely aligned to mentoring or observation and feedback approaches that currently exist in coaching programmes such as the World Rugby Level 2 and Sport NZ Coaching For Impact. This approach appeared to have the required impact as the coaches improved aspects of their pedagogical understanding and implementation of GS. However, this intimate approach is almost impossible to deliver on a mass scale. Governing bodies such as NZR face challenges around influencing coach behaviour on a large scale with the current ‘go to’ ‘one off’ workshop approach, such as Rugby Smart.

Governing bodies such as NZR may consider alternative approaches to ‘develop’ coaches such as utilising social media, mailouts, highly respected coaches to lead messaging, embedding coaching frameworks into the participation and/or competition structures, piloting initiatives, and other ways that coaches want to engage with. This study has highlighted opportunities to deliver the practice experience for teenagers differently to better meet their needs. Potentially the same opportunities exist to deliver coach education in new ways to meet the needs of coaches.

Further Questions

Although this study has reinforced some strengths of a GS approach, there is still much to understand about this approach in a rugby context. The effectiveness of games and scenarios in supporting player learning is still in its infancy stage. Where some quantitative studies have attempted to measure technical and tactical competency through intervention, no similar studies were able to be sourced in a rugby context. This study was qualitative in nature and relied on participant voices to help understand GS more intimately. The players from each campaign also had different perspectives on GS, but it is unclear whether this is due to their playing experience, gender, coaching capability, performance results, or other factors not considered. Further understanding would be needed to reference the findings of this study.

Whereas the girls highlighted their need for more technical development through drills, the boys did not highlight this preference through FG interviews. It is unclear as to why this is the case. The merits of technique-based coaching approaches may be best explored with a wide range of players, gender, and mixed playing experience, to better understand if this approach can be utilised or whether it even has its place. Long-standing technique-based coaching approaches in rugby have been left unchallenged. It would be of interest to know if technical approaches are of benefit both through quantitative and qualitative research approaches. For example, are there opportunities to understand how technical coaching approaches link with competency? With challenges around contact practice, in particular tackling, it would be worthwhile to understand how simulating non-contact practice scenarios may support tackle competency.

Questions are indeed raised over questioning and if it should be the ‘go-to’ for GS. Questioning approaches have had somewhat of an ‘arranged marriage’ with GS and other forms of game-based learning approaches, with little questioning why that is. When done well, questioning appears to foster relevant learning for players, however, must it always be the preferred approach? It is unclear if questioning, game design, or other factors have the most impact on learning, as is the balance between questioning and being instructional. Questioning is a skill

and like all skills, it needs to be practiced, refined, applied, and adapted, as is understanding the right time to use the skills. Coaches need to know when the right time is to be instructional, when to question, or when an adaption to the practice design may be more relevant. We may spend time focusing our efforts on questioning approaches to find that the game and practice design has the biggest impact. Scrutiny could also be directed at whether spending time building awareness around technical proficiency and tactical awareness helps or hinders performance? This is all unknown, but questioning is certainly more complex than iterated in GS literature and needs further consideration, especially when attempting to depict the impact on learning.

It is unclear whether the engagement the players had through GS was due to the practice design or due to having an increased voice. For example, the coaches took feedback from the players, concerning increased contact levels and implemented appropriately to satisfy player needs. The desire for more contact then dissipated as the campaign progressed and it is uncertain if player satisfaction came from their contact needs being met or the fact that they were engaged and heard in the decision-making? Potentially engaging players in the practice design may be more powerful than the actual practice design itself.

Fostering a team culture of trust is certainly a complex yet important space for coaches to get right with teenagers and requires more attention. The boys highlighted their campaign had ‘mean vibes,’ namely due to chances to bond with their teammates and potentially their increased understanding of why the coaches were adopting a GS approach, coupled with heighted empowerment to make decisions. Although advocates of GS support the notion that social aspects such as team culture, trust and player connections will be enhanced through GS, the findings from this study were mixed in supporting this. In some cases, in particular the boys’ campaign, team culture appeared to strengthen throughout the campaign, where in the girls’ campaign it was not quite so smooth sailing. It may in fact be argued that GS increased tension and highlighted underlying issues of mistrust within the team. However, it is unclear

whether GS was the root cause of mistrust and whether a culture of trust needs to be established to implement GS or whether GS is a way to foster a culture of trust.

