

Asia Pacific Conference on Teaching Sport and Physical Education for Understanding

2006



For those concerned with making
physical education and sport
educationally valuable



The University of Sydney



Proceedings for the Asia Pacific Conference on Teaching Sport and Physical Education for Understanding

Teaching for Understanding now a Global Movement

First developed in the early 1980s the past five years have seen a remarkable growth in interest in Teaching Games for Understanding (TGfU) to the extent that it can be seen as an international movement. Over this period there has been a rapidly expanding number of publications on TGfU and its variants, such as Game Sense, including books and special issues of international journals devoted to this approach.

The establishment of a series of international conferences on TGfU has made a very significant contribution to this growth. Beginning with the first conference convened by Dr Joy Butler in New Hampshire, USA (2001) conferences have since been held in Melbourne, Australia in 2003, Hong Kong in 2005, and Sydney, Australia in 2006 with the next to be again convened by Dr Joy Butler at The University of British Columbia, Vancouver, Canada in 2008. One of the features of the Melbourne and Hong Kong conferences was the growth of interest in understanding approaches by teachers in the Asia and Oceania region.

The Sydney conference thus focused on the development of understanding approaches to teaching and coaching in the Asia and Oceania region. It filled a gap for the region between the major international conferences in Hong Kong (2005) and Vancouver (2008). It also responded to the rapid growth in interest in 'understanding approaches such as Game Sense from teachers in the region. Teaching Games for Understanding (TGfU), Game Sense (the Australian variation) and other regional variations offer exciting opportunities for teachers of physical education and sport coaches. They are also increasingly shaping education policy in the region. For example, the Singapore Ministry of Education has adopted the Games Concept Approach (GCA) from 1999 and the new 7-10 NSW Personal Development, Health and Physical Education syllabus is driven by the Game Sense approach.

The Sydney 2006 conference had a strong emphasis on the needs of teachers and coaches. In particular it focused on Game Sense pedagogy that drives the new 7-10 NSW PDHPE syllabus. While traditional approaches make it difficult for physical education teachers to address the NSW Quality Teaching Framework the student-centred, inquiry-based Game Sense approach reflect the 3 dimensions of providing intellectual quality, a quality learning environment and learning that is significant for, and relevant to, students.

Hosted by the Division of Professional Learning

Faculty of Education and Social Work

The University of Sydney

Thursday 14 and Friday 15 December 2006

Richard Light, Conference Convener

Scientific Committee

Ross Brooker, University of Tasmania

Wendy Piltz, University of South Australia

Paul Webb, University of Wollongong

Proceedings for the Asia Pacific Conference on Teaching Sport and Physical Education for Understanding

Peer Review: All articles published in this conference proceedings have undergone rigorous peer review as full papers involving an initial editor screening and blind review by at least two anonymous referees.

Editor: **Dr Richard Light, University of Sydney**

ISBN: **1 86487 889 4**
May 2007

Published by: **The University of Sydney**
Division of Professional Learning, A35-607
Faculty of Education and Social Work
The University of Sydney NSW 2006

Review panel: Dr Paul Webb, University of Wollongong
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The papers in this publication were presented at the inaugural Asia Pacific Conference for Teaching Sport and Physical Education for Understanding held at the University of Sydney 14-15 December 2006. They draw on work conducted on Teaching Games for Understanding (TGfU) and its variants such as Game Sense and Play Practice across a range of institutional and cultural settings. They include theoretical papers and reports on empirical research that deal with issues including children's affective experiences of physical education, the preparation of pre-service teachers, practical implementation, coaching in elite level sport and innovative data collection methods in research on TGfU. They provide valuable insight into the possibilities offered by exciting new pedagogical approaches for research and

teaching and learning in physical education and sport. The papers are all accessible and should provide stimulation for teachers, coaches, undergraduate and post graduate students and researchers working in the area of teaching and learning in sport and physical education.

I take this opportunity to thank the review team and the staff at the Division of Professional Learning in the Faculty of Education and Social Work for their fine work in getting this publication ready and published.

Richard Light, Conference convener and editor.

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Addressing the NSW Quality Teaching Framework in Physical Education: Is Game Sense the Answer?

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Introduction

The introduction of the 'NSW Quality Teaching Framework' (2003a) has had a very significant impact upon teaching and learning in NSW (New South Wales) public schools. In NSW the Department of Education and Training (2003c) argues that recent developments in educational research have shed light on what constitutes quality teaching and have consequently established a new model for pedagogy in NSW schools based upon the idea of providing quality teaching (NSW Department of Education and Training, 2003b). The NSW model of pedagogy focuses on the teaching practices that research indicates can make the most difference when it comes to improving student learning outcomes. The emphasis on providing intellectual quality, a quality learning environment and making the significance of learning explicit to students provides valuable framework within which teachers can strive to deliver quality teaching. It does, however, provide a challenge for the teaching of physical education in a subject area that has a long history of neglecting the intellectual dimensions of games, sport and other movement (Light, 2002). While many PDHPE teachers may struggle to deliver quality physical education teaching within this framework we suggest, as others have (Pearson, Webb & McKeen, 2005), that Game Sense pedagogy provides an ideal means through which PDHPE teachers in NSW can address the Quality Teaching Framework in the teaching of games and sport.

In this paper we address the rationale and main ideas of the quality teaching framework and provide an overview of the Game Sense approach to games teaching. We then specifically address the three central concerns of the Quality Teaching Framework, intellectual quality, providing a quality learning environment and making the significance of learning explicit to students showing how game Sense addresses each of these.

The NSW Quality Teaching Framework

In May 2003 the NSW Department of Education and Training released ‘Quality teaching in NSW public schools’. This was developed as a long-term strategic plan to support and focus on teaching and learning in NSW public schools. The model was designed for implementation across all key learning area (KLAs) from Kindergarten to Year 12. Quality teaching and learning is the result of a long history of research that has tried to identify teaching practices that improve student learning. Until recently there was little consensus about quality pedagogy because of the difficulty in isolating the independent effects of a specific teaching technique on student learning.

Building on research such as that of studies by Newman and Associates (1996) in the USA and the ‘productive pedagogies’ work in Queensland (Queensland School Reform Longitudinal Study, 2001) the NSW model identifies three key dimensions of quality pedagogy as that which:

- 1) Is fundamentally based on promoting high levels of **intellectual quality**
- 2) Is soundly based on promoting a **quality learning environment**
- 3) Develops and makes explicit to students the **significance** of their work.

The new NSW PDHPE syllabus provides the opportunity to provide high-quality learning experiences that can fit in with the Quality Teaching Framework. To integrate *intellectual quality* into the PDHPE program, we suggest there is a need to analyze what the central concepts and ideas are that we want the students to learn and the relationship/connections between each of these concepts. The dimension of

quality learning environment focuses on the need to make students aware of expectations, and ensure that they are challenging, but achievable. Students need the opportunity to exercise some control over what and how they learn. The quality learning environment focuses on learning, with an emphasis on clarity of what is to be learned, high expectations and social support. Students demonstrate this through engagement in learning, self-regulation and self-direction. Because of the nature of PDHPE the dimension of *significance* is of great importance, as students need to see clearly the connections between the learning that takes place in the gym or on the field and their *real world*.

Game Sense

The Games Sense approach is a student-centered, inquiry-based approach that allows students to develop their own skills and understanding while being actively involved in the game. Game Sense is a variation of Teaching Games for Understanding (TGfU) developed for coaching through collaboration between Rod Thorpe, the Australian Sports Commission (ASC) and Australian coaches (Light, 2004). It focuses on the game and not on the discrete skills or techniques that traditional approaches see as needing to be mastered before playing the game. All learning occurs within the authentic context of modified games or game-like activities to develop understanding, decision-making and skills that work within the context of a game. Skill development occurs at the same time as understanding with the modified games reducing the technical demands on the students so that they can concentrate on the games as a whole. In this way Game Sense integrates physical, intellectual and social learning. Children can understand similarities between games and explore common principles. Game Sense tends to use small sided, modified games that incorporate essential tactical structures but which are adapted to cater for different age, size, ability, inclination and motivation. As several researchers have argued, Game Sense, TGfU and other variations offer opportunities to intellectualize games teaching in physical education (Light & Fawns, 2001, 2003, Light 2002, Howarth 2000)

As social constructivist learning theory suggests, the social side of games has a major impact on the learning that takes place as full cognitive development arises from social interaction. The social constructivist theory of Vygotsky (1978) highlights the fundamental role that social interaction plays in learning. In Game Sense, the range of skills and understanding that can be developed from verbal and non-verbal interaction between the teacher and students or between peers exceeds that which can be attained alone. In Game Sense the teacher sets a learning environment with which the students engage and encourages students to explore, experiment, analyse, and solve the range of problems that arise in playing games. Dewey (1916/97) argues that learning occurs through experience in two ways. It occurs through the initial experience and again through the experience of immediate reflection upon that experience. This is precisely how learning occurs in the Game Sense approach to games and sport teaching. The Game Sense teacher and students engage in an active dialogue during the Game Sense lesson and students engage in dialogue between each other during 'team talks' and non-verbal dialogue during games (Light & Fawns, 2003). During game activities students regularly stop and reflect through group discussions that collectively contribute toward the development of understanding that can be articulated and later expressed in intelligent play. Through this process the student's scaffold knowledge and develop skills as the complexity of the games is increased (Light & Georgakis, 2005).

There are times in Game Sense when direct teaching of skills is appropriate but skills can be developed within the framework of the rules and defined spaces and manipulation of time and space in games. As Kirk and MacPhail (2002) suggest, tactics and strategies need to be learnt in unison with technique development in context. Game Sense teachers aim for a student-centered, teacher driven approach where the teacher acts as the facilitator, is creative and capable of lateral thinking in constructing learning experiences but limits direct instruction. Within this approach good questioning is an important aspect that will help guide the students and have them engage intellectually in the game. Game Sense emphasises the importance of affiliation (social interaction, making friends), achievement (doing something well or noticing improvement), and self-direction (opportunities to make choices) as students desire involvement in sport/games (Werner, Thorpe & Bunker, 1996, p.

32). The focus of Game Sense on the intellectual aspects of games and sport emphasizes higher order thinking in games such as strategic thinking, problem solving and decision-making. Teachers can't achieve intended learning outcomes and provide Quality teaching and learning if they don't understand how learning takes place.

As Forrest, Webb and Pearson (2006) argue, Game Sense is yet to make a significant impact upon teaching in NSW. As several other researchers have noted on a larger scale there tends to be resistance from both experienced and beginning teachers to implement a games sense approach, and this may be due to the fact that it challenges 'traditional' teaching in relation to PE that tends to focus on teaching skills as the basis of good teaching:

While the teacher may be convinced that skill-based
Lessons are having a positive affect in that some
immediate skill improvement is made, the social
and skill-related interactions might over time convince
the youngsters of their lack of ability.

(Thorpe 1992 in Werner et al. 1996)

Addressing the Quality Teaching Framework with Game Sense

Intellectual Quality is a core feature of Game Sense and its focus on the intellectual aspects of games distinguishes it from traditional directive, technique-focused approaches. While the new outcomes based curriculum in NSW sets out clear expectations students are expected to gain from PE, there is no identification as to how this can be achieved. The emphasis that Game Sense places on higher order thinking fits in well with the intellectual Quality of Teaching Framework. Game Sense encourages higher order thinking in two basic ways. First, it occurs through the use of language. This occurs in the discussions between students seeking to

solve tactical problems that arise in games and the class reflections upon action that the teacher encourages with generative questioning during and at the conclusion of the lesson. As Light and Fawns (2003) argue, thinking also occurs during games in an embodied way that bypasses language yet communicates meaning between students. As Light and Fawns suggest, this can be seen a case of the body thinking as students take in cues, perceive what is happening around them and make a range of instant decisions in a way that bypasses the conscious mind. As Dewey (1936/86) suggests, these can be seen as the body's 'mindful actions' in the form of intelligent movement in games. When the class stops to reflect and discuss, thinking is expressed through speech where the students are encouraged to develop strategies, ideas and concepts. This in turn encourages the students to think about the body's movement and its relationship to the dynamics of space and time.

... TGfU lesson can be seen as a holistic learning process in which the movements of the body are the grammar of the game informed by the articulated reasoning between games. This allows us to see the continuity between the reasoned articulations of play and the students informed movement in games. In this way, speech, thought and action interact to construct individual and collective understandings in a more integrated, cohesive, and human class dialogue.

(Light & Fawn 2003, p 167.)

Deep knowledge is provided in Game Sense as students must be familiar with the concepts and key ideas of games and need to be able to apply this knowledge when playing games. They develop, not only a knowledge of games that can be articulated but also knowledge at a deeper, embodied level that is expressed in action within games. Forrest, Webb & Pearson (2006) suggest that deep knowledge develops over four stages of: 1) Elementary understandings of games within a game category, 2) elementary understandings of games across game categories, 3) Advanced understandings of games within game categories, 4) Advanced understandings of games across game categories. The game categories of invasion,

striking, net wall and target games emphasize the common tactical dimensions of games within a category. Recognising and understanding the common tactical concerns that games within categories share suggests that the development of deep knowledge is significant in the ways that it can be applied beyond the limits of just the one sport. For example, the long ball used in soccer (football) is a tactic used when the offensive side has a height advantage in it's the height and aggression of its attacking players in competing to head the ball in the air. This is the same in Australian football when forwards compete to 'mark' a long high ball in front of goal. In both cases the time of the ball in the air gives both sides time to contest it. Some similarities are also evident with the use of a high punt in rugby. Understanding of common tactical concerns across games would suggest even deeper and more significant knowledge although these are usually less specific.

Deep understanding is ensured when students are encouraged to think during questioning and demonstrate their understanding in informed action within games. Problematic knowledge is well addressed as knowledge is socially constructed and students are forced to explore multiple and sometimes conflicting interpretations. In Game Sense students explore different strategies, discuss how effective they would be and would, test them in games, evaluate results and build on this to scaffold on developing knowledge. They analyze what had taken place in games and the ways in which they could improve in the game as an individual and as a team. Higher-order requirements are met in Game Sense as teachers provide opportunities for students to share and demonstrate it. This, in turn encourages students to create new meaning and understanding and to solve problems. Meta-language incorporates showing how language and symbols can be used. In Game Sense, the teacher needs to be explicit about how symbols work and to encourage the student to incorporate them into a game. This may be in the form of tactics or in the discussions when some aspect of the language is discussed. Substantive communication incorporates the question/ response that takes place during 'team talks' but goes beyond this where sustained and reciprocal interaction occurs. This can take place in any form and students are encouraged to scaffold the conversation.

Quality learning environment refers to pedagogy that creates environments where students work productively and are clearly focused on learning. As Dewey (1916/97) suggests, children don't learn through direct instruction but through engaging with the environment. He argues then, that the teacher's most important task is to structure and create a suitable learning environment. This is how Game Sense works-by the teacher creating a particular physical and social learning environment.

Explicit quality criteria forces students to analyze the quality of work they are producing, and in Game Sense this would include their participation, interaction within the game/group and the standard of their performance physically, mentally and socially. The criteria they need to meet would be reinforced throughout the game. Engagement is ensuring that students are on task and are deeply involved almost all of the time in the game. This would include physical participation and intellectual and affective engagement. They would also be seen to take the games seriously and trying their hardest. High expectations encourage students to take risks in the games and be recognized for doing so. The games need to be challenging yet provide opportunities for all students to achieve goals and taste success which would in turn motivate students to strive for greater success. Social support would involve supportive behaviours and comments from peers and teachers. This is met in game sense through praise, teamwork and encouragement of each other and the opportunity to build collaborative understanding and knowledge. This needs to involve providing support for reluctant students and ensuring that all contributions are valued and acknowledged. When the teacher designs the modified games to be used they typically encourage the inclusion of all players regardless of ability. Rules such limiting dribbling in basketball to three bounds prevents individual players dominating. With this rule in place the player in possession is forced to look for other players to pass to then reposition him/herself to receive again. In addition to such modifications the use of team talks where players discuss tactics involves the less physically able students. When the teacher builds a culture of trust and support among students this further contributes toward the development of a quality learning environment. Game Sense is ideally suited to the creation of quality learning environments. The capacity of Game Sense/TGfU to do this is very

evident in Australian research (Chen & Light, 2006; Light & Georgakis, 2005; Light, 2002). Students' self-regulation is well met in game sense as it allows students to demonstrate autonomy and initiative in regulating their own behaviours. There is little disruption and the teacher can get involved in the game discussions or encourage students to take ownership. Student direction encourages students in game sense to determine many of the significant aspects of the lesson or game independently or can look to the teacher for approval.

Significance: Games taught using a Game Sense approach give students the opportunity to develop social skills and problem solving abilities that they can use in life situations where they need to be aware of others and anticipate the actions and intentions of others. While students learn to be better game players there is also a wide range of social, affective and intellectual learning and development that arises from the process of learning in Game Sense. As Light and Fawns (2003) suggest, learning in Game Sense involves a way of being in the world. The world involves relations with people, things and places and "students are not just speakers, writers and thinkers but also doers" as is the case in the Game Sense lesson (Light & Fawns, 2003). The NSW Department of Education and Training (2003b) defines two elements of quality teaching that are highly relevant to Game Sense. Background Knowledge refers to lessons that regularly and explicitly build from students' existing, real life background knowledge in terms of prior school knowledge, as well as other aspects of their personal lives. The other element of Connectedness involves learning activities that rely on the application of school knowledge in real-life contexts or problems, and provide opportunities for students to share their work with audiences beyond the classroom and school. (p.15). Both of these elements involve connecting to real-life situations. Background Knowledge is backward looking and makes connections with previously existing experience or knowledge. Connectedness is forward looking and makes connections with newly acquired knowledge or experience.