An underlying issue of coach and player well-being appeared to influence the cultural dynamics in the girls' campaign. Both the head coach and an influential player were dealing with respective deaths of close family members, which was not acknowledged and addressed through the campaign. Coaches are often faced with personal challenges, whilst burdening the weight of player well-being. There appears a need to gain greater insight into the relationship between team culture, well-being and GS, and how they each may impact on learning for players.

More thought and consultation is required to make GS accessible to all coaches. Implementing GS is not as easy as 'kicking a ball out' and playing. There are challenges highlighted through this study that need consideration, where ultimately coaches are required to have a sound knowledge of the game, players, and coaching pedagogy. As discussed, intimate interventions between coach and coach educator are not feasible when attempting to make an impact on a national coaching community. NZR may be advised to engage in a process to better understand this predicament, which may be sought from within the rugby or sporting community, or in fact outside of sport. The answer is surely not to put 'all the eggs in the workshop basket!'

Closing Comments

NZR and other governing bodies such Sport NZ, has recently embarked on a journey of curbing the downward trend of teenagers opting out of rugby by exploring offerings that youth want to engage with. Too often decisions on the direction of youth sport are held in the hands of administrators far removed from the reality of what the participants want. This study engaged the voice of teenage rugby players to better understand how a GS coaching approach impacts on their learning experience. The teenage participants in this study thrived on being empowered, having autonomy of their decision-making, and practising in a context

that authentically represents the game of rugby. Engaging teenagers back into sport is no easy feat and is not as simple as tweaking participation and competition structures and the look and feel of the game. As long as organised sport exists, coaches will help guide player learning, so it is time to offer a practice experience that captures the hearts and minds of teens. GS may be an approach that, if adopted, on a wider scale could engage young players back into rugby. It certainly beats ‘running against the wind’ and being treated like robots.

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Appendices

Appendix A – Information Sheet For Focus Group Participants

INFORMATION SHEET FOR FOCUS GROUP PARTICIPANTS

How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

Teenage rugby players involved in Bay of Plenty representative programmes are being recruited to participate in focus groups for a master's thesis study conducted by Kyle McLean, supervised by Dr Clive Pope and Dr Rob Townsend. These focus group interviews are an important part of a research project being conducted by Kyle McLean, which examines how a game sense coaching approach impacts on the learning experience of pre-elite teenage rugby players. In this project we are interested in answering the following questions:

I. How do game scenarios in practice impact on player learning?
II. How does a player-centred approach impact on player learning?
III. How does coach questioning in practice impact on player learning?
IV. What alternative training methods and / or approaches would support player learning?

The results from this investigation will hopefully provide an understanding of how teenage rugby players perceive a game sense coaching approach impacts on their learning experience and what can be done to make training environments for teenage players more relevant. The information collated from these focus groups will then be used to construct a thesis to be shared with New Zealand Rugby and other interested parties.

If you choose to volunteer your time for this study, you may be asked to participate in three focus group interviews which will be scheduled immediately following a team practice. It is anticipated that each focus group interview will take between 30 and 60 minutes to conduct. It is important that you know that you will not have to answer any question you do not want to, and you can leave the focus group at any time. The focus group conversations will be audio recorded.

If you choose to participate, your identify is likely to be known by your teammates, coaching staff and myself. I will do everything I can to ensure your identity is protected in my research; your name and team name will never appear in publications deriving from this research.

Dinner and refreshments will be provided, as well as appropriate travel arrangements made to ensure your safety.

Thank you for considering this invitation to share your personal opinion and insights into this important issue. Please contact me via phone or email (see below) if you have any further queries about this project.

Contacting the Researchers

If you have any concerns about ethical matters or other issues related to the research, please contact the primary researcher:

Kyle McLean

Email: kyle@boprugby.co.nz
Cell: 020 40010130

OR

Clive Pope
Chief Supervisor
Faculty of Health, Sport & Human Performance
University of Waikato
Email: clive.pope@waikato.ac.nz
Phone: +64 7 8384466 extn: 7838

Use of Information

The data collected during the focus groups will be used in the final thesis, (potential) publication and presentations. Research articles will be published in academic journals and will be read mostly be university students, researchers and academics. The data will also be presented to New Zealand Rugby, Sport New Zealand, provincial unions, groups within universities and perhaps at academic conferences.