Game Sense draws on students' background knowledge of other games they have played in the past and asks them to draw on this knowledge (and experience) to

solve problems and build upon it as games develop in complexity in the Game Sense lesson or unit. This includes rules, skills, tactics and previously observed sport/game interactions, as well as personal significance with the peer group. Cultural knowledge is recognized in Game Sense, as someone's culture is not a determining factor for the success of being involved in a game. Knowledge integration is ensuring we regularly make connections between topics and subjects and this is done in a number of ways in Game Sense. We question students about different strategies needed in games to improve their success. These include Science and Mathematics, such as speed, direction, velocity, measurement and we draw on other interaction and social skills that are developed in a number of key learning areas. There is also considerable significance for day-to-day life. As Light and Fawns (2003) suggest, games are like life. The tactics, methods of problem solving and relationships developed in Game Sense lessons apply to social life outside school. For example, when students gather in groups to develop tactical solutions for developing a defense in a 5 Vs 3 small-sided game of touch football they are leaning more than tactical understanding. They are also learning how to cooperate, how to draw on others' ideas to arrive at collective solutions and how to best contribute toward a group goal. This is very important and significant social learning. Not only is there pedagogy for identifying and solving tactical and technical problems but also for solving moral and interpersonal problems. When issues of right and wrong arise in games the same collective problem solving, facilitated by the teacher, can be used to discuss and deal with such problems.

The expectation to be inclusive is particularly well met in Game Sense as students from all groups are included in all aspects of the lesson and their inclusion is both significant and equivalent. The reduction in the demands of technique, modified rules that prevent domination through superior power, speed or skill (such as a 3 bounce dribble limit in basketball) and the emphasis on group collaboration all provide for inclusion and a supportive social environment. Connectedness is met when students recognize and explore connections between classroom knowledge and situations outside the classroom in ways that create personal meaning and highlight the significance of the knowledge for their lives. Game Sense achieves this as students apply skills and knowledge they have gained in the classroom, such

as the rules, teamwork, working in groups, social skills and an increased understanding of how the body moves and how this can be adapted to games. Narrative is used throughout the lesson to enhance the significance of the substance of the lesson. This is done during 'team talks' where ideas are discussed and questions asked and answered and strategies are incorporated into the game.

Conclusion

The NSW quality teaching model of pedagogy provides an important framework to reflect on the strengths and weaknesses of our current teaching and assessment practices in physical education. The new NSW syllabus provides the opportunity to focus our energies on the art of teaching and to begin programming high-quality learning experiences and assessment tasks to reflect the new requirements of the course. Game Sense meets all the three dimensions of quality teaching practices and should be incorporated into all PDHPE programs so that all students have the opportunity to experience it and receive many of the benefits it offers. The NSW QTF offers the opportunity for teachers to highlight the intellectual aspects of games and sport that have been ignored for so long by traditional directive teaching approaches. This, in turn, as Light and Fawns (2003) argue, offers a welcome means of bringing physical education into the mainstream school curriculum.

Because Game Sense draws on student experience and knowledge and the learning is in a larger social and cultural context it is useful and applicable beyond games and schools in everyday life. Game Sense pedagogy with its student-centred, inquiry-based approach provides not only relevant and significant knowledge per se, but also a way of learning how to learn and a way of negotiating the challenges of social life that confront young people moving into an adult world. Game Sense generates an increase in expectations as to what it means to be physically educated to include learning how to learn and how to live in society. PE teachers using the Game Sense approach will not only be able to meet the requirements of the NSW Quality Teaching Framework but will also be able to provide high quality learning

experiences for students and make a start toward making physical education a truly valuable educational experience in NSW schools.

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Developing a sense of the game: Skill, specificity and Game Sense in rugby coaching.

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Introduction

Great players of any sport typically have a 'sense of the game' (Light, 2003). They invariably seem to be in the right place at the right time and make the right decisions. Are they born with this 'sense of the game' or do they learn it? If so, where and how do they learn it? Coaches typically suggest that this is something a few lucky players are born with and which cannot be 'coached'. While physical capacities such as strength and speed are important for rugby players and can be developed through strength and conditioning programs, however, this sense of the game is certainly more difficult to engender. It can, however, be encouraged or enhanced. As some researchers in the field of sport and physical education pedagogy argue, while it cannot be directly coached but it can be developed through the provision of suitable environments in training that can embed, over time, the enacted knowledge of the game needed for high-level team sport (Light, 2003; Light & Fawns, 2003). Traditionally, young children in Australia have developed much of their skills and understandings of rugby and other sports through the range of informal games they play well before they are exposed to formal, structured coaching (Dwyer, 2004). The ideas of John Dewey (1916/97), the foremost educational theorist of the twentieth century, also suggest that it is the structuring of the learning environment through which the most effective and comprehensive learning takes place and not through any direct instruction. It is not through the drilling of isolated technique that complete players develop but through their engagement in games of varying types. It is through a life of intellectual, physical and emotional engagement in games that rugby players develop what Bourdieu (1977), describes as "le sense pratique"; a practical feel for the game.

In this paper I argue for the use of the Game Sense approach to develop complete players who are attuned, physically, mentally and emotionally, to the game and its conditions. I identify and discuss what I feel are the particular strengths of Game Sense for coaching in rugby. In particular I point out how Game Sense relates well to the two common concerns of *skill* and *specificity* of training used in contemporary approaches to the preparation of sports teams, in particular rugby teams. This paper discusses the role of Games Sense as a way for rugby coaches to build on the important learning that arises from early experiences of games to motivate players and develop intelligent play needed in complex games such as rugby.

The author and the paper

I write this paper from the perspective of an experienced rugby coach and former player, and a beginning researcher working in the field of sport pedagogy. Drawing on past practical experience in rugby and a developing knowledge of player centred constructivist approaches to coaching I strive in this paper to express my current desire to move towards constructivist approaches such as in Game Sense. I was first exposed to the ideas of Game Sense through a long conversation with Dr Richard Light on a car trip in Melbourne in 2003. While the ideas and concepts of Game Sense challenged my long established ideas about rugby coaching they stimulated considerable critical thinking on my part about my coaching. Now, a year into a PhD on elite level rugby and Game Sense I am excited by a growing understanding of what is possible with Game Sense yet challenged by some of the practical problems that face its application at elite levels of rugby. While I have adopted somewhat of a reflective approach in the paper it also draws on research that I conducted in 2005 with elite rugby and their uptake and use of Game Sense (Evans, 2005).

An outline of Game Sense is followed by a discussion of the terms skill and specificity of training, which are two common elements used in rugby to develop training programs for athletes that I apply to Game Sense. By making this connection between skill and specificity to Game Sense the case for the use of athlete centred approaches will be strengthened as it accentuates a feel for the game not always present in technical approaches. I then suggest what the benefits of Game Sense are for rugby coaching and what some of the challenges are in its implementation.

Game Sense

Game Sense is an approach to coaching developed in Australia during the nineteen nineties. It was developed through cooperation between Rod Thorpe from the UK, the Australian Sports Commission (ASC) and Australian coaches (Light, 2004a). Thorpe and Bunker had developed the Teaching Games for Understanding (TGfU) in the early nineteen eighties and Game Sense was developed as a variation. This innovative approach was an alternative to the traditional approach, which emphasised technique in highly structured lessons. The traditional technical approach emphasised technical mastery prior to playing the game. It was noted by Bunker and Thorpe (1982) that coaches and teachers felt that this resulted in poor transfer from practice to the game. The technique approach not only resulted in poor transition but an inability to recognise cues and produce the desired skill response. They also suggested that this approach might have been the reason why national teams in the United Kingdom performed poorly. They proposed a model that incorporated tactics and strategies in conjunction with skill development by utilising games where the players are engaged. Game Sense, like Play Practice (Lauder, 2001) is an Australian derivative of Teaching Games for Understanding (TGfU) and is described by den Duyn, (1997), Kirk, (2000) and Kirk & MacPhail, (2000) as the use of games as a learning tool that allows for tactical and strategic learning with skill development. Games are designed or modified to suit the development needs of athletes. The games are again modified or changed when athletes have a desired level of expertise. It was proposed that games could be categorised to reflect the tactical and strategic requirements of a number of sports.

In Game Sense all games are organised within 4 categories according to their common tactical dimensions. The four broad groups are target games, net and wall games, striking games and invasion games (den Duyn, 1997). Games within these categories do not necessarily share common technique but do share common tactical problems meaning that there is a transfer of tactical and strategic knowledge from one game to another within each category. For example soccer, hockey and rugby are classified as invasion games for the purpose of teaching tactical and strategic requirements. Game Sense employs the use of questions to elucidate understanding

from players and discourages coaches from being directive in their approach. The questioning engages players and encourages discussion of both tactics and skill and is not seen as separate aspects of games.

The use of Game Sense or Teaching Games for Understanding by coaches may, as Light (2004) proposes, produce more complete players than is possible by using a technique approach. Its application is not limited to novices, (Kirk & MacPhail, 2000). As Rick Charlesworth coach of the Australian National Women's hockey states, "the Game Sense approach is relevant to the ongoing development of elite players".

Skill and Specificity of Training in Game Sense

Skill

The use of the term skill to describe a performance in a training session is not always consistent with its true meaning. What is accepted as skill development in a training session may in fact be technique. The difference between skill and technique is not always evident in the selection of methods used by coaches. Skill involves more than just the replication of bodily movements. This paper refocuses attention on the area of skill using previous descriptions used in motor behaviour and skill acquisition approaches and aligns it with the application of Games Sense.

Skill and technique are often used interchangeably by coaches but they are distinctly different. Simply put, skill is equal to technique performed under pressure. Skilled execution is a result of learning that has occurred through the student or players' engagement in practice (Magill, 2004). Magill describes learning as:

...a change in the capacity of a person to perform a skill. It must be inferred from a relatively permanent improvement as a result of practice or experience p.384.

Although Magill approaches this from a skill acquisition point he recognises the role of practice and experience in the change process. Dewey, (1916/97 p.66) commented when focusing on skills in teaching, makes a similar point "a monotonously uniform

exercise may by practice give great skill in one special act, but this skill is limited to the act.” This provides an opportunity to examine the way in we teach and in doing so provides an opportunity to examine coaching as it is closely linked to teaching. Dewey’s comment helps explain the frustration of coaches who say, “we practised that for hours but they can’t do it in a game”. This “inertia” or “welded knowledge” that results from the traditional practices of teaching and coaching prevents the application of skills in real situations (Herrington & Oliver, 2000). The way in which players embody knowledge and understanding is closely linked to the type of practice and experience they are exposed to at training sessions.

Magill’s (2004) description of learning leads us to further examine the role of pedagogy in coaching. If we agree with the simple equation that skill is equal to technique and pressure, then it is important to understand how players and coaches are involved in the area of practice and experience and how they can be encouraged to incorporate both technique and pressure in training (Magill, 2004; Martens, 2004; Pyke, 2001; Schmidt, 1988, 1991).

Skill becomes, not just the replication of bodily movements, but also the ability to perform it in the context of game pressure that encompasses strategies, tactics and decision-making. The Game Sense pedagogy, as previously discussed, is an approach where skill and tactics are developed and enhanced contextually or embedded in situ within the game (Brooker & Abbott, 2001; Bunker & Thorpe, 1982, 1986). The use of Game Sense approaches to coaching overcomes problems of the technique approach as it embodies learning within an authentic or realistic setting. Players have a greater ability to perform a skill used in games because it is learnt and practised in a similar dynamic environment under some degree of pressure.

Specificity

Specificity is one of the terms often used by coaches in discussions about the physical preparation of rugby players and typically in relation to the physical conditioning of players. In this section, however, I appropriate the term to apply to the pedagogy of Game Sense. I argue here that drilling skills and working on patterns of play out of the context of the game lack specificity to their application in the real game. By placing most training within modified games or game-like contexts Game Sense

develops skills that are contextualised while, at the same time, develops tactical knowledge and decision-making. That is to say that the closer training is to the actual game the better rugby players will perform in the game. Game Sense is a tool that can facilitate this area of training for rugby players.

Specificity has been closely associated with strength and conditioning where the proposition is that training should reflect the movement patterns and energy systems that will be experienced in the event or game. Tudor Bompa, the Canadian physiologist made the following statement in respect to the preparation of players and athletes:

When designing training coaches should incorporate only those means of training which are identical to the nature of competition. Through model training the coach attempts to direct and organise his/her training lessons in such a way that the objectives, methods and content are similar to those of competition” (1994, p. 40).

The degree to which an athlete adapts or learns is related to the demands placed on the athlete in training (Baechle & Earle, 2000). These definitions open the door to question the extent to which coaching methods have been employed that reflects a true representation of the game. Teaching Games for Understanding (TGfU) was first proposed by Bunker and Thorpe (1982) as response to the poor transfer of skills from the practice environment to real games. Indeed, Bunker & Thorpe (1996) discussed the issue of poor transfer from training to the game using rugby as an example. The implication for coaches is the question of how the conditions experienced by players in a game can be replicated in training. Game pressure and game conditions become the focus in addressing specificity. By placing the development of skills within game-like situations Game Sense reproduces, to varying degrees, the conditions of the game while also developing understanding of the game, informed decision-making and a range of other aspects of the game such as communication.

The Benefits of Game Sense

In this section I outline what I feel are some major strengths of the Game Sense approach in terms of skill development and specificity of training to the game. These are: the transfer from practice to game, working off the ball and player motivation.

Transfer from practice to game

In Light's (2004) study on Australian Game Sense coaches they indicated that Game Sense offered a context that represented the actual game. That is, training needs to "replicate" the demands of the game. Technique by itself is not sufficient as it omits pressure as a crucial component. Technique alone is meaningless until it is performed as a skill within a game context and under the pressure of competition. Pressure in the form of a game is the element that forces a player to make decisions based on what is happening in a competition. The practising of technique by itself eliminates the need for a player to understand the tactical and strategic or to make decisions based on a changing environment. By taking a Game Sense approach the coach can design training that has a level of specificity that maximises the transfer effect by contextualising training within a game environment. This contextualisation provides pressure, which in turn, leads to tactical learning and skill development. This approach is also far more specific to the game. While there is sometimes a place for direct instruction of technique in Game Sense the emphasis is placed on developing skill and knowledge within contexts that replicate, to some degree, the conditions of the game. In this way it is more specific to the real game than direct instruction and drills performed out of the game.

Working off the ball

Players involved in invasion games are required to move and make decisions even though they are not in possession of the ball (den Duyn, 1997). This is an important part of rugby as only one person has the ball at any one time and the remainder of the players on both sides make decisions based on their perceptions of what will occur. The problem for traditional coaching lies in finding ways in which this play off the ball can be taught or learnt. Rugby is a dynamic game with constantly changing physical conditions making it difficult for direct instruction methods to develop the

thinking needed to work well off the ball. By training in modified games all players, and not just the player with the ball, develop understandings of movement off the ball. Game Sense allows players to be involved and to make decisions about the next contribution they will make in the game because they train in games. A technique driven approach does not allow for this to occur. The specificity generated by the use of games allows players to develop an understanding of what to do when they are not in possession. The skill of reading the game and determining where to be next is an advantage of the Game Sense approach. Thinking, anticipating, communicating and informed movement off the ball is enhanced in Game Sense due to its specificity to real game conditions.

Motivation

There is little doubt that positive affective states are beneficial for learning whether in school physical education or in elite level rugby training. As coaches in Light's (2004) study of Australian Game Sense coaches suggest, the use of games for training in Game Sense makes training more interesting and makes players more enthusiastic. Games-based training is not only better reproduces game conditions for transfer than a technical approach but also motivates players better. Through my own experience as a coach I have been concerned with player apathy during drills and have sought to make training more like a game with increased complexity, decision-making, communication and enthusiasm. A significant body of research conducted in Australia indicates that such approaches are more motivating and fun for learners from primary school children to pre-service teachers (for example see, Light & Georgakis, (2005) Chen & Light, (2006). Technique based training can also be boring and repetitive for rugby players whereas Game Sense has the capacity to engage and motivate them. This intrinsic style of motivation has the effect of galvanising players and creating a sense of ownership as well as being more like the real game. Modified games are motivating because they are close to the real game. As a coach in Light's (2004) study suggests, the closer training is to the game the more motivated the players are and the more repetition there is the more a particular skill can be developed but at the cost of lower player motivation. As he suggests, Game Sense can focus on a particular skill through the design of the game to develop it while maintaining motivation through using games. In Game Sense meaningful skill is developed while providing motivation due to its specificity to the game.

Challenges of Implementing Game Sense

Many coaches may be engaged in organisations where a particular culture pervades the way coaching is viewed by the administration, staff and supporters (Cassidy, Jones, & Potrac, 2004). Where an organisation views coaching as directive such as in a traditional setting, the coach is responsible for guiding players or students through well planned technical or skills sessions providing the necessary checks and balances. In a Game Sense setting the coach is an instructor and adopts more the role of one who guides and facilitates learning by setting effective learning environments. This situation can create personal doubts about the role of the coach (Light, 2004a, 2004b). Some coaches have indicated difficulty in the shift from a directive approach to a facilitation role.

There is, as described by Light (2004b), a perception by some coaches that there is an absence of learning in Game Sense approaches and that its just about playing games. More specifically, they misinterpreted Game Sense as neglecting the development of skill by concentrating exclusively on tactics and decision-making. The reticence of coaches to implement Game Sense may be a reflection of their beliefs about learning as a linear process where players' process information handed to them by the coach and then can act it out in a game. Learning is not this simple. It is a far more complex process. In order for coaches to adopt a Game Sense framework they need to appreciate that learning occurs through a number of mediums (Davis, Sumara, & Luce-Kapler, 2000). The change in understanding may also need an accompanying shift in the sharing of power and decision making in favour of the players (Light, 2004b).

In a well ordered technical session training appears organised and controlled. One of the challenges with the use Game Sense is that it can sometimes appear messy and disjointed (Light, 2004a, 2004b). It takes some time to see improvement in player's performance but arguably these improvements are long term due to the implicit nature of learning. Coaches make decisions on which approach they take based on external perceptions and the need to appear effective and efficient (Light, 2004b). There is also

external pressure on coaches especially when results in terms of winning are paramount. In these situations coaches tend to adhere to tried and tested approaches (Cassidy, Jones, & Potrac, 2004; Light, 2004a, 2004b; Lyle, 2002). This pressure may stifle the implementation of innovation in favour of an acceptable traditional approach.

Conclusion

The goal of coaching in rugby should be to produce players that are highly skilful, who have the capacity to make decisions and who have a level of expertise commensurate with their age and ability. Specificity is the key to high performance training and Game Sense offers an opportunity to design training for rugby in terms of movement patterns, intellectual engagement and the physiological development of energy systems specific to the game. In other words, coaches need the ability to design modified games that reproduce some of the conditions and pressure that would be experienced in the environment of a competitive rugby match. This contextualisation of training through the use of Game Sense ensures that a level of specificity and pressure exists which leads to skilful performance.

In order for coaches to implement Game Sense there needs to be a shift in their perception of their role and position in relation to the players. That is to say that coaches need to be facilitators of learning who set productive environments within which players can learn and develop a sense of the game instead of instructors directing and controlling training. Players cannot develop problem solving ability, embodied understanding and immediate skill responses to the dynamics of games without experience of learning within game-like situations. To date the bulk of rugby coaching and the development of elite players has focused primarily on the sciences of coaching and the science of conditioning with little attention paid to how athletes learn (Woodman, 1989). Recent criticism of the Wallabies' play as being robotic, predictable and lacking spontaneity suggests that approaches such as Game Sense have something to offer rugby from this level down to community-based junior rugby.

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Games For Understanding in Pre Service Teacher Education: A ‘Game for Outcome’ Approach for Enhanced Understanding of Games

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Teaching Games for Understanding (TGfU) is a games based pedagogical model aimed at generating greater understanding of all aspects of games, while increasing physical activity levels, motivation and enjoyment in physical education lessons. Bunker and Thorpe (1982) developed the original model as an alternative to the traditional approach predominantly used in coaching and teaching in physical education (Werner, Thorpe and Bunker 1996). Awareness of its value as a pedagogical model and as a viable alternative to traditional directive approaches has been limited within the teaching and wider coaching community in Australia over the ten years since Game Sense workshops were first developed and conducted. (Pearson, Webb, McKeen, 2005a). It also faces constant challenges relating to its implementation as an effective teaching model (Turner, 2005). However, the TGfU approach, if used appropriately, can give users the opportunity to engage productively in games education (Hopper and Bell, 2001; Pearson, Webb, McKeen, 2005b; Howarth, 2005) as well as allowing them to examine the variety of socio-cultural meanings of games, meeting many of the needs of effective and productive pedagogical practice (Chandler, 1996).

This paper will firstly summarise the theoretical underpinnings of the model, secondly examine impediments to its effective use for pre service teachers and those inexperienced with games and lastly expand on an interpretation of the approach where the practitioner applies a combination of primary rule and game progressions to an initial game for outcome to allow the development of an elementary understanding of the principles, techniques, strategies and rules required to play that game. The approach has the capacity to allow these inexperienced practitioners, irrespective of their games ability, to apply, analyse and evaluate all games concepts through both play and observation through a familiar and repeatable learning format

TGfU, Game Sense and Traditional Games Teaching

TGfU is known almost exclusively in NSW as 'Game Sense' and was developed through a series of workshops on the evolution of the TGfU model in the mid nineties (Webb, Thompson, 1998). It takes a more conceptual and constructivist approach to the traditional or technique based method used to teach games, which has been used extensively as a teaching method in New South Wales over the last forty years (DET, 1965, BOS, 1980, BOS 1991). The framework of the technical approach follows a set format; a warm up is followed by a series of drills practicing technique and game patterns, ranging from simple to more complex which is then followed by the actual 'adult version 'of the 'game' (Werner, Bunker, Thorpe, 1996, Hopper 2001). With the teacher providing directed feedback based aspects of game play and technique, it is expected that there will be a positive transfer or application of the technique practices to the game being played, allowing students to understand the game, (Werner, Bunker, Thorpe, 1996). Those critical of this approach suggest that the approach is behaviourist in nature, decontextualises techniques from the game itself, can develop technically adept players who have poor game skills or encourage the belief that if students do not have the appropriate technical skills they will not be able to play the game (Werner, Bunker, Thorpe, 1996, Lauder, 2001, Hopper and Bell, 2001). The teacher centred nature of the approach can also leave students with little game knowledge or dependent on the teacher to make decisions for them (Werner, Bunker, Thorpe, 1996).

TGfU and the Game Sense variation are game centred approaches which use a series of modified games, small sided, full sided or games for outcomes, to develop an appreciation and understanding of the game itself. Questions are asked of the participants and scenarios are created that require players to think of and apply, through movement, possible solutions to the questions about game situations. These solutions can continually be examined and re examined in different game contexts and strategies (pre game plans) and tactics (adaptations to strategy during the game) can be developed and implemented before and during game play at a team, sub team and individual level, all of which enhance the learning experience of those in the class (Gréhaighne, Richard and Griffin, 2005). The approach is more student-centred and allows participants to apply their own understanding of games to the learning tasks in an environment that is motivating and stimulating. Technique should never be ignored but examined and developed when the students see the relevance and the need for it

within the overall game context. Thus the approach is more holistic in intent and practice than the traditional method.

A key component of Game Sense and TGfU is the division of games into categories and in the case of invasion games listed in the Table 1. These allow the practitioner to group games together to develop common themes around which questions related to strategy, tactics and decision-making could be based. However, it is important to note that there are common principles for each of the games, listed in the Table 2, which should be considered in conjunction with the categories. These give the students and teacher a sound base from which to develop understanding of game categories and areas to begin their initial development of questions. Mitchell (2005) also suggests users can develop a framework in which to operate in relation to the categories, through which students can try to achieve the principles of play, irrespective of which in category game they are playing, allowing lessons to have a greater intellectual quality.

While there has been research into the effectiveness of the game based or tactical approach compared with the technical approach, evidence of the superiority of one approach over the other in regard to game performance has been inconclusive (Gréhaighe, Richard and Griffin, 2005). A series of studies comparing the two models (French Werner et al 1996a, French, Werner et al 1996b, Turner and Martinek 1999, Harrison, Blakemore et al 2004,) based mainly on skill development and cognitive ability, found no significant difference in the areas measured between the groups using either method. However, research conducted by Thomas (1997, cited in Pearson, Webb and McKeen 2005a), Light (2003) and Light and Georgakis (2005) consistently found that the TGfU approach engendered greater enjoyment and empowerment, increased engagement and increased physical activity levels in participants. Gréhaighe, Richard and Griffin (2005) also site an unpublished study comparing game performance between two groups using the tactical and the technical approach over a 12 week period in basketball, which found that game performance was maintained or improved in the tactical group while the technical group's declined slightly while also determining that after six months of no activity or instruction in the game, the tactical groups performance decline was less than the technical in the particular game.

TGfU and Game Sense Limitations

The ability to use the TGfU and Game Sense approach requires considerable pedagogical skill (Light & Georgakis, 2005) but we suggest that it also requires those using the approach to have a broad perspective and deep understanding of games, an ability to develop and ask appropriate questions at the appropriate learning moment, the ability to determine and select appropriate game forms to develop game understanding and the selection of modified games that truly parallel the actual game (Chandler, 1996, Light & Georgakis, 2005, Howarth, 2005, Turner, 2005). Linked with these factors is the development of observational and management skills to initiate and manage dialogue between participants and the teacher and between the participants themselves, which advocates for the TGfU approach see as a fundamental strength of the tactical approach and ‘a key pedagogical tool for the TGfU practitioner’ (Turner, 2005, p.82) which can be overwhelming for the pre service teacher (Howarth, 2005, p93). Howarth (2005) also suggests that the move from teacher centred to student centred is also very difficult, creating a ‘cognitive dissonance’ (p102) until the user feels more comfortable with the model. Forrest, Webb and Pearson (2006) suggest that if pre service teacher education programs and professional development programs about TGfU and Game Sense do not develop games programs that allow participants to develop skills in these areas, the approach may be misinterpreted as simply ‘game – practice-game’ (Turner, 2005) and runs the risk of being devalued as a pedagogical method. Piltz (2004) and Howarth (2005) also suggest that teachers new to games education often lack the observational skills needed to develop questions and may develop a questioning protocol for the lesson that results in an IRE discourse or a ‘debate of ideas’, so essential for the games centred approach, that is closed and shallow and may result in students leaving the TGfU or Game Sense lesson with no greater understanding of the game than when they entered (Forrest, Webb, Pearson, 2006; Gréhaigne & Godbout, cited in Gréhaigne, Richard & Griffin, 2005). Similar issues will also exist if the pre service or novice teacher simply follows the questions produced in some articles on TGfU without the appropriate observational skills or game understanding to understand where the questions were derived from and then has an expectation that the answers produced by the articles as the ‘correct’ ones. This then becomes a very teacher centred and behaviourist approach again, the very thing that those proposing the use of TGfU and Game Sense are trying to move away from.

A ‘Game for Outcome’ Approach for Games Education

The use of a game for outcome as the basis of a games unit has the capacity to apply a games centred philosophy to teaching and can address many of the limitations novice and pre service teachers may confront when trying to implement a games based approach such as TGfU and Games Sense. It alleviates the need for the practitioner to develop a variety of modified games or feel the need to invent a large amount of new games but, more importantly, gives both the practitioner and the students involved a common and repeatable base for both play and observation. It acts like a template or a learning framework which students can become familiar with, just like an exercise book in class or a canvas for an artist. This removes the need to for those playing to constantly learn new modified games, which may impact on their opportunities to firstly understand and respond to questions and secondly develop a deeper understanding of the games themselves. It also allows pre service teachers or novices to develop a consistent ‘observation template’ on which to develop their questions for discourse with their students, a feature often needing attention in inexperienced teachers (Piltz, 2004). The game can then be ‘progressed’ towards a specific sport in an empirically constructivist manner, by the manipulation of the primary rules of the sport, those rules that supply the actual game with its essential character (Gréhaigne, Richard & Griffin, 2005). A variety of challenges can be set for all players, regardless of ability in the game context, through methods such as manipulation of team numbers or the changing of conditions, allowing a constantly engaging, motivating and challenging environment for the students. Using this approach, students can gain an understanding of all of the different components that are part of the make up of a game and teachers can use the context to develop appropriate questions on these areas.

Game Observation and Analysis in Practice

The ‘Game for Outcome’ approach was used with second year students in the pre-service Physical Education and Health teacher education program at the University of

Wollongong in a practical studies unit on basketball/netball. These two sports classified as a small focus target invasion game (Gréhaigne, Richard & Griffin, 2005) and have a number of areas in which to draw comparisons and contrasts. In the initial game, the team in possession had to complete ten passes without interruption from the team without possession. The game was conducted within the third of a netball court and initial rules were established for safety through questioning, such as those in relation to physical contact and boundaries. Once the group established these, the game began. Students were also able to focus on the performance of both the team with possession (with and without the ball) and the team without possession, through observation from the sidelines, borrowing directly from Wendy Piltz's excellent observational cards, which she used for Level Three coaches (Piltz, 2004). The purpose of this was to allow them to begin developing sound game observation practices from which they could, as practitioners, develop their questioning skills and protocols as well as to enhance their understanding of netball and basketball. Special focus for players and observers was initially on whether there were common principles for the team in possession and the team without possession to achieve the game outcome. Students were able to repeat the game easily, allowing them to focus on trying to find solutions or create 'action plans' or strategies in a familiar environment (Gréhaigne, Richard & Griffin, 2005) to achieve the game outcome. Through the use of questioning and debate, it was established that to achieve its goal of ten passes, the team in possession must do the following:

1. Throw a 'safe pass'
2. Move to create or receive a pass
3. Move the ball to score

while the team without possession had to

1. Track a player and the ball
2. Pressure the ball and receivers
3. Use player to player or area to area defence

Through continued dialogue and observation, other game components were noted as particularly important in game play, especially the notion of change or transition, the ability to switch from team possession mode (which was now to be called 'attack') to team non-possession mode (which was now to be called 'defence') quickly and the advantage of using the whole court.

Students then were to develop, through play and observation, a variety of strategies (plans developed before the game play) to achieve the game's outcome, based on their more complete observations and the strategic and tactical responses of the opposition. Other areas such as communication, player roles within a team, decision-making and reading of movement cues were also examined in the game context by the students (both as players and observers), further adding to the complexity of observation of play, of the play itself and to the areas from which they could derive questions.

Progression began toward the actual sports through the introduction of the fundamental primary rule associated with basketball and netball games, movement when in possession of the ball. Indeed, the generic game revealed many assumptions by the players regarding movement (or lack of), especially when in possession, allowing the students to examine what meanings they were bringing to the game and when, where and how these meanings were constructed. Through such an examination and student debate, the primary rules for movement both netball and basketball were developed and implemented into the initial game. The students now had two more aspects to consider when developing strategic and tactical response as players and their questioning protocol as practitioners. In essence, two separate but similar games were established, one with dribbling, one without, but still based in the same initial framework, allowing students as players and observers to examine the impact these rules had on the application of the essential principles of attack and defence in the game for both games, their decision-making in relation to these strategies and on other areas previously mentioned such as technique, communication and cognition.

There were a variety of progressions and directions that could be taken from this initial variation of the game, such as changing the mode of scoring and manipulating the size and height of the target to score in, using a hoop placed on the ground. Attack and defence principles can then be re-examined in light of the impact a small target goal has on scoring and preventing scoring and on the strategies and tactics associated with this. This can then over-emphasised by the use of two goals for each team, one in each corner, still within the same initial structure, allowing again for the refinement of previous strategies and increased opportunity of observation opportunities, giving students a wide range of opportunities to further improve their game and

observational skills, broaden their view of the game and the variety on influences on game play and giving further depth to their questioning protocol. A further addition to the now more complex game, such as a third primary rule of netball, that of obstruction, can allow further contrasts to be drawn between netball and basketball such as examining how the ability to dribble, combined with no specific 'obstruction' rules created differing scenarios for both players and observers in relation to the impact on all aspects of playing the game. However, the structure and foundations of the initial game still remain intact, preserving the fundamental conditions and understandings.

The process can be continued until all primary rules are included examining the impact they have on all areas observed previously to determine the effect they have on the implementation of these aspects. Both players and observers are able to construct a large data bank of applied knowledge to have a number of areas to develop their question protocols on. This gave them a sound basis from which to develop a games based approach to the teaching of basketball and netball and incorporate the principles of TGfU and Game Sense in their lessons.

Feedback from students who participated in the unit and used the method in practical teaching was very positive but further research will be needed to determine the strengths and weaknesses of the approach in its effectiveness as a method for pre service teachers in developing game understanding and questioning skills, especially around the quality of the dialogue between teacher and game participants and between the participants themselves.

Conclusion

The use of Game Sense and TGfU has a variety of benefits for both the practitioner and the participants because of its pedagogical and motivational advantages over the traditional approach and its ability to incorporate technique development in a more meaningful and relevant context. However, limitations in a practitioner's observational skills, their ability to select appropriate games and facilitate in-depth dialogue can actually negate these benefits. The use of a game for outcome approach with progressions based on primary rules and the principles of play, as a variation of TGfU and Game Sense allows pre service teachers and novice teachers to observe

player responses to these progressions and challenges in a consistent and repeatable game environment removing the need for a multitude of small game variations while giving them a solid foundation from which to develop productive questioning and dialogue. Although its application was only demonstrated in invasion games in this paper we suggest that the approach has the potential to be used within, and across, game categories to develop improved pedagogical practice for pre service and novice teachers who wish to use a games centred approach model for teaching games.