Participants' Rights

As a participant you have the right to:

- Ask any further questions about the study which occur during your participation.
- Refuse to answer any particular question, or leave the focus group at any time. (I note that it is difficult to remove one person's comments from a group conversation, but if you ask me to do so, I will attempt to remove your ideas.)
- Be given a summary of the focus group conversation.
- Be given a summary of the findings from the study when it is concluded.

Please provide a physical address or email address on the Informed Consent Form so that we can send you a summary of the focus group conversation.

Records

All records from the interviews will be kept confidential. They will be archived for five years and then destroyed according to University of Waikato Human Research Ethics Regulations. The audio recordings will be kept in a secure location for the duration of the research process. Any other use of audio recordings will not occur without your permission.

This research project has been approved by the Human Research Ethics Committee (Health) of the University of Waikato under HREC(Health)2019#48. Any questions about the ethical conduct of this research may be addressed to the Secretary of the Committee, email humanethics@waikato.ac.nz, postal address, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

Appendix B: Information Sheet For Individual Interview Participants

INFORMATION SHEET FOR INDIVIDUAL INTERVIEW PARTICIPANTS

How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

Teenage rugby players involved in Bay of Plenty representative programmes are being recruited to participate in individual interviews for a master's thesis study conducted by Kyle McLean, supervised by Dr Clive Pope and Dr Rob Townsend, through the University of Waikato. These individual interviews are an important part of a research project being conducted by Kyle McLean, which examines how a game sense coaching approach impacts on the learning experience of pre-elite teenage rugby players. In this project we are interested in answering the following questions:

V. How do game scenarios in practice impact on player learning?
VI. How does a player-centred approach impact on player learning?
VII. How does coach questioning in practice impact on player learning?
VIII. What alternative training methods and / or approaches would support player learning?

The results from this investigation will hopefully provide an understanding of how teenage rugby players perceive a game sense coaching approach impacts on their learning experience and what can be done to make training environments for teenage players more relevant. The information collated from these interviews will then be used to construct a thesis to be shared with New Zealand Rugby and other interested parties.

If you choose to volunteer your time for this study you may be asked to participate in one interview which will be scheduled following the season, at a time convenient to you. It is anticipated that this interview will take between 45 and 90 minutes to conduct, and it will be audio recorded. It is important that you know that you will not have to answer any question you do not want to, and you can stop the interview at any time. If you choose to participate, I will do everything I can to ensure your identity is protected; your name will never appear in publications deriving from this research. Interviews will be conducted at a time and venue suitable to you. A parent, friend, teacher or guardian should be present. After the interview, I will return a written transcript of the interview to you. At this time, you can add or delete information, or correct the details that you have shared. You will have two weeks to look at the interview transcript after you receive it.

Thank you for considering this invitation to share your personal opinion and insights into this important issue. Please contact me via phone or email (see below) if you have any further queries about this project.

Contacting the Researchers

If you have any concerns about ethical matters or other issues related to the research, please contact the primary researcher:

Kyle McLean
Email: kyle@boprugby.co.nz
Cell: 020 40010130

OR

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Phone: +64 7 8384466 extn: 7838

Use of Information

The data collected during the interviews will be used in the final thesis, (potential) publication and presentations. Research articles will be published in academic journals and will be read mostly be university students, researchers and academics. The data could also be presented to New Zealand Rugby, Sport New Zealand, provincial unions, groups within universities and perhaps at academic conferences.

Participants' Rights

As a participant you have the right to:

- Ask any further questions about the study which occur during your participation.
- Refuse to answer any particular question, ask to have the recorder turned off, or withdraw from the interview at any time.
- Add, delete or amend information in the interview transcript within two weeks of receiving the transcript.
- Be given a summary of the findings from the study when it is concluded.

Please provide a physical address or email address on the Informed Consent Form so that we can send you a copy of your interview transcript. You are encouraged to read the transcript carefully and change, add or delete any comments.