Table 1: Categories of Games (adapted from Ellis 1983, Werner and Almond 1991, cited in Werner, Bunker, Thorpe, 1996)

Category/ Name	Key Components	Examples
Invasion	Team games invading the other team's territory with the aim of scoring more points than the other team in the time limit.	Touch, Basketball, Soccer
Net and Wall Games	Games played with a net or a wall with the aim of sending an object into an opponent's court so that it cannot be played or returned within the court boundaries.	Volleyball, Tennis, Squash
Striking/Fielding	Contest between a fielding and batting team with the aim of scoring more runs than the other in the innings or time allowed.	Cricket, Softball
Target	Place an object near or in a target in order to have the best possible score. Can be opposed or unopposed.	Golf, Lawn Bowls, Darts

Table 2: Game Category Principles (Adapted from Wall and Murray, 1994, cited in Butler, 1997)

Category	Attacking Principle/s	Defensive Principle/s
Invasion	Use a Safe pass Move to create or receive a pass Advance to score	Pressure the ball Track a player and the ball Use area to are or player to player defence
Striking Fielding	Maximise time at bat Maximise runs scored from and not from the bat	Minimise time in the field Minimise unnecessary scoring opportunities Build pressure
Net Court	Place the object within the boundaries where it cannot be returned	Return the object within bounds
Target	Place object as close as possible to the intended target or hit target	Protect or prevent your object from being moved from closest to the target (team)

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From Drills to Skills to Game Sense: The Meta-cognitive Revolution in Physical Education

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Introduction

Over the last ten years Game Sense has generated considerable research attention in Australia and is now beginning to generate interest from teachers and schools. These are exciting and promising developments in an approach that Light and Fawns (2003) argue has the potential to reconceptualise the practice of physical education and its place in the school curriculum. What has not yet been recognized in the literature, however, is the way in which the rise of Game Sense has highlighted the importance of pedagogy in physical education. Up until the arrival of Game Sense in Australia issues related to learning theory and meta-cognitive debates which characterized other learning areas did not manifest themselves in physical education debates. Metacognition, an awareness and understanding one's thinking and cognitive processes, that is thinking about thinking, did not particular interest physical education scholars (Carruthers & Chamberlain, 2000; Metcalfe, 1998). In the seventies there was some debate over different teaching styles arising from the work of Mosston (1966, 1986) but the issue of pedagogy in physical education did not receive any significant attention until the emergence of new pedagogies that drove approaches to physical education such as TGfU (Bunker & Thorpe, 1982), Game Sense (den Duyn, 1997) and Sport Education (Seidentop 1994), known in Australia as SEPEP (Sport Education and Physical Education Program). Up until these developments debate over the teaching of physical education had been more concerned with what to teach rather than how to teach and how students actually learn. This phenomenon is clearly seen by reading the *ACHPER Healthy Lifestyle Journal*, formerly *Journal of Australian Physical Education*, which has run uninterrupted since 1956.

The virtual explosion of research and writing on pedagogy in physical education over the past decade is a long overdue and a welcome development (Kirk & MacPhail, 2002; Light & Fawns, 2001, 2003; Light & Georgakis, 2005). Historically the subject was looked down upon by academics, who may have had an interest in sport, but deemed physical education not worthy of scholarship. This development is in itself is noteworthy enough, but what is equally significant is the fact that for the first time in the history of physical education, teacher preparation programs in NSW, such as at the Universities of Sydney, Wollongong and Newcastle have taken a proactive lead in the developments of teaching physical education rather than a reactive response to developments in schools. Within the PDHPE key learning area, the teaching of physical education is now being increasingly guided by the idea of pedagogy and concerns with how and what children and young people learn through movement. In fact the Year 7-10 PDHPE curriculum which was adopted in 2003 has been influenced by tertiary educators and Game Sense forms an important part of it (NSW PDHPE 7-10 Syllabus, 2003). Another striking example in the last few years has been the proliferation of practical Game Sense workshops, administered by tertiary educators, either through their home Universities or through organisations such as ACHPER to encourage practicing teachers, who may have not been exposed to it, become familiar with the approach. These workshops were well attended and the outcome was that these teachers would use the pedagogy back in their home schools.

From a historical perspective this paper argues that it has only been since the development of Game Sense in Australia that this interest in pedagogy most clearly emerged and prior to this very little research focused on pedagogy. The work of Australian researchers such as Light (Light, 2002a; Light & Fawns, 2001, 2003; Light & Butler 2005) and Brooker (eg Brooker, Kirk, Braiuka, & Bransgrove 2000; Griffin, Brooker & Patton, 2005), has begun to move physical education into the mainstream school curriculum and into educational debates about schooling, teaching and learning. Although, traditionally, physical education has been located 'outside' the academic curriculum as a non-academic subject the development of research in physical education on the application of contemporary learning theory to movement identifies the important learning that take place, and can take place, within physical education. This paper traces the increase in attention being paid to pedagogy in

physical education teacher education programs in NSW within the context of long term changes in the focus of such programs. These changes can be seen as a move from military drills to a focus on sport skills in the post WWII period up to the development of concern with pedagogy arising from Game Sense focusing on the University of Sydney as an example.

The example of the University of Sydney

The teaching of physical education in NSW primary and secondary schools has been greatly affected by developments at the University of Sydney. Up until the establishment of a physical education diploma at the Kuringai College of Advanced Education in 1979, the University of Sydney was the only teacher training institution and thus the only provider of physical education graduates in Sydney. It is therefore timely to look back into history and highlight the various themes which have characterised the teaching of physical education at the University of Sydney because ultimately most teachers in the school system had passed through this institution. It is also timely because this year marks the one hundredth anniversary of the teaching of physical education at the tertiary level in NSW.

Using the example of the University of Sydney this paper outlines the historical themes that have influenced Australian physical education teacher training education. There have been studies (Moutray, 1973; Fisher 1999) which have looked at the history of the various physical education programs in Australia, although they have been silent on pedagogy. These studies focused on the politics behind physical education development and the various pioneers. While they have documented some very important information, they have failed to give any treatment to what was actually being taught. This is surprising when one considers how other marginalized curriculum areas, such as Drama, have given some treatment to pedagogy (Anderson, 2003). This paper argues that three clear themes prevailed. Firstly from 1906 until the start of World War II, military gymnastic type drill was dominant; this was followed by a period where skill type instruction prevailed. In the last ten years or so has been characterized by the emergence of Game Sense pedagogy.

Drills

The teaching of physical education at the tertiary level dates back to the first year of the establishment of the Sydney Teachers College at the University of Sydney in 1906. While the teaching of physical education was not widespread in the public school system, it was mandated in all programs of the Teachers College. When it first opened the Teachers College only offered programs in lower primary (kindergarten) and primary. In fact one hour per week for thirteen was given to the subject. It must be noted though that physical education in this period was referred to as 'physical training' and in the various Teachers College handbooks exist outlines illustrating the content of the various subjects. Physical training consisted of physical drills and included "Squad drills. Squad drill with intervals, in single rank and in two ranks" (STC, 1908). The prescribed textbook was the English Board of Education (1909) text titled *Syllabus of Physical Training for Schools*. While there were a number of later editions, this text substantially stayed unchanged (1919, 1927, and 1933). For almost fifty years Teachers College students would be drilled using this text.

It has been noted by Kirk (1994, 1998), and others such as Crawford (1981) and Young (1939), that school physical education was militaristic and for the most part it was administered by the military. Military drill had been introduced into public schools, primarily as a defence measure. The Crimean and Franco-Prussian Wars made New South Wales aware of their complete dependence upon Britain for military defence. Attempts were made to establish a military force and the schools were included in the scheme. Instructors were appointed from the military to drill students. In 1871 it was noted:

The introduction of military drill into our schools during the year cannot fail to raise the character of the order. Already the schools visited by the Drill Instructors begin to show a more even and a more healthy discipline; and as arrangements are in progress to extend the course of drill to as many schools as possible, substantial benefits may be expected to result from this measure (Annual Report, His Majesty's Inspectors of Schools, 1871, p.4).

These comments of the inspectors proved ill-founded and the drill system was to impede the progress of physical education in schools for almost seventy years. These militaristic foundations also influenced physical culture classes at the Teachers College; and all classes were taken by men with a distinguished military background. Before World War I two men were responsible for these classes: Lieutenant-Colonel Paul and Major F.J. Anderson. In 1921 Major Albert Cooke-Russell became head of physical culture and dominated all aspects of the subject until his retirement in 1936. Major Cooke-Russell became an institution not only in the Teachers College but also in the wider community. He had served in Egypt, Pretoria and later the Sudan (receiving a DCM in 1898). In 1899 he served in the Boer War and later in World War I after which he picked up the job at Sydney Teachers College (Interview Albert Mason, September 2006). He also spent much of his time getting teachers he perceived as unfit into shape and extra classes were organised by Major Cooke-Russell. In 1922 Eva Redfern teacher of physical culture at Sydney Girls, became the first female lecturer and taught for a number of years primarily working with the females. Between 1906 and 1939, while there was no physical education specialist teacher-training course as such, military drill prevailed and served no real educational value and its position in the school curriculum was always questioned.

Students at the Teachers College were drilled on the tennis courts and strength and conditioning activities also took place in the gymnasium which was established in 1924 and was complete with sprung floor and separate dressing and bathrooms for men and women. There were specific instructions issued for dress during class and women were, “required to provide themselves with gymnasium colours, consisting of short tunic of black basement cloth, a cord girdle of College colours, black boomers, handkerchief cap of college colours (STC Handbook, 1924, p.56). By the 1920s students also sat for physical culture examinations and this included questions like, “In giving commands for exercise what details should be noted?” (STC Handbook, 1926, p.63). A reading of the undergraduate students magazines *Kookaburra* and *Drylight* gives a student perspective of the subject and in a few editions it is referred to as “physical torture” as apposed to “physical training.” The lecturers were much admired by students because they engaged in the social activities of the College, and

for example Eve Redfern coached the hockey side, while Cooke-Russell coached a number of men's sporting teams.

While there were some developments in physical education by individuals or individual school, notably 'learn to swim' programs and dance classes, the period up until the start of World War II was dominated by military drill instruction. This is perhaps best summed up by Ferguson (1963) reflecting on her school experiences:

I recall that, as a pupil at the Model Public School at Fort Street, I was taught physical drill. The whole school had drill each recess; the subject was taught on the asphalt surface of a tennis court which lay between the school and present roadway. Drill followed a set procedure. First the students bowed to the deputy who stood on a rostrum and, having taken a bow, proceeded to give directions for wand, club or dumb-bell drill, depending on the current vogue in equipment.

Elsewhere around the world prior to World War II, there had been substantial gains in educational theory and pedagogy, especially with the impact of Dewey (1900, 1902) and others, but physical education stagnated in an outdated model which had not changed since its implementation in the 1870s. Dewey (1900) was clearly against the prevailing theory of formal discipline and was critical of teaching which gave little opportunity for self-expression. Many of his educational examples were frequently taken from the playground. Apart from Eve Redfern, who graduated from the Teachers College in 1916, the other staff had no formal degrees or diplomas, and missed out on all these exciting developments in education. The rest of the Sydney Teachers College staff all had undergraduate degrees and diplomas, most from abroad; a few even Masters. The academic organ of the Teachers College was the *Forum of Education* and from its establishment in 1906 until World War II, there were no academic articles from the physical education staff or for that matter any articles dealing with physical education.

Skills

With the onset of World War II and the following decades, physical education in Australian schools changed. The pre-war physical culture based military instruction and military orientated command response was replaced with physical education with a central core of activities and the teaching of functional skills. This change all began in 1937 when the first meeting of the Physical Education Advisory Committee was held and the committee recommended that a Canadian Gordon Young be appointed director of physical education. With the onset of World War II the Board of Studies in Physical Education was constituted in 1939 by the University of Sydney under a Commonwealth Grant for the purpose of conducting a course in physical education at the University. However, as there were no suitable facilities at the University it was decided to conduct a course at Sydney Teacher's College.

What is interesting to note here is that many of the University of Sydney academics were against physical education course because they felt it would diminish the status of the University. However, the physical education cause had a great ally in Professor Harvey Sutton from the Faculty of Medicine who was a great advocate of physical education. In 1937 in the undergraduate student magazine *The Union Recorder* in an article titled Modern Physical Education he urged the University authorities to adopt a Department of Physical Education (4 November 1937, pp.1-2).

This was certainly not the case for American universities or most continental European universities, where physical education had an elevated standing. Australia though adopted the British model of university (Turney, Bygott & Chippendale, 1991). The subject had been allocated to Colleges in Britain and there seemed to be no good reason why it should be different in Australia. Academics were concerned that the subject matter essential for teaching, the professional training and the practical work involved did not constitute a rigorous course of study suitable to a University. It was understandable that many British trained academics questioned the right of physical education to University status. There was no previous tradition of physical education teaching in Australia and with few qualified teachers there was little to convince them otherwise.

In 1939 a two-year certificate course was inaugurated at the Sydney Teachers College which became the first physical education course offered at an Australian teachers college. From 1942 to 1945, the graduates from the Teachers College swelled the ranks of secondary school physical education teachers, and from 1946 onwards graduates holding the Diploma in Physical Education were appointed fully qualified specialist teachers (Moutray, 1973). These graduates were educated in games training, dancing, track and field, swimming and other recreational sports; although this type of physical education was based on the teaching of functional skills. This period emphasised the acquisition of skill and technique which dominated physical education pedagogy at the Teachers College. The three principal lecturers employed were Hal Le Maistre, Margaret Swain and Robyn Gray. Skill based technique was over-emphasised within school and university physical education. This is evident from the textbooks of the time and the various publications of staff members (Swain & LeMaistre, 1964).

Skills were taught in isolation, without requiring the players to think and apply the techniques to the situations required in the game. That is, the students, who had never played the particular sport or for that matter did not come across the sport, did not understand what they were doing and why. There are a few examples that can be cited here. Australia by its very nature is a nation made up of many different ethnic groups and there have been waves of immigration. At first from Great Britain and after post-World War II from southern and eastern Europe to the 1970s and 1980s where there were waves from Asia and the Middle East. The youth of these immigrants would therefore would be taught skill based physical education in sports such as cricket, Australian Rules Football and Rugby League and it is little wonder that they did not enjoy physical education classes. They had not been exposed to these sports and in their traditions there was none of these types of games and sports.

The University was pre-occupied with physical education undergraduates being able “to perform the skills” as apposed being able to teach. This is perhaps best typified by the philosophy of allowing gifted and talented athletes in the programs. In the 1950s and 1960s entry requirement to the diploma were in many ways dictated by the ability of students and many elite athletes would gain entry into the program by virtue of

their physical ability. The developments in physical education stagnated and it gained the reputation of being the Cinderella subject in the school curriculum. Therefore throughout its existence it attracted a number of well-known athletes, too numerous to mention in this article. The point being that a great athlete does not translate into being a great physical educator. During this period the focus was on content with little or no attention paid to pedagogy.

Unit of study outlines from this period clearly illustrate this emphasis on skill development. Students would be tested on the various skills in most courses and the various units of study were broken up into various skills. For example, if they studied cricket, they would say spend week 1 on bowling, week 2 on batting etc etc. The physical education diploma at Sydney Teachers College was also influenced heavily by the study of science subjects; such as physiology of exercise, anatomy and physiology, test and measurement and kinesiology. There was an emphasis on decontextualised skills, which was a contrast with situated learning, based upon socio-cultural learning theory perspectives.

Game Sense

As readers of this publication are likely to be familiar with Game Sense I will offer only a brief description of it here. It is an approach that uses the game as the focus of the physical education lesson. It uses modified games to locate learning in authentic contexts with a focus on learning to play the game instead of learning discrete and de-contextualised skills or techniques. By focusing on the game, players are encouraged to: firstly become more tactically aware and able to make better decisions during the games; secondly start thinking strategically about the game; thirdly develop skills within a realistic and enjoyable context, rather than practicing in isolation and finally develop a greater understanding of the game being played.

It adopts a pedagogy that is student-centred and inquiry-based rather than the traditional directive instruction approach. As researchers on the field have argued, it is underpinned by social constructivist learning theory and the ideas of Lave and Wenger's (1991) situated learning (eg Kirk & Macdonald, 1998; Light & Fawns,

2003; Butler, 2006). Game Sense highlights the inherent intellectual aspects of play and students are not only challenged to think about strategies and tactics in games but are also encouraged to think about thinking and to develop general problem solving skills. Given that games are still a major part of physical education curricula in NSW we can see this as a revolution in physical education where it has moved from disciplining the body through military drill, to the 'acquisition' of technique to an holistic approach that includes attention to meta-cognition.

Bunker and Thorpe's work in developing Teaching Games for Understanding (TGfU) was first published in 1982 but had its roots in some of the work being done by coaches in the UK from the 1960s such as that of Alan Wade. Grehaigne, Wallian & Godbout (2005) suggest that the ideas manifested in TGfU can be traced back to the ideas of scholars and researchers in France and Germany. The ideas embedded in the pedagogy of TGfU and the general philosophy of teaching and learning underpinning it can be found in the work of Piaget on psychological constructivism and the work of American educational philosopher, John Dewey with his emphasis on experience. That is to say that much of what Bunker and Thorpe developed in TGfU is not necessarily new but that it has a complex genealogy – it has a history.

During the mid 1990s Rod Thorpe worked with coaches and the Australian Sports Commission to develop a variation of TGfU that was more focused on coaching and less structured than TGfU (Light, 2004). This work was first published in 1997 by the ASC as resources for coaches and is still being produced and sold. It does not use the model proposed by Bunker and Thorpe and is really a loose reference to coaching that employs modified games for training and which uses coach questioning instead of direct instruction (Light, 2004). Game Sense has made a significant impact upon coaching across a range of levels and sports in Australia and has increasingly attracted the attention of teachers and teacher educators. Paul Webb from the University of Wollongong was involved in the initial development of Game Sense and, as a teacher educator, has been prominent in encouraging its uptake through practical workshops with his colleagues.

Australian researchers in the physical education field have also helped with its uptake by teachers and teacher education programs. Before he moved to the UK in 1998 David Kirk wrote on Game Sense and TGfU with Ross Brooker and Richard Light in particular prominent in research on TGfU and Game Sense in Australia and internationally. Both were involved in the 2003 international conference at the University of Melbourne that had a very significant impact in Australia and New Zealand. Light's work in particular has emphasized the pedagogy of Game Sense in physical education teaching and coaching and has helped in its development within schools in Victoria and New South Wales in particular. On the other side of the Tasman Lynn Kidman has been prominent in publishing on and promoting a Game Sense approach to coaching and New Zealand colleagues have also begun to write on and develop the Game Sense approach to physical education teaching (for example see, Pope, 2005). Within less than a decade Game Sense has influenced coaching and teaching in schools and has come to feature in PDHPE (Personal Development Physical Education and Health) teacher education programs such as at the University of Sydney, the University of Wollongong and the University of Newcastle in NSW.

At the University of Sydney Game Sense was being taught from 2000 but it was not until the arrival of Richard Light from the University of Melbourne in 2004 that it became the dominant physical education and sport pedagogy adopted in the Human Movement and Health Education program. Game Sense has since become a central part of the program. A Game Sense like approach was being taught at around the time of the Sydney Olympics in 2000 but the first unit of study actually titled Game Sense was taught in 2003.

Conclusion

Within the scope of the periods covered by this paper the development and impact of Game Sense is very recent. It does, however, represent a very significant change in approaches to physical education teaching and in the practice and role of physical education teacher education programs in NSW universities that can be seen as part of historical development. It was not until the development of research in Game Sense and other similar approaches such as TGfU and Play Practice (Lauder, 2001) that issue of pedagogy became prominent in physical education discourse in Australia.

The consequent uptake of these approaches in teacher education programs has made the issue of *how* to teach as important, if not more important, than *what* to teach. This development has, in turn, seen physical education teacher education programs in universities take a lead in the development of new and better ways to teach in schools. While physical education has long lagged behind other subject areas in the development of practice informed by learning theory it now has the opportunity to lead the way in showing how comprehensive learning can be achieved through the engagement of the body and its movements in learning (Light, 2002b; Light & Fawns, 2003).

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Humanistic Coaching - Teaching Games for Understanding

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One of the major reasons we participate in sport is for the human movement experience and the excitement and indescribable feeling that comes with it. Human movement is never static or robotic, but is expressive, creative, adaptable and versatile and the best athletes are those who can respond to others' movements in a novel situation. Human movement is dynamic action always changing and modifying and the thrill of a great move can not be underestimated. Much of this paper will espouse the work of a humble, authentic man, Ben Lombardo, who in 1987 wrote a book entitled "The Humanistic Coach". Ben's work has been the basis to my thinking about coach development in the last dozen years or so. My interest in Teaching Games for Understanding (TGfU), or Game Sense as known to some, is based on how the model emphasises this human experience in sport. Thorpe and Bunker (1989) developed TGfU as a means to enable students to learn in a more motivating environment than was occurring in Physical Education. I will focus within the contextual realms of sport and coaching specifically, to highlight how TGfU has enabled athletes to revert back to 'playing' (the most humanistic form of movement) and how it meets holistic needs of an individual (humanism).

Athlete-centred and humanistic coaching are terms that will be used interchangeably. They both refer to the total development of the individual (Lombardo, 2001). They focus on enhancing athlete self-awareness, and holistic growth and development. Humanism, based on Maslow's (1962) self actualisation theory and Rogers' (1969) work, focuses on the whole person (the athletes) and encourages athletes to reflect on the subjective, thrilling experience of sport (Lombardo, 2001). Sport is a vehicle to enhance personal development and self-understanding. It is an authentic experience that develops human character that so many adults stress, but not many practise in the sporting context.

Being authentic is the current topical term used to define real human practices and fits in well with the idea of TGfU (which is authentic practice of sport). Ben Lombardo (2001) espouses humanistic coaching as a tool to create within the athletes the motivation to learn and achieve. Traditional models of coaching cater to the socialising agencies of young people forty years ago. Today, coaching approaches need to be modified to suit the socialisation trends of the 21st century. TGfU caters to these trends by enabling athlete autonomy and freedom. This autonomy and freedom come through athlete ownership, awareness and responsibility for his/her performance. The movement experiences arising from the application of TGfU are humanizing in that they positively influence self-esteem, self-direction, independence and opportunities that can “express intense moments of joy and supreme well-being” (Workman, 2001).

Workman (2001) describes the emphasis of humanistic ideology as residing ‘in recognizing the dignity, worth, integrity, responsibility and wholeness in oneself and in others’ (p. 85). She further suggests that competing in sport proves a personal test, and develops creativity, improvisation and imagination. Workman says that “humanism in sport accentuates joy in movement, personal meaning in participation, and positive interactions with all other participants, including the so-called ‘opponents’ (p. 85). TGfU, as a model is embedded within this philosophy or should be. However, what really happens in the sporting environment may be a different story. Many sport environments don’t provide this authentic human experience. Adult-structured sports often provides a good example of practices that minimise the human experience (Bigelow, Moroney & Hall, 2001) for children.

Ben Lombardo (2001) indicates his beliefs of the problematic nature of adult structured sports in coaching humanistically:

- Sport has a Voluntary Nature – children take it up because they want to, they also quit because they want to. Adult structured sport perpetuates the attrition factor in children’s sports (Wiggins, 2002).
- The particular sport has a strong intrinsic appeal for the participant: initially, enjoyment is the primary motivation and the sport must maximize this enjoyment. Adult structured sports can minimise enjoyment when a ‘winning at all costs’ is the focus.

- All participants develop in many ways and at many levels as a result of the sport experience, regardless of the specific manner in which the programme is administered – they learn about themselves as a result of the experience, but they don't all learn the same thing. Learning is unique to the individual. Often we see sporting environments where athletes are taught to perform “my way or the highway” or taught tasks all in the same way.
- Sport has an educational intent – Often this is spelled out in the strategic plans of sport organisations, whether it is physical, social psychological or a combination of all. However, transferring policy to practice in adult-structured sport often does not occur (Penney, 2006).
- Children possess a great variety of reasons for entering the sport experience, all of which are meaningful and relevant to them and include, but are not limited to, increased motor proficiency and winning – mostly, the reasons are not congruent with the adult leader. Research suggests that children's main reasons for participating in sport are to have fun, be with friends and experience its thrills and excitement (Roberts, Treasure and Hall, 1994).

To enable these athletes to participate for their reasons the role of the coach becomes one of ‘releasing, facilitating and assisting, not one of manipulating and coercing’ (Lombardo, p. 86)

The Development of TGfU

TGfU, widely used at all levels of athlete communities is an example of humanistic, athlete-centred coaching. TGfU enhances performance through learning tactics and skills (including technique) through a game. It is a model which promotes and enables athletes to obtain life-long learning in physical, cognitive, social and emotional domains (which are humanistic) using games as the learning experience. For my book *Developing Decision Makers: an empowerment approach to coaching*, I interviewed one of the main developers of TGfU, Rod Thorpe, about how the development of TGfU occurred. I first asked him why he originally had the idea of TGfU, and breaking away from a traditional skill learning model. He said:

...there were many interlinked reasons that came out of our thoughts on skill learning—most pertinently, the then forgotten aspects of perception and decision making, motivation, social psychology, teaching methodologies, etc. I would also add that we were taught the value of small side games as students in the early '60s, even though we were taught to focus on the 'skill' part of the lesson.

When we watched youngsters playing on their own, either in a recreation setting or, say, before a practice session or lesson, we often noted quite sophisticated movements and interactions. A few examples might help:

- Youngsters put some coats down to make soccer goals for a game. There are seven of them but they decide to play three, including the oldest player, against four, including the two youngest.
- There is a pick-up game (play rather than organised game) of three-v-three cricket in a rural area, mixed ages. The youngsters decide to make a rule that 'The big kids can't bowl fast'.
- At the start of a basketball lesson, the coach has not arrived. The youngsters are playing two-v-two and using disguise, reverse dunks (or nearly). The coach walks [in] and coaches 'fundamentals', divorced from any game or individual need. The kids were challenging themselves and each other; the coach failed to do so.

The common factor in our observations was that when children were getting on with it, uncluttered by teachers and coaches, they were often more productive in terms of learning in context, enhancing motivation through challenges, social interactions, etc. They were empowered by circumstance. ... we noticed that kids left alone often had it and were the better for it. If we accept that well-intentioned coaching is not always better than no coaching, we might examine our practice more carefully” (p. 23).

What started as a Bunker and Thorpe's (1982) logical practical opportunity to enhance student learning and after many years of promoting the model, TGfU has been rigorously researched as to its value for students or athletes. The research

highlights the constructivist approach (Griffin & Butler, 2005) as a learning theory and skill acquisition specialists (Turner, 2005) are keen to research cognitive learning effects of the model. However, I want to revisit a bit of the early intention of the TGfU model as highlighted by Kretchmar (2005) of teaching for meaningful experiences and delight in participation. The rationales for learning within a context of the sport game falls into constructivist learning, but humanistic coaching enables the athletes to construct sport experiences authentically and motivates them to gain the intrinsic desire to improve their movement capabilities, thus enabling the constructivist learning process to occur.

Humanistic Coaching (Athlete-centred Coaching)

The purpose of coaching is to enable athletes to learn in a way that works best for them (Kidman, 2005). First, this is about their individual physical and mental makeup, and where they are with technical and tactical development. Second, it is about being able to perform to their best when in competition or when challenged (SPARC, 2006).

In a competitive situation the athlete will preferably just compete, be ‘in the moment’ and react based on his/her self-awareness of the situation or movement. Part of the self-belief will be that he/she has an appropriate goal and knows that he/she can get back on track when something goes astray. The learning that happens at training should be about developing that skill – the skill of self correcting or self coaching and being the best that you can be on that day (SPARC, 2006). TGfU caters to this well, provides competition and authentic situational opportunities for athletes to experience and learn.

In his book Ben Lombardo (2001) highlights our oversight (often unintentional) in ensuring that, as coaches, our mission is to create better human beings. He suggests that the experience in sport should be about being authentic, true to oneself, human in every way. TGfU is a model that enables humanistic experiences to happen. Play is one of these intrinsic experiences, as it is spontaneous and expresses uniqueness. Current sport programmes can suppress this human need of play and spontaneity. The environments that demand conformity don’t promote the ‘play’ within sport.

However, TGfU promotes play, perpetuates spontaneity, creativity and innovation and enables athletes to learn from constructing experiences.

TGfU is humanistic because it enhances athletes' motivation and thus their intensity of performance through their own problem solving. Athletes increase their effort because of the meaningful challenges offered. These challenges also create opportunities for athletes to respond to pressure inherent in sport competitions. Achievement is also enhanced as TGfU enables athletes to do something well, to problem solve, and to take ownership for their own learning. Of course, enjoyment is also enhanced because games are fun. Through games, athletes share success and failure; they learn how to trust each other and to about each other's ways of competing and making decisions, which enhances team culture.

Sports within organisations contribute to the growth and development of an individual and participation should be enjoyable as well as promote learning. As Ben Lombardo (2001) suggests, sport has been dominated by a system where the needs and interests of the coach overtake those of the athletes. He calls the adult structured and ruled system a Professional Model of Coaching whereby coaches have the power to make all the important decisions and are mostly devoted to product outcomes, rather than the process of developing people. The coach-centred approach that I refer to in *Athlete-Centred Coaching* (2005) is a disempowering form of leadership which takes ownership and responsibility of sporting experiences away from the athletes. When coaching tactics and skills at training sessions, coach-centred coaches traditionally tend to give athletes specific directions on what to 'fix' or the exact moves to perform. In some cases, coaches believe that unless they are seen to be telling athletes what to do and how to do it, they are not doing their job properly.

As a model, TGfU is an approach which, if used with the Professional Model of Coaching in mind, can perpetuate the coach centred existence where coaches maintain power and control and not worry so much about the process of developing fine young human beings. TGfU has been seen by some as an outstanding tool to learn through games, but the opportunities for athletes to learn through the game is sometimes taken away when coaches dominate athlete learning opportunities. The purpose of TGfU is to enable athlete learning and decision making. Athletes learn through playing the

game and solving problems within the game. If the coach sets up the game or the problem, lets the athletes play, then calls them back and tells them how to fix skill or solve tactical problems, the learning is taken away from the athlete. To leave the athletes to learn and facilitate this learning is a different task to understand and coaches who can withhold their knowledge enable athlete responsibility and learning (Whitmore, 2002). This withholding of knowledge, which is a sign of emotional intelligence and empathy, enables athletes to solve the problems. The athletes are the ones who have to understand the game, they are playing and have to make split second decisions while in competition. Therefore, the athlete needs to solve the problem, not the coach. In TGfU, the coach facilitates that problem solving, but does not solve it for them.

At the 2003 biennial TGfU conference in Melbourne, Rod Thorpe expressed his concern about coaches actually practising athlete-centred learning:

The real concern for me was that sometimes in a search for a more ‘structured lesson’ or ‘physical education programme’, many of the adaptations were at the expense of the individual and certainly at the expense of individual empowerment.

Teaching Games for Understanding/Game Sense is being embraced, adapted and developed. This is heartening to me and the many other people who contributed to the early models. But if the developments do not retain those elements that surround the concept of empowering the individual athlete, they miss the point (Kidman, 2005, p. 243)

With TGfU, athletes can learn about the game and practise skills and techniques within the context of a game rather than separate from it. Learning in context provides a sound understanding of the game and opportunities to apply skill and technique under pressure. When athletes are allowed to play or practice, in a situation uncluttered by coaches telling them what to do and where to go, they are more productive in terms of learning in context, enhancing motivation through challenges, social interactions and decision making (Kidman & Hanrahan, 2004) and working under pressure. The key here is that the coaches don’t tell them what to do, the athletes work it out for themselves.

Creating Independent Athletes

A key to coaching is the ability to read the situation and decide when to stand back and let athletes play and when to jump in and try and give them some thinking opportunities. Often, we as coaches lose sight as to where the athletes want to head. Athletes have a need to be understood, not evaluated or judged. They need to be simply understood from their point of view; that is empathy. One of the major tools for athletes to learn is to become self-aware. To become self-aware, there is an element of self-evaluation that must occur. It is not an easy process and coaches must nurture and encourage athletes to gain this self-awareness by allowing them to make mistakes and enable independence and confidence. If athletes are dependent on the coach for total instruction, there can be an increase in stress to do exactly what is asked. If they are dependent on the coach, they won't easily be able to make decisions on the field or pitch. If coaches can increase awareness, thought processes become the athletes rather than robotically copying what the coach says.

Contemporary social and cultural life demonstrate socializing agents (e.g. two parents working, lots of computer games, developing dependent people) that influence athletes of today. Unfortunately, in many instances, coach systems, as Ben Lombardo points out, have failed to recognise and adjust to these changes, continuing to coach children the way we were coached 40 years ago (which was appropriate for the culture of that time). It is not appropriate to have children who spend all day making their own decisions arrive at the pitch or sport environment to have all the meaningful decision making is taken away from them and made by adult leaders.

Humanistic coaching promotes one of independence, one of relying on each other within a sport context for the best performance. TGfU creates independent athletes who have to perform their way rather than depend on the instruction from the coach.

It is important to review the benefits and determine why each athlete participates or competes. Unfortunately, what happens in sport is that the adults decide the direction and the sport environment becomes the place for adults to express their power and intentions of what sport is to them making athletes dependent on them. The overriding goals of coaches tend to be motor efficiency and winning (Lombardo, 1987) even

though research shows that the main reason for sport participation is socialization, fun and the pursuit (and I stress the word pursuit as a process not an outcome) of excellence.

What's Happening in New Zealand?

New Zealand coach development reflects recognition of the need for coaches to develop an athlete-centred coaching philosophy (humanistic) through practice. As part of that development, Sport and Recreation New Zealand (SPARC) talked to coaches around New Zealand on how to develop quality coaches. These coaches first said that coach development should be community based. These communities (from Middle Childhood to High Performance athletes) determine what sort of learning needs to occur to develop quality coaches who are 'world-class' within their own coaching communities.

TGfU supports this athlete-centred approach. Physically it works on motor proficiency, cognitively, it focuses on decision making in tactical situations and there is authentic practice within a sporting environment. Emotionally, TGfU creates similar situations to those that arise within the winning and pressure contexts of competitive matches and enable athletes to have authentic competitive experiences. Socially, games for understanding is learned mostly in small groups, whereby there is a learning experience of dealing with other people and of providing opportunities for the development of leadership. It is one of a few learning models which enable athletes to learn holistically, meeting the human needs that focus on the athlete.

Mary O'Sullivan at the ICHPER Conference in New Zealand (2006) suggested that for physical education teacher education, we need to design curriculum to match the needs of student-centred learning. Students (and for this paper, athletes) need to learn through experience and have opportunities to solve problems and take responsibility for their learning. She suggested that we need to have learning communities, where commonalities and purposes of learning are mutual. Many policies overtly support the direction that New Zealand coach development has taken, but the implementation of these policies seldom thrives, as such a task is glossed over and put into the 'too hard' basket. New Zealand Coach Development has taken on the

challenge by attempting to enable coaches to have opportunities to learn ‘on the job’, focus on athlete-centred coaching and learn within likeminded coaching communities. TGfU has been included in every community as an important model to enable the holistic development of athletes. In her research Catherine Ennis at the AIESEP conference in Finland (2006) also reinforced TGfU as a best practice model which meets the needs of student-centred learning through affective and cognitive learning.