Records

All records from the interviews will be kept confidential. They will be archived for five years and then destroyed according to University of Waikato Human Research Ethics Regulations. The audio recordings will be kept in a secure location for the duration of the research process. Any other use of audio recordings will not occur without your permission.

This research project has been approved by the Human Research Ethics Committee (Health) of the University of Waikato under HREC(Health)2019#48. Any questions about the ethical conduct of this research may be addressed to the Secretary of the Committee, email humanethics@waikato.ac.nz, postal address, University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

Appendix C: Information Sheet For Members Of The Public

INFORMATION SHEET FOR INTERESTED MEMBERS OF THE PUBLIC

How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

This research project is being conducted by Kyle McLean, supervised by Dr Clive Pope, which examines how a game sense coaching approach impacts on the learning experience of pre-elite teenage rugby players. In this project we are interested in answering the following questions:

I. How do game scenarios in practice impact on player learning?
II. How does a player-centred approach impact on player learning?
III. How does coach questioning in practice impact on player learning?
IV. What alternative training methods and / or approaches would support player learning?

The results from this investigation will hopefully provide an understanding of how teenage rugby players perceive a game sense coaching approach impacts on their learning experience and what can be done to make training environments for teenage players more relevant. The information collated from this study, will then be used to construct a thesis to be shared with New Zealand Rugby and other interested parties.

Data is being collected via participant observations, focus group interviews and individual semi-structured interviews.

Contacting the Researchers

If you have any concerns about ethical matters or other issues related to the research, please contact the primary researcher:

Kyle McLean
Email: kyle@boprugby.co.nz
Cell: 020 40010130

OR
Clive Pope
Chief Supervisor
Faculty of Health, Sport & Human Performance
University of Waikato
Email: clive.pope@waikato.ac.nz
Phone: +64 7 8384466 extn: 7838

OR
Ethics Committee
University of Waikato
humanethics@waikato.ac.nz
Phone: +64 7 837 9336

Appendix D: Informed Consent Form For Potential Focus Group Participants

INFORMED CONSENT FORM FOR POTENTIAL FOCUS GROUP PARTICIPANTS

How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

I have read the **Focus Group Information Sheet for Participants** form for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction and I understand that I may ask further questions at any time.

I agree to participate under the conditions set out below:

1) I, the participant, have the right to refuse discussion on any issue. I can leave the focus group at any time.

2) I understand the researcher will keep all records from the interview confidential. The audio recording will also be kept in a secure location for the duration of the research process. I understand that all data will be archived for at least five years according to University of Waikato Human Research Ethics Regulations.

3) The focus group information will be use by Kyle McLean to write his thesis, research articles, presentations and teaching. I consent to the data being used for publication and teaching purposes. I understand that any use of the audio recordings, such as in teaching, will not take place without permission from me.

4) I understand that if I have any concerns, I can contact either of the primary researcher, Kyle McLean (kyle@boprugby.co.nz) or the project supervisor, Clive Pope (clive.pope@waikato.ac.nz).

Please complete the relevant details below, adding pseudonym & other information where required:

Signed: .....
Date:.....

Name (or pseudonym): ..... Age: .....

School……. Gender: ……

Team: (please circle) U18 Boys U18 Girls

Current preferred contact details:
.....
……
…….

Appendix E: Informed Consent Form For Interview Participants

INFORMED CONSENT FORM FOR POTENTIAL INTERVIEW PARTICIPANTS

How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

I have read the **Interviews Information Sheet for Participants** form for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction and I understand that I may ask further questions at any time.

I agree to participate under the conditions set out below:

1) I, the participant, have the right to refuse discussion on any issue or to refuse the recording of any part or whole of the interview. After having read the transcript, I have the right to request the erasure or amendment of any record with which I am uncomfortable.

2) I understand the researcher will keep all records from the interview confidential. The audio recording will also be kept in a secure location for the duration of the research process. I understand that all data will be archived for at least five years according to University of Waikato Human Research Ethics Regulations.

3) The transcribed audio or written data collected by Kyle McLean will be used in the thesis, research articles, presentations and teaching. I consent to the data being used for publication and teaching purposes. I understand that any use of the audio recordings, such as in teaching, will not take place without permission from me.