Summary

So, where is this humanistic coaching? I know there are great examples of best practice in the sporting context based on humanism as I personally have seen its practices, but many of the practices still occur in the traditional, prescriptive way. Humanistic coaching is still dismissed as the “fluffy, tree hugging, dolphin stroking” way and as a coaching fraternity, we don’t encourage athlete awareness, ownership and responsibility. Many sports and coaching organisations believe and state in their strategic plans that athlete centred learning should be used to develop individuals, but often the nature of policy creation does not always lead to quality implementation. The organisational leaders seldom actually practise what they preach in these documents, and rather display behaviours of conformity (Lombardo, 1987). Sport and coaching organisations claim difficulty due to the commercialisation trend which seems to have interrupted the need to focus on human learning and still retain the bottom line, money based on results. Interestingly, the research now is saying that an athlete centred approach actually will enable better performance and enhance winning (Kidman, 2005), where athletes are encouraged to become self-aware and take ownership and responsibility for their learning needed to perform well.

As long as sport is conducted to take individuality and uniqueness away, the humanistic experience won’t proceed. Breaking away from the structured model is difficult because of parent and administrators expectations of coaches and athletes and the influence of the media. Until recently, little attention has been given to implementing or practising humanistic coaching. Coaches are making the move with TGfU to a more motivational learning environment, using sport as an authentic learning experience, just like the research rhetoric indicates should occur (Jones,

2006). TGfU is a humanistic approach and enhances athlete motivation which thus encourages athletes to want to learn and understand. This motivation and enjoyment from the sport experience will keep athletes in sport and physical activity longer.

TfU is a great model to cater for the humanistic needs of athletes. It has the benefit of providing physical learning opportunities, embedded in cognitive learning outcomes and decision making. TGfU also focuses on affective development whereby social and emotional needs are learned. Teaching Games for Understanding promotes the humanistic side of individuals whereby each person's experience is unique and can be designed around the desires and thrills of the individual. In essence, Ben Lombardo was forward thinking in his book to try to get sport back to its original intention. It is time to use sport as a tool to focus on human qualities. As Ben Lombardo (1987) rightly suggested, "Sport has the potential to truly liberate the essence of being fully human" (p. 85)

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Accessing the Inner World of Children: The Use of Student Drawings in Research on Children's Experiences of Game Sense

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Introduction

There has been a marked growth in the literature on Teaching Games for Understanding (TGfU) and its variations such as Game Sense over the past decade that has been accompanied by an increasing growth in both areas of inquiry and the methods used. From a narrow focus on experimental research that sought to compare and contrast technical and tactical approaches in the early 1990s the range of foci and the methods used have grown significantly. Within the growth in qualitative studies in this area there has been increasing interest in the affective dimensions of TGfU (for example see, Holt, Streat & Begoechea, 2002; Light, 2003; Pope, 2005). This has yet, however, to translate into significant growth in empirical studies. Some studies have sought to gain understanding of the affective dimensions of Teacher development in TGfU across a wide range of cultural settings (Light & Butler, 2005; Light & Tan, 2004) but there has been a surprising dearth of studies on the affective dimensions of children's and young people's experiences of TGfU /Game Sense. At the same time there has been very little specific attention paid to research methodology in the TGfU literature. In setting out to redress these oversights this paper reports on a study on the affective dimensions of children's first experiences of Game Sense focusing on the use of student drawings as a primary data generation method.

Conducted in a year six class in a Sydney primary school the study sought to answer the question: 'Can the Game Sense approach to teaching games have a positive impact upon the inclinations of low skilled, less motivated primary school students toward sport? Adopting an interpretive and humanistic approach it sought to gain insight into human

experience and make sense of the impact that Game Sense pedagogy had on a group of year 6 children. It employed the use of student drawings to gain insight into the inner world of students and the meaning that they make of sport when taught using a Game Sense approach.

Game Sense and Affect

Game Sense is a variation of Bunker and Thorpe's (1982) Teaching Games for Understanding (TGfU) model for games teaching developed in Australia through collaboration between the Australian Sports Commission, Rod Thorpe and local coaches (Light, 2004). It places all learning within modified games to emphasise understanding, tactical awareness, decision-making and the development of flexible, contextualised skill. As Light and Fawns (2003) suggest, this promotes social interaction from which interpersonal relationships and social learning develop. Within this context the affective dimensions of participation and experience emerge as an important consideration.

Game Sense usually involves beginning with simple games and building up complexity as understanding and skill develops. For example, a teacher/coach working on passing and receiving in basketball may begin with a simple game of 6 V 6 played in a half court in which there is no dribbling with the aim being to make 6 successive passes to score a point. In this activity players off the ball move to find space and free themselves of the defence while the ball carrier has to decide to whom he/she should pass and then where to move to. The understanding and skill developed in this game could be further developed in a more complex game such as 'key ball'. In this game players attack in one direction and aim to make a minimum number of passes (say, four) before passing to a player in the key who gets a free shot at the basket. The most important part of the teacher's work in Game Sense is the design of appropriate learning environments in which games are presented as problems to be solved with teacher questioning guiding learning and students encouraged to work collaboratively (Howarth, 2005).

Game Sense provides an inclusive approach that can engage all learners regardless of ability and experience. Games are modified to reduce the demands on skill and technique

and to prevent the stronger and more capable from dominating while extending their tactical engagement in the games. For example, if the teacher limits dribbling in basketball to three bounces the skilled player must think about passing to other players and repositioning him/herself to be available for a reception. This challenges the better player and helps engage the other players in the game. By learning in games players/students are less visible than they would be under the scrutiny of the teacher and their peers when asked to perform technique to a satisfactory level. The emphasis on collaborative problem solving also encourages learner involvement and meaningful membership in the team. Research on pre-service primary school teachers' responses to Game Sense/TGfU suggests that it is inclusive, provides a supportive social environment and is appealing to young people who have been previously disliked sport due to the ways in which traditional approaches marginalised them (Light, 2002; Light & Georgakis, 2005).

Visual Data Generation

With the focus on the affective dimensions of games this study required data generation methods that could provide deep insight into children's complex, whole-person experiences of games taught using a Game Sense approach. Interviews, even those that are semi structured or conversational in nature, tend to structure responses through the questions that are asked. As Brooker and Macdonald (1999) suggest, the use of visual data and visual modes of analysis offers a means through which researchers can address concern with the lack of student voice in research on physical education. It also offers a means through which researchers can attempt to enter the 'realm of meaning' (Geertz, 1973) of children's worlds.

The use of visual data generation includes the use of photography (photo elicitation and auto photography) and drawings. Photo elicitation involves the use of photographs to stimulate responses that, in turn, can generate dialogue between researcher and participant. Ziller (1990) used a method he describes as auto photography in which the participant takes photographs that are used in interviews. In their study on the meaning of soccer in the lives of young men in a Melbourne high school, Light and Quay (2004) adopted this auto-photography method. They asked a small number of key informants in their study to photograph anything that could tell the researchers something about soccer

in their lives. When the photographs were developed the participants were asked to explain them in terms of why they took them and what they meant. In this research the data were generated through dialogue and not through any researcher interpretation of the photographs. Light and Quay suggest that this method allowed the participants to lead the researchers into their world.

Student drawings have been widely used in research on children's understandings of the classroom environment (McPhail & Kinchin, 2004) and offer another data generation method that can generate deep understanding experience. Recently MacPhail and Kinchin used student drawings in an examination of year five (primary school) students' experiences of Sport Education. They used group interviews in which the students discussed and explained their drawings three months after the drawings were completed. However, the primary use of drawings in their study to generate data was in rating the drawings according to particular themes, As some of the literature suggests, the interpretation of student drawings can be problematic due to the researcher's inability to adequately capture the complexity and meaning of children's representations of experience. (Gramrad & Staples, 1994; Wales, 1990). Wales suggests that interpretation of student drawings is shaped by the researchers own experiences and 'prejudices' and advises caution in generating data through interpretation. With this in mind we made no attempt to interpret the participants' drawings. Instead, we used children's drawings to generate data through the use of drawings to stimulate meaningful dialogue between the researcher and the participant.

Research Method

The site and the participants

The research was conducted at an inner city government primary school in Sydney, Australia and focused on a year 6 class for one 12-week school term. The first author taught the class using a Game Sense approach for one hour per week. The classroom teacher was gradually involved in the teaching and took the last lesson on his own.

Data generation

Data were generated through all-class questionnaires; in-depth one on one interviews with 8 key informants, observation and student drawings. Building on previous research projects in the physical education field that have employed the use of visual data (Light & Quay, 2003; MacPhail & Kinchin, 2004) student drawings were employed as a central means of gaining insight into student experiences of sport. Three times during the study the entire class was asked to make drawings that they felt captured what the cricket lessons meant to them. The second author then interviewed the eight key informants, asking them to explain and discuss their drawing. The data were generated, not from the researchers' interpretations of the drawings, but from the dialogue that it stimulated in the interview process. Other data were generated through questionnaires and observation. The questionnaires were completed by the entire class prior to the commencement and at the completion of the unit. The data analysis was conducted using grounded theory (Glaser & Strauss, 1967). This involves an ongoing process of data generation, analysis, identification of themes and ideas leading to the development of substantive theories that are then tested and explored in further data generation.

Insights Provided by Student Drawings

This section discusses the ways in which the use of student drawings contributed toward the research results and is structured around the three themes that emerged from the study. These themes are: the changes in social interaction and relationships, student perceptions of learning and the improvements in student attitude toward cricket and softball.

1. Changes in social interaction and relationships

Observations indicated to us that there was a mild improvement in student relations in the class but dialogue arising from discussions of the key informants' drawings suggested that, from their perspectives, relations between classmates had improved far more. Drawings ranged from those of very simple representations of self with a smiling face to more complex attempts to capture the social, emotional and physical experiences of the games used. Discussions of the drawings allowed the participants

to take the lead. Looking over their symbolic representation of experience allowed them to reflect upon what they had done and felt in the prior session and include the researcher in this reliving of experience. The class had some problems with student relations previous to the intervention but the inclusive nature of the modified games used and the emphasis we placed on interaction and collaborative problem solving saw relations begin to improve. In an interview during which Mark explained a drawing of a cricket activity he suggested that he enjoyed the teamwork and improved relations:

I describe (cricket) as a good game to play, fun. More fun when you're having team members to have working together with each other, than arguing with them fighting over stuff, yeah (Interview, September 2, 2005).

All participants enjoyed playing in teams and the emphasis that Game Sense placed on working as a team: "I like having like teamwork, how they work together and cooperating" (Mark, interview, September 16, 2005). One of the girls, Katherine, said: "I think it gives you more cooperation skills and it teaches you to like, it teaches you to not be selfish when you are playing with groups and things" (Interview, September 2, 2005).

Over the term the students became more open to having discussions and conversations about their games and valued the learning that arose from interaction as Emma suggested when discussing her representation of interaction in a game:

You learn a lot from everyone. It's good to listen to everybody actually, it's not fair to cut them out, it's good to take something from everybody, cos even the people that are not really good at sports still learn strategies (Emma, interview, September 2, 2005).

In explaining one of her drawing showing boys and girls and reflecting upon the pervious cricket lesson Emily thought that the cricket lesson were having a positive impact upon the relationships between girls and boys:

It's a big effect. Because, like, with the kanga cricket, we had to be boy girl partners which was really good, because we could interact with boys, usually the boys wouldn't talk to us and we won't talk to them" (Interview, September 16, 2005).

2. Student perceptions of learning

The aspect of the results of the study that student drawings had contributed to the most was our understanding of the student's perceptions of their learning. From our perspective as observers we thought that the class had made reasonable progress in their ability to play cricket and softball over the term. However, the students' own views of what they learnt about playing cricket and softball suggested that they had felt they had learnt far more than we were able to see from the outside.

The unit was designed for learning to develop gradually as the complexity of games progressed. The aim of the study was not to measure improvement in game performance so we did not use any formal assessment instrument but we did take note of improvement in game play. Learning occurred within games and was, therefore, less explicit than learning using a technical approach. Consequently the participants did not see learning as being something separate from the games. Dialogue that emerged from discussion of student drawings allowed us to identify the ways in which they did not see learning as a struggle or a task but more as part of enjoying the experience. In their words they were just having fun in the game and saw the Game Sense approach as a 'natural' way of learning as William indicates:

I don't realize it [changing the rules of the games], cos I am already having fun, so I don't realize I'm actually thinking or like learning, I just think I am having fun (Interview, September 16, 2005).

The dialogue arising from discussion of drawings also highlighted growing student understanding of the intellectual aspects of game play as is evident in this quote from one of the girls, Rachael:

[Thinking in sport is] very important, if you want to win the game, just having fun, doing your best and thinking a lot. I think sports are just like

as good as maths or something, because using your brain just as in sports is just the same as maths or everything (Interview, September 16, 2005).

In discussing his drawing of a cricket activity William highlighted the extent to which he had become aware of the intellectual aspects of cricket:

Like, normally we play sports that include not much thinking, but these few weeks, we've been playing sports that include us to think where to hit the ball, not directly up to the person" (September 16, 2005).

3. Improved attitudes toward sport

The dialogue generated by discussion of drawings and the improvement in relationships between researcher and participants it encouraged made a significant contribution toward gaining an understanding of the affective dimensions of learning. The less confident students reported normally feeling nervous or anxious when they were playing sport for fear of being criticized by their teammates for making mistakes and letting the team down. They were also 'scared' of being left over or last picked when teams were selected. In the Game Sense approach we adopted there was no right or wrong action and we emphasised reflection and the collaborative generation of ideas and strategies. Owing to this approach most of the students who least liked sport in the class felt success was achievable in the cricket lessons. They felt less anxious and alienated than they normally had been in physical education classes: "I didn't really feel left out, I feel more welcomed with people and as friends and stuff" (Mark, interview, September 2, 2005). All of the eight key informants reported a change in their attitude toward physical education classes. They said that before the Game Sense cricket lessons they had thought physical education lessons were boring, but that, after them, they looked forward to learning new games. William was an overweight boy who the teacher suggested disliked any sport. By the end of the term, however, he reported loving cricket and wanting to play it when ever he could. Reflection upon experience through explaining his drawings to us allowed him to bring this change up to a conscious level. In responding to a question we developed from previous discussions with him about a drawing he had completed William made this change clear:

Yes. I always think playing sports are pretty boring, after this term with Richard and you, but I think it's a lot of fun now. Coz I normally don't really like sports, but after these few classes sessions, I really like it now and I look forward to whenever, like I can go. (William, interview, September 16, 2005)

Katherine's reflection upon the term captures the extent to which the Game Sense approach had addressed the key informants' reservations about sport, the depth of their emotional responses and the impact it had their self-esteem:

It gives me happiness to know that I can succeed in something, that I can do something. It makes me feel good sometimes. (Katherine, Interview, September 2, 2005)

Conclusion

Emotions, feelings and other aspects of affect are, as Hanin (cited Pope, 2005) suggests, vital aspects of sport participation. They are, "what sport is all about" (Pope, 2005, 273) yet the affective dimensions of TGfU (and by implication similar variations such as Game Sense) have been largely overlooked and require far more research attention than they have received to date. Despite recent calls for attention to the affective dimensions of TGfU (Chen & Light, 2006; Holt et al, 2002; Pope, 2005) little empirical research has been conducted in this area. Some research on teacher development has paid attention to affect (Light, 2002; Light & Butler, 2005; Light & Georgarkis, 2005) but, with some exceptions (see for example, Light, 2003; Chen & Light, 2006), this aspect of children and young people's engagement in games taught using understanding approaches remains largely unexplored. Pope suggests that among the reasons why such little research has been conducted on affect is the difficulty in not only measuring or quantifying it but also in identifying what it actually is. As he suggests, affect is typically seen as an ambiguous and vague concept. The physical education field still labours under the influence of positivist traditions in research and its dominance in the sports sciences with its emphasis on quantifying and measuring. While some aspects of TGfU, Game Sense and other

similar approaches lend themselves to positivist, experimental approaches other aspects do not. Inquiry into human experience that sets out to interpret and understand the affective dimensions of participation in games taught using Game Sense assumes different epistemology and requires different methods of generating data. In this study the use of student drawings provided a valuable means of seeing some of the aspects of the participants' experiences of the cricket unit from their perspectives. It provided us with understanding of the complex human experience involved in playing and learning games.

The insight into the meanings that children make of sport the study reported on in this paper has implications for more general research on sport and physical education and for the development of sport, physical education and recreational activities for children. Given that, in Australia (and elsewhere), developing life long physically active life styles forms the prime justification for physical education, there is a need to understand the affective dimensions of children's participation in sport and other physical activities. This necessarily requires methods of inquiry that can provide understanding of meaning and a means of hearing children's voices. As Brooker and Macdonald (1999) argue, there is a need for more student voice in research on physical education and sport to provide deep understanding of children's worlds and interpretations of experience. If we are to develop meaningful and relevant learning experiences for children in physical education and sport that encourage positive attitudes toward sport and other physical activity we suggest that this is an area in need of further inquiry.

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Teaching Lacrosse Using Games Based Play Practice Principles

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Introduction

Recent trends in contemporary sport pedagogy indicate that pertinent games based environments that contextualise learning provide the foundation for developing the capabilities needed to participate effectively and enjoyably in games and sport (Charlesworth, 1994; Griffin, Mitchell, & Oslin, 1997; Grehaigne, Godbout & Bouthier, 1999; Hubball & Butler, 2006; Launder, 2001; Light, 2005; Slade, 2005). In addition, frameworks that are student and learning centred have the capacity to enhance the quality of games education and to optimise the holistic development of students in movement competence, personal confidence, cognitive and affective domains (Butler & McCann, 2005; Light & Fawns, 2003; Holt, Streat, & Bengoechea, 2002; Siedentop, Hastie & Mars, 2004). The evolution of contemporary approaches & research in the field of games education including Sport Education (Siedentop, 2002, 1994), Play Practice (Launder, 2001), Teaching Games for Understanding (Bunker & Thorpe, 1982; Werner, Thorpe, & Bunker, 1996; Butler 2002; Kirk & MacPhail, 2002) & its associated developments in Game Sense (Den Duyn, 1997; Light 2005, 2004), Tactical concepts (Griffin, Mitchell, & Oslin, 1997; Bell & Hopper, 2003), Games Concepts (Wright, Fry, McNeill, Tan, Tan & Schemp, 2001) and cognitive approaches (Grehaigne, Godbout & Bouthier, 2001, 1999; Maxwell, 2006) have collectively contributed to a better understanding of the complexities of sport pedagogy and influenced professional practice in settings throughout the world (Kidman 2001, Light, 2006; Martens, 2004). Emerging are common and complimentary pedagogical principles for quality practice that include the importance of providing enjoyable, developmentally appropriate games and challenges that maximize participation and provide fair and inclusive involvement. Furthermore the coach or teacher is encouraged to foster positive relationships, plan relevant games based experiences, engage the learner, use a spectrum of methods, ask

meaningful questions and provide feedback in order to develop competent, confident game players. It must be acknowledged that teaching and coaching are highly complex and the application of these principles into professional practice is not an easy task.

Play Practice is a games based approach to teaching and coaching sport that provides a complete package of usable strategies to assist sport educators at all levels to reflect on and enhance the quality of their professional practice. The practical approach is embedded with sound pedagogical principles and underpinned by relevant learning theory (Piltz, 2003a). Of particular significance for sport educators is the clarification of the elements of effective or skilful play. Launder (2001) identifies a lack of clarification of the nature of 'skilled performance' in sport in particular the misuse of the term 'skill' as a key reason for the perpetuation of traditional methods. Ovens & Smith (2006) draw attention to this same issue as they attempt to clarify the complexity of the term skill in game performance. By defining the elements of effective/ skilful play a model for analysis of the nature of games is created that can be used to guide the design of relevant play practices and reflect meaningfully on player performance (Piltz, 2003b). Launder (2001) provides a framework for sport educators to guide the process of teaching in and through games by defining the processes of shaping, focusing and enhancing the play. The strategy of shaping a practice involves manipulating a wide range of variables including playing space, numbers, rules, equipment, the nature of the goal, the scoring, and by introducing conditions to create a specific learning environment. Focusing the play ensures that emphasis is given to specific elements of skilled play. This is important because in games based contexts many elements are developed concurrently and therefore proper focusing can impact on both the quality and direction of a practice. Enhancing the play involves using novelty, challenge and other strategies to engage player interest and commitment to purposeful play. Action fantasy games and cameo player roles are specific examples of enhancing the play (Launder, 2001, p153)

These and other aspects of Play Practice have been embedded into the American Sport Education Program (Martens, 2004), and the most recent guide to Sport Education (Siedentop, Hastie & Mars, 2004).

The intent of this paper is to highlight the underpinning theory of this approach and apply the principles of Play Practice to the teaching and coaching of the non contact version of the game of Lacrosse. The paper will illustrate a teaching framework that aligns learner needs with game demands and uses meaningful game challenges to develop all elements of effective play in Lacrosse. This sequence has been successfully implemented with novice participants in a variety of teaching & coaching settings (Piltz, 2003b; Thompson, 1998).

Theoretical Foundations: Intrinsic Motivation – Task Mastery & Enjoyment

The Play Practice approach seeks to ‘tap into the intrinsic enjoyment and fun of playing’ (Lauder & Piltz, 2006, p 48) to encourage active and purposeful involvement. Subsequently it seeks to build intrinsic motivation by using games as key learning experiences that are shaped to produce challenges that match task and player ability and provide the potential for all participants to experience success and enjoyment (Lauder, 2001). By focusing on developing a task mastery orientation sport educators are able to positively influence the development of intrinsic motivation, and promote the development of competent and confident players (Chandler, 1996; Cresswell, Hodge & Kidman, 2006; Mitchell & Chandler, 1992; Stork, 2001). Brain based learning theory also indicates the positive effects and benefits of promoting intrinsic motivation over external reward systems and highlights the value of engaging appropriate emotions in learning (Fogarty, 1997; Hannaford, 1995; Jensen, 1998; Light, 2003). Lauder (2001) postulates that it is the feelings of enjoyment associated with competence, not just fun that serve as a significant source of internal motivation for both purposeful participation and long term commitment and involvement in sport. This view is supported by Csikszentmihalyi (1990) who uses the term ‘flow’, Kretchmar (2005) refers to ‘delight’ and Heywood (2001) uses ‘joy’ to describe the emotional state of enjoyment that serves as a powerful source of internal motivation for human behaviour. These authors also differentiate fun from enjoyment and align enjoyment with competence, fulfilment and achievement as the basis of intrinsic motivation. The affective domain has been highlighted as a significant area for investigation in games education because of the implications for children’s motivation to participate in lifelong

physical activity (Holt, Streat, Bengoechea & Garcia, 2002; Holt, Bengoechea, Streat, & Williams, 2004).

Constructivist Perspective – Situated & Dynamic Learning

Play Practice engenders a holistic, learner-centered perspective on instruction as sport educators are encouraged to thoughtfully consider the learners' needs, the social and cultural context and the nature of the activity in order to plan for meaningful student learning. By establishing connections with the students' previous experiences and acknowledging context, educators can intelligently scaffold new learning. Participants are encouraged to construct meaning and reflect on their learning as they engage in finding solutions to the diverse array of problems that are presented in the game environment. By contextualizing learning within games participants 'play to learn' and in so doing learn to play by developing personal competence and confidence, thinking skills, personal and social responsibility and other domain based learning outcomes. These principles are congruent with social constructivist learning theory, situated learning theory and dynamical systems perspectives in motor learning (Abernathy, 1986; Butler, 1997; Clark, 1995; Perkins, 1999; Dyson, Griffin, & Hastie, 2004; Kirk & McPhail, 2002).

Assumed Pedagogical Principles

In order to construct quality learning environments Launder (2001), identifies three significant strands of knowledge that underpin practice. The first strand includes a sensitive consideration of the nature of the learner and knowledge about what they desire from a sport experience. For children and youth key precepts for participation include a preference for playing the game rather than practicing, a desire to be competent and not embarrassed whilst playing, a preference for participating with friends, an interest in participating in even, fair competition, having fun and in receiving acknowledgement from significant others (Launder, 2001; Siedentop, 2002; Martens, 2004). The second strand relates to the circumstances that promote learning. Launder, (2001, p 46) suggests that learning is enhanced when the learner really wants to learn, has a clear model of the learning task, feels that the task is challenging

but attainable, has many opportunities to practice in a positive environment, clearly understands the relationship between the practice and the real activity, receives feedback about the quality of their performance, is not threatened by immediate or continuing failure, is recognized by significant others for their effort, improvement, successes and is able to quickly apply what they have learned in what they see as real situations. These principles are consistent with contemporary knowledge on effective instruction in Physical Education and games teaching (Grehaigne, Godbout and Bouthier, 1999; Richard & Wallian, 2005; Rink, 1996, 2001; Rink, French, & Tjeerdsma, 1996). The 'Ps of Pedagogy' a working model of instruction presents these principles in an accessible way for sport educators to improve their professional practice (Lauder, 2001, p 65-72).

The third strand relates to the 'competencies needed to participate effectively and enjoyably' in the activity or sport (Lauder, 2001, p 46). Lauder (2001) describes these competencies as elements of effective (skilful) play including technique, agility, understanding the rules, tactics, strategy, reading the play, communication, endurance, resilience, a sense of fair play and game sense. By clarifying these terms into a model of effective/ skilful play sport educators are able to better appreciate the highly complex phenomenon of skilled game performance. Skill in games involves 'doing the right thing at the right time' and it is best described as the 'combination of games sense with other elements of play' (Lauder & Piltz, 2006, p51). When the model is applied to practice it is easy to appreciate how the relative importance of these elements depends on the nature of the game and on the circumstances at any instance within the game. It is also important to note the significance of these elements vary with the age, ability and cultural experiences of each group of participants so sport educators need to focus on the development of the most important elements for their participant needs (Lauder & Piltz, 2006).

Teaching Lacrosse applying games based Play Practice principles

Nature of Skilful play in Lacrosse - applying the model

Technique is defined as 'the ability to control and direct the ball' (Lauder, 2001, p33) and technical ability is an important aspect of effective play in Lacrosse. At a

novice level the essential Lacrosse techniques include of pick up (scooping), carrying, catching and throwing ball. Closely associated with technique is *agility* because this capacity enables a player to get into good positions at exactly the right moment. In Lacrosse players are required to move quickly, change pace and dodge in order to gain possession of the ball and react in defensive roles. An understanding of the three primary rules in Lacrosse rules plus the secondary rules associated with the goal circle are essential because they determine what is and is not possible in the game and this directly influences technique, agility and tactics. Tactics relates to positioning in the game when in attack and defence and an understanding of tactical principles of play in Lacrosse provides players with a template for their positioning throughout a game and a structure for their decision making. Tactical options in Lacrosse are closely related to technical capabilities. An understanding of strategy enables players to apply their tactical knowledge within an overall contextual framework which provides the best chance of success for themselves or their team. In Lacrosse players are required scan the field of play in order to *read the play*. This capacity requires players to determine the most significant components of the data pouring in from the unfolding environment and be able to identify patterns in the apparent chaos. *Games sense* is defined it as ‘the ability to use an understanding of the rules, of tactics, of strategy and of oneself to solve the problems posed by the game of by one’s opponents’ (Lauder, 2001, p36). In Lacrosse a player uses games sense to read the play, decide what to do in the context of the game at that instant, select the appropriate response then execute that response – either by moving into the correct position and/or by controlling and directing the ball effectively. *Endurance* is important in Lacrosse because it allows a player to keep on getting into good positions throughout the game while maintaining their focus and technical expertise. Verbal *communication* is important in Lacrosse to organise defensive structures and to provide support information when in attack. Non verbal communication is also evident when the stick head is presented as a target or when play patterns are signalled. *Resilience* – both physical and emotional – permits players to give their best and to cope with the variable situations that arise in any given game context. These elements of skilled play need to be supported by a sense of *fair play* for this allows players to focus on what is truly important in games and ensures that participation is enjoyable for all.

Starting in a game – End zone grip- ball

Novice players are initially introduced to Lacrosse through participation in a positive game experience called ‘end zone grip ball’ that is closely aligned to that of the real ‘non contact’ Lacrosse game. The game is *shaped* by the three primary rules of Lacrosse (no contact, one on one to a free ball and 4 sec individual possession carry limit), the playing space (basketball sized court size or equivalent outdoor space) and numbers (5 or 6 players per side) are in context. The only modifications in the game shape are the playing equipment and the system for scoring. A velcro ball and hand held grip ball pad replaces the lacrosse stick and ball. The goal is removed and replaced by an ‘end zone’ space at both ends of the court in which one designated player is positioned. This player is permitted to move in the end zone and must catch the ball thrown to them on the full to score a goal. No other players may enter the end zone. Once a goal is scored the game is restarted at the end zone by the opposing team with all players (except those in the end zone) returning to their defensive half until play is started. This provides teams with clear space to begin the play and the game commences in the same manner. Using the grip ball pad to catch and the free hand to throw instead of the lacrosse stick simplifies the technical demands of the game and allow participants to experience the fun and enjoyment of playing a game at the beginning of the lacrosse experience. Other equipment such as a softball mitt can be used for catching or the game can be played with a medium play ball caught in the hands. Teams are encouraged to take responsibility for maintaining the rules either through informal self monitoring or by sharing of the formal umpiring role

Changing the method of scoring from shooting into a small goal to using a larger end zone space eliminates the need for a goal keeper and promotes greater success in scoring. The three primary rules provide the essential structure to the game and promote inclusive participation. The non contact rule (body and stick) ensures player safety and it requires players to interpret the rule and understand how responsibility for contact is determined. Restricting the loose ball contest to one player from each team eliminates the congestion associated with contesting a free ball and it also helps players to value off ball support positioning. The 4 second carry limit is essential for ensuring equal opportunity for both teams to gain access to the ball, it promotes team work and also allows time for creative individual play. Other rule ‘conditions’ can be introduced within the context of game play as the situational need arises. For

example a rotation of the goalie when a goal is scored or at set time intervals ensures sharing of roles, a possession in each half before an attempt at goal encourages team play and a male female pass pattern before scoring promotes gender inclusive play.

This early game experience is fun for participants plus it allows them to appreciate how the game operates and to discover the influence of key rules on game play. This game experience places participant learning in context and it enables them to develop an understanding of all of the elements that constitute effective play. The sport educator is able observe and assess the participants' capabilities from a variety of perspectives including the various elements of effective play, individual responsibility and team cooperation. This provides an authentic benchmark for measuring future improvement and a relevant foundation upon which new learning can be introduced and practised in a meaningful way.

These games are *enhanced* by structuring a short time frame interval for the games (5-10 min) and rotating teams regularly. Interval time between games is scheduled to open up opportunities for reflection and learning from the game. The teacher is able to facilitate learning in a variety of ways based on their observation and analysis of the play context. Individuals and teams are also able use the interval time to take on responsibility to arbitrate and clarify any issues that may arise in the game or to share game play ideas. In the initial few rounds of games the main *focus* is on the participants' ability to apply the key rules in the game (*games sense*). This can be quickly extended to include basic tactical positioning in attack and defense and mobility when in possession of the ball. Other student learning outcomes such as personal responsibility, fair play, effort, empathy for the umpire can also feature as a specific focus.

Adding the essential techniques to play Lacrosse

Participants are motivated by this initial game experience because it is very similar to playing Lacrosse except for the equipment. This means that participants are ready and curious to use the lacrosse stick and they can quickly begin to use the stick to pick the ball up from the ground, move whilst carrying it as well as catching and throwing with it. Participation is maximized during this time by allocating a ball and stick per player so that each player has plenty of opportunity to master the essential techniques

and show responsibility for safely management of the stick. Novel technical task challenges that can be modified and combined allow students to become familiar with using the stick and ensure that practice is purposeful. Examples of this are pick up - stationary followed by on the move and carry position, catching - over head or out in front using right hand and then left, combining pick up, carry and throw at a target. Cooperative partner tasks that allow peer coaching can be included in hand feed catch and throw challenges.

Returning to the game – Endzone Lacrosse

Following these technical challenges players return to the End Zone game using the Lacrosse equipment. All other aspects of the game remain the same as does the play interval time structure. Before commencing play the issue of personal responsibility for safe participation can be reiterated by clarifying the no contact rule as it relates to possible stick contact. When in the defending role players are focused on maintaining body position stick distance away from the ball carrier with their stick held vertical to attempt to intercept the pass. Attack players in possession of the ball are focused on moving to space and passing the ball wide of the defender to avoid endangering the defender. During the game intervals the teacher is again able to facilitate learning by drawing out key features from observation of the game play. The initial focus for observation is on the application of rules particularly those relating to safety however the game context also provides information on other elements of effective play including technique, positioning, reading the play, tactics and games sense. In addition the teacher is able to observe for inclusive involvement, fair play, the umpiring role and team cooperation. Participants are encouraged to take leadership during the intervals to attend to rule clarification or address any other issues and via the process of arbitration.

This pattern of teaching ‘in and through’ the game continues in the sessions that follow for the duration of the Lacrosse unit. It is based on a ‘revolving, expanding analysis of student needs’ (Lauder, 2001, p 51) set within relevant game contexts. This process is dependent on continuous, perceptive observation and analysis by reflective sport educators who can orchestrate continuous improvement in skilful play for all participants. Higher order teaching capabilities are required to fully master this complex process and these are best developed by refining game knowledge and

through reflective experience (Lauder, 2001; Piltz, 2002). Participants undertake an active learning role within this type of lesson structure by engaging in problem based game play, reflection, discussion, clarification, observation and analysis of the various elements of effective play (Richard & Wallian, 2005).

Progressive development of elements of effective play in Lacrosse

A progressive building of the various elements of effective play follow as participants experience play practices and the game with built in cycles of reflection. The end zone game core structure continues to be the key learning experience that features in every lesson however the end zone area is gradually reduced and then replaced by the goal circle and goal for scoring with an obstacle such as a chair as a 'mock goalie' or targets before the introduction of a goal keeper.

In the early lessons novices will require additional opportunity to consolidate technique and this can be facilitated in a variety of novel play practices that maximize participation. An example of this is the 'heavy traffic' play practice where participants have to scan and read the play as they carry the ball across a congested play space before throwing it to a team mate to catch. A team catching challenge can easily be incorporated into this play practice or it can be extended to include carrying and changing hands or dodging around a defender.

Possession games that promote effective passing and receiving within a half court space starting with 4 attackers and one defender (4v1) and progressing to 3v1 introduces the elements of reading the play, decision making and accurate technical execution. These games duplicate play patterns that occur in the game based on quick control of the ball, scanning to read the defenders position and decide on the best option and pass accordingly. Scoring is based on consecutive safe passes in attack and defenders switch when they touch of the ball or after a determined time. Defenders are learning to read the play, position themselves, anticipate and block passes as well as resilience to persist with effort to force an error. The 3v1 focuses players on key tactical principles including support in attack by using thoughtful mobility to create a good passing angle. This game can easily be extended to 4v2, 5v3 within appropriate playing space to further encourage the concept of playing in

triangles with increased defensive distraction. The key areas of focus in these play practices can be readily transferred back into the Lacrosse games and developed further through strategies such as manipulating the scoring to add a bonus for demonstrating these principles, using freeze replay to pause the play and review tactical positioning with the players or through questioning and interacting during the interval time periods. During this time the end zone space in the game is reduced and brought in from the back line so that play can occur behind the goal which is a unique feature of Lacrosse. The goal and 'mock goalie' can be included. In order to counter the negative transfer that players experience from most other games where play does not extend beyond goal line, the goal can even be turned around to face the backline for a short play period.