4) I understand the implications of choosing full anonymity (pseudonym with no other information), partial disclosure (pseudonym with some additional information, such as age, gender), as conditions of confidentiality.

5) I understand that I can withdraw from the interview at any time. I also understand that my data can be withdrawn up until two weeks after receiving my interview transcript.

6) I understand that I can decline to answer any particular question in the study.

7) I understand that if I have any concerns, I can contact either of the primary researcher, Kyle McLean (kyle@boprugby.co.nz) or the project supervisor, Clive Pope (clive.pope@waikato.ac.nz).

Please complete the relevant details below, adding pseudonym & other information where required:

Signed: .....
Date:.....
Name (or pseudonym): ..... Age: .....
School……. Gender: ……
Team: (please circle) U18 Boys U18 Girls
Current preferred contact details:
.....
……
……

Preferred level of anonymity: Full anonymity/Partial disclosure

Appendix F: Draft Interview Questions for Focus Groups

How does a game sense coaching approach impact on the learning experiences of teenage rugby players?

The GROW model will be implemented, with the ability to probe players. As I will be observing training, discussions will link to observations as well as general discussions. There are also opportunities to link questions and discussions to previous practices and focus group interviews.

Introduction
General chit chat about the season, school,
Ground Rules (Krueger, 2014)

- No wrong answers – just looking for opinions / points of view
- Everyone has a chance
- Recording

Remind participants what we are focusing on – Game sense

1. How did you find todays training? What they thought of the coaching approach? 2 words to describe todays training (potentially time by themselves to record down). When you walked off the field tonight, how did you feel? What did you think the coach was trying to achieve tonight? How were you feeling before you arrived?
2. What are your thoughts on using games in training? (refer to examples from training). Use examples from previous trainings. How effective was it out of 10? Why a 7? What would make it a 10? What are some other ways you have trained that skill?
3. What are your thoughts on using game like scenarios in training? (refer to examples from training)
4. (refer to specific part(s) of training)
    a. What was the objective?
    b. How effective was it in helping you learn?
        i. Enhancing performance, receiving, perceiving. Content v playing
    c. Are there any other ways that would have helped your learning?
5. What are your thoughts on a player-centered approach?
    a. Did you feel the session about you and your needs?
    b. How do understand player-centered coaching? Characteristics, why would coach use it? Do they actually prefer it?
    c. How effective is a player-centered approach on your learning?
6. (refer to part(s) of training where coach questioned players)
    a. Why did the coach question you?
    b. How effective was it in helping you learn?
    c. Are there any other ways that would have helped your learning?
7. What parts of todays practice best helped learning?
8. What parts of todays practice didn't help learning?
9. What questions do you have for me??

Link FG #2 and #3 with the previous FG

Appendix G: Ethics Approval

The University of Waikato
Private Bag 3105
Gate 1, Knighton Road
Hamilton, New Zealand

Human Research Ethics Committee
Julie Barbour
Telephone: +64 7 837 9336
Email:humanethics@waikato.ac.nz

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

25 July 2019

Kyle McLean
By email: kyle@boprugby.co.nz

Dear Kyle

HREC(Health)2019#48 : How does a game sense coaching approach impact on the learning experiences of pre-elite teenage rugby players?

Thank you for submitting your amended application HREC(Health)#2019#48 for ethical approval.

We are now pleased to provide formal approval for your project where you will recruit players from two rugby teams: Paengaroa (U18 Boys) and Te Puke (U18 Girls). You will carry out the following activities:

1. Observations of the teams practicing,
2. Three focus groups with each team through the season,
3. Interviews with individual team members after the season has finished.

You have indicated that you will seek permission from the team coaches, and will provide information to the team members (and parents) via an information evening.

Please contact the committee by email (humanethics@waikato.ac.nz) if you wish to make changes to your project as it unfolds, quoting your application number with your future correspondence. Any minor changes or additions to the approved research activities can be handled outside the monthly application cycle.

We wish you all the best with your research.

Regards,

Julie Barbour PhD
Chairperson
University of Waikato Human Research Ethics Committee