Once the goal is introduced a series of 'go for goal' games can be created that enable players to become familiar with using the space behind the goal as well as consolidate tactical concepts and decision making. This can begin in a conditioned 2 v1 (expanded to 3v2, 5v3, 4v2) go for goal game that is played in half court play space where attackers must move the ball behind the goal before they can attempt to score. This condition focuses attackers on how to work from behind the goal by effectively read the play, using mobility, making good decisions and using techniques. Support attackers are able to work on communication, mobility and support positioning in relation to the angle on goal and technique. These games can be made into continuous go for goal games (3v1, 3v2, 4v3) to introduce the principles of a fast break. Attackers learn to move quickly to support positions and use good passing to maintain possession of the ball to draw defender(s) out of position in order to create space to be able to score. Defenders build their appreciation of the importance of delay on the ball and support cover positioning that is required to work effectively as a team to hold out the attacker, intercept or force an error. During this time it is possible to introduce the specific role of the goal keeper. This can be facilitated through a series of progressions that include an appreciation of proper positioning, agility and technique. The goal keeper must wear appropriate protective equipment including a helmet/ face mask and once they are introduced into game play it is necessary to ensure that the rules associated with the goal circle, goalie and the defending restrictions for the immediate space in front of the goal are clarified to ensure safe participation. Any of the go for goal games explained earlier can be

revisited with the inclusion of the goalie. This provides an opportunity to focus on communication and other specific tactical aspects relating to goal keeping such as clearing.

Conclusion

The framework illustrated in this paper provides the foundation for developing participants' capabilities as skilful Lacrosse players using a games based approach to teaching and coaching that is aligned with pedagogical theory. The progressive game based structure fosters player interest and builds intrinsic motivation through success and engagement in joyful play experiences. Sport educators working with players beyond the novice level must have a comprehensive understanding of the nature of Lacrosse in order to ensure that players remain challenged and motivated beyond the foundation level provided in this paper. All sport educators are encouraged to reflect on their current approach and make use of the ideas presented in this paper to continuously improve their professional practice.

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Influencing Professional Practice in Games Education through Working Models and Principle Based Experiential Learning

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Introduction

Preparing quality professionals to function effectively in complex, uncertain and ever changing worlds of practice is multifaceted and problematic. The complex nature of teaching must be fully understood in order to design relevant professional preparation programs to adequately meet the diverse needs of the contemporary educator (Grimmett & MacKinnon, 1992; Launder, 1993; Schon, 1990; Tinning, 2004). Launder (1993) indicates that teaching and coaching are highly complex 'crafts' requiring a vast array of knowledge, personal capabilities, dispositions and skills to be brought together in a dynamic, flexible way to manage and orchestrate complicated learning environments that are socially situated. He also suggests that 'above all the coach [*teacher*] must be a master of the *instantaneous response* in which professional and personal skills are skilfully fused and rapidly applied ...' in complex environments to attain quality learner outcomes (Launder, 1993, p.2).

Student teachers in the Health and Physical Education (H&PE) learning area are required to teach across a wide variety of movement mediums including the diverse and complex realm of games and sports. This presents a considerable challenge for beginning educators as they begin to confront dominant discourses in sport and consider ways of managing chaotic environments to facilitate meaningful learning outcomes for participants. The task is difficult because the capacity to influence the development of competent and confident game players requires a clear appreciation of the components required to participate effectively in the activity coupled with an appreciation of the learners' needs and capabilities. In addition, it requires a range of 'higher order' observation and analysis capabilities in order to make sense of the chaotic game environment and provide meaningful feedback (Piltz, 2004). Most

novice educators are primarily concerned with managing the learning environment and beginning to apply foundation pedagogy principles relating to presentation of the task, communication, participation and positioning.

The purpose of this paper is to report on the findings of a study that investigated the value of 'working models' used within an initial pre service 'experiential based' course of study in Health and Physical Education at the University of South Australia. Results indicate that the *model of effective 'skilful' play* and the *P's model of Pedagogy* are significant learning tools that assist novice educators to develop their teaching capabilities, build personal confidence and improve their reflective capacity. These models provide an operational framework to assist student teachers to plan and evaluate meaningfully, to make sense of complex, chaotic game environments and to identify key principles for quality teaching and learning.

The Nature of Teacher 'Craft' Knowledge

Rovegno (2003) suggests that teacher knowledge is complex, practical and 'personal' because it operates within and is shaped by practice and it is constructed over time through experience. Schon (1990) indicates that professionals who operate effectively in unpredictable zones of practice demonstrate a unique 'artistry' a form of 'knowing in action' that includes the capability to reflect 'in and on' action. Similarly O'Sullivan (2003) recognises the significance of teacher 'knowledge *in practice*' and distinguishes it from knowledge for practice and knowledge of practice. Grimmett & MacKinnon (1992) refer to the form of knowledge that emerges from engaged experience and reflection in the practice setting as craft knowledge. This includes pedagogical content knowledge associated with teachers' representations of content material and how it might be effectively taught and pedagogical learner knowledge allied to procedural ways of engaging and enhancing learner focused teaching in the midst of classroom action. Both forms of pedagogical knowledge are derived from a 'considered response to experience and form over time in the through the process of reflection' (Grimmett & MacKinnon, 1992, p 387). Grimmett and MacKinnon (1992, p 438) suggest that craft knowledge is significant for developing skilful, reflective and empowered practitioners because it provides a 'sensitizing framework' to explore the multifaceted dimensions of teaching and learning within a

context of critical inquiry and reflection. Through this process of ‘learning by doing’ novices are able to strengthen teaching capabilities, build personal confidence, challenge personal beliefs, construct meaning and take ownership of their professional development (Collier & Herbert, 2004; Grimmett & MacKinnon, 1992; Launder, 1993; O’Sullivan, 2003; Schon, 1990).

Personal Beliefs and Changing Pedagogical Practice

Student teachers bring their own personal experiences, beliefs and perceptions about teaching with them into teacher preparation courses. These prior experiences shape individual perceptions and personal beliefs, they are powerful influences that impact on the way new information is accepted, interpreted and integrated into professional practice (Trangaridou & O’Sullivan, 2003; Rovegno, 1992). Tinning (2004) indicates that many physical education student teachers carry personal perceptions, beliefs, values and behaviours about sport and physical activity that form a barrier to critical reflection and impact on the way new information is accepted and applied. Personal beliefs and established traditional practices in games teaching have also been identified as major constraints influencing beginning physical education teachers’ acceptance and implementation of innovations in game pedagogy. Studies (Butler, 1996; McDonald & Glover, 1997; Light, 2002) indicate that despite exposure to new teaching approaches in games education during pre service programs beginning students often revert to conventional practice in their early years of teaching. Launder (2001) indicates that inappropriate pedagogical practices including ‘technique’ dominated mindless drills, irrelevant minor games and laissez-faire game play are perpetuated due to a lack of clarity in the language of sport and a limitation in the definition of ‘skilful performance’ in sport. He suggests that the misuse of the word ‘skill’ and a lack of clarity of other important terms such as tactics, strategy, game plan together with a general lack of understanding of what is needed to play games effectively have collectively resulted in the difficulties in influencing change in professional practice.

Novice educators must be provided with opportunities to confront, challenge and adapt their personal beliefs as well as develop their teaching capabilities within supportive learning environments (Collier & Herbert, 2004; Curtner-Smith & Sofo,

2004). When students engage in contextual learning experiences with supportive feedback that encourages inquiry, deeper reflection and ownership of learning they are likely to develop as critically reflective practitioners (Grimmett & MacKinnon, 1992; Schon, 1990). Working Models assist novices to make sense of complex teaching environments and when these models are integrated with experiential based learning settings students are able to take ownership for their personal and professional development. The model of 'effective/ skilful play' is a framework that defines key capabilities in sport performance and enables sport educators to better appreciate the demands of various games and sports (Lauder, Piltz & Lauder, D, 1993; Lauder, 2001; Piltz, 2003; Lauder & Piltz, 2006). The 'P's of Pedagogy' is a user friendly, working model of instruction that enables novice educators to confidently access the complexity of teaching and take responsibility for their professional learning (Lauder, 1989, 2001). It provides a framework for developing teaching capabilities and a lens for reflecting on the complexities of quality teaching and learning in these areas.

Methodology and methods

A qualitative approach was used in this study and the methodology was situated in the Interpretivist paradigm. Participants in the study were student teachers beginning their Bachelor of Education studies (Middle –Secondary) in Health and Physical Education(H&PE) at the University of South Australia. The qualitative nature of the research enabled a contextual investigation of the students' perceptions of the value and efficacy of the two working models (model of effective/skilful play and the P's of Pedagogy) used in the initial course of study titled Health and Physical Education 1 (Leininger 1985). At the completion of the course students completed a course evaluation and a short questionnaire containing open ended questions relating to their teaching experience and the models used during the course. Thirty eight (38) students of the class of 44 were in attendance and participated in the study. Qualitative data from the questionnaire focusing on working models was collated and analyzed by identifying emerging themes and common perspectives (Patton 2002).

Experiential based course structure

The H&PE 1 course is a semester of study comprised of workshops and an extended Lab School teaching experience. A problem based inquiry approach is used in the initial practical workshops to introduce and engage learners with pedagogical content and pedagogical learner knowledge and to begin critical examination of dominant practices in physical education. Students are encouraged to reflect on their own personal experiences of physical education and sport as they engage in and analyze professional practice from a variety of perspectives. During the game based workshops students are introduced to the framework for learning how to teach in and through games. The processes of shaping, focusing and enhancing the play provides novice teachers with a direction for planning meaningful and engaging learning environments. The strategy of *shaping* a practice involves manipulating a wide range of variables including playing space, numbers, rules, equipment, the nature of the goal, the scoring, and by introducing conditions to create a specific learning environment. *Focusing* the play ensures that emphasis is given to specific elements of effective/ skilled play. This is important for novices to understand because in games based contexts many elements are developed concurrently and therefore proper focusing can impact on both the quality and direction of a practice. *Enhancing* the play involves using novelty, challenge and other strategies to engage player interest and commitment to purposeful participation (Lauder, 2001).

Following these workshops students are involved in 'lab school' teaching (PE) with a group of 15-20 upper primary children. During this time the student teacher is fully responsible for planning, preparation and teaching a series of six 50 min lessons over a six week period. The lab school provides a context for learning that is relevant, aligned to the real world and where theory is meaningfully entwined and applied to practice. This type of experience enables student teachers to confront real problems and discover possible solutions in their own way. As student teachers plan, teach and evaluate the series of lessons they are provided with the opportunity to demonstrate teaching capabilities, develop craft knowledge, process constructive criticism and utilize critical reflection (Garrett & Piltz, 2000). The Lab school experience is supported by a variety of strategies to develop reflective thinking and to maximize students' learning. Senior students take on the role as 'peer mentors' in the Lab

School program by acting as a supportive, critical friend. The mentors have experienced the lab school program in the previous year which means they are acquainted with its structure and they have high levels of empathy with the beginning students. The student teachers systematically evaluate each lesson and complete a series of focus sheets containing probing and reflective questions relating to critical issues in the learning environment. Further opportunity for students to reflect and discuss any specific events arising from the Lab school occurs in a weekly class debrief facilitated by the University lecturer.

Working Models as learning tools

Students are introduced to both working models (*model of effective /skilful play and the P's of Pedagogy*) during the initial workshops and they are continuously applied in the planning and evaluation processes for the lab school teaching experiences.

The model of effective or skilful play

The model describes the array of elements that are required to play games and sports effectively. *Agility* is needed to get quickly into the right spaces in games, a *knowledge of rules* is required as it determines what can be done in the game, knowledge of *tactics* permits good positioning and intelligent movement into space, *communication* ensures team-work, *endurance* enables players to continue to get into the right places and maintain good positioning throughout the game, *technique* allows the player to control and redirect the object effectively, *resilience(physical and emotional)* enables the player to keep on keeping on particularly in the tough phases of play. Being able to *read the play* and anticipate enables the player to have more time to make good decisions and react in game play. The concept of *game sense* is introduced and defined as 'the ability to use an understanding of the rules; of strategy; of tactics and most importantly of oneself to solve the problems posed by the game or by one's opponents. Defined in this way, game sense bridges the gap between understanding and action and incorporates the process of decision making (Lauder, 2001, p36). By clarifying these key constructs it is then possible to understand skillful play as the combination of games sense with other elements of effective play. When viewed in this way it is possible to acknowledge the contextual nature of skilled play and how the relative importance each element can vary from one sport to

another, from one player role in a game to another, and from one game moment to another. By clarifying these elements of game performance the educator can ensure that relevant game based experiences are structured so that the appropriate elements of skilful play are developed.

The P's of Pedagogy

The 'P's model of Pedagogy' presents a series of guiding principles which frame inquiry about quality teaching and learning. It provides an operational framework for developing teaching capabilities and a lens for reflecting on the complexities of teaching and learning (Lauder, 1989, 2001). The model is designed for progressive expansion to match the changing developmental needs of novice educators to include more complex, critical understandings, higher order teaching processes, alternative methods and innovation. The model addresses the importance of including a relevant *pretest* for establishing the level of the learner as a starting point for future participation and concludes with an authentic appraisal (*post test*) of student progress. Included below is an example of a focus sheet used in the final stages of the Lab school program that illustrates the elements of the P's model. In this instance the framework serves as a lens for directing and improving teacher reflection.

Planning and preparation

How well planned and prepared were you for the Lab School? What have you found to be the main benefits of this aspect of your teaching?

Presentation of the task

What do you consider to be the key aspects of presenting the task?

How successful are you at this aspect of teaching?

Protected – providing a safe and inclusive learning environment

Why is this element such an important aspect of teaching?

What have you found to be the most significant aspects of this element and why?

Personal 'presence' & communication

What is the most significant thing about the impact of communication in your class?

What aspects of communication do you wish to improve on?

Pertinent, Purposeful and persistent learning experiences

What have you found to be important for generating and maintaining a positive state of learning for the students?

Progression in learning

What have you found to be the most effective ways to use progression in learning to facilitate success for the students?

Personalised

Were you able to cater for individual differences within the class? Provide examples.

Playful

How important is this element in your teaching and why is it important?

Positioning & provision of feedback

What are the most important aspects of this element that you have learnt through your Lab school teaching experiences?

Pacing & Flexibility

In what way has your capacity to 'pace' the lesson & respond to changing circumstances developed during your lab school experiences?

Results and discussion

Working models - a structural framework for learning in complex settings

Student teachers provided overwhelming support (100% response) for the value of both models as tools to assist their professional learning in health and physical education. Responses indicated that the models provided them with a structural framework, a guiding base and a 'direction to work from' in their professional learning.

..helped achieve learning more efficiently (r d)

..supported learning and made it more relevant, puts it in context (r l)

..easy guide to work from using simple terms & language (r m)

The models were perceived as significant in assisting students in planning, reflective evaluation and in the provision of feedback. They enabled students to identify key factors for quality teaching practice and importantly were deemed as significant in building their self confidence towards teaching.

...makes the process of teaching less daunting and provides ideas .. (r c)

....helped me to identify quality teaching practice, its influence on learning, participation and motivation' (r j)

The P's of pedagogy a significant model of instruction

Responses from students indicated the P's framework (Lauder, 1989, 2001) enabled them to identify areas of teaching that are significant for student learning and consequently it provided clear guidelines for their teaching practice. A consistent theme that emerged from the data was the importance of the model for providing a structure for developing teaching capabilities. Students suggested that the model helped them to understand what is expected in teaching and enabled them to plan for their own personal and professional development.

..able to set personal expectations and identify specific areas to work on (r p)

..provides a structure for me to recognize what areas of my teaching I need to work on (r l)

Responses also indicated how the framework provides a template for reflection and self evaluation that encourages responsibility and ownership of professional improvement.

.. enabled me to take notice of factors that I had not considered & allowed me to think and evaluate effective teaching strategies (r f)

.. a useful tool for evaluation (r j)

Improved Game Analysis and Games Teaching

Responses from students conclusively suggest (100% response) that the model of effective/skilful play was significant in assisting them to teach games effectively. It enabled the students to gain a better understanding of the nature of the activities and provided them with a sound basis for their planning.

- .. an excellent guide to what is required for any sport that you are teaching (r v)*
- .. allowed me to think about what aspects of skilful play I am trying to develop during the lesson (r e)*
- ..helped me to choose activities that are pertinent (r e)*
- ..made it easier to plan effective learning experiences (r h)*

The model's clear terminology assisted students with game analysis and allowed them to identify relationships between different activities. It also helped students understand the importance of structuring *relevant game like* learning experiences, to plan for progression and to provide authentic feedback.

- ..provides guidelines for what to look for when observing students' performance*
- .. helps when providing pertinent feedback (r a)*
- ..I often ask myself how is this relevant, when does this occur in the game?(r r)*
- .. reduces complexities and enables me to arrange my thoughts & create a checklist to aid feedback (r j)*

Another significant finding was that students were able to use the model to identify learner capabilities and draw on this information for planning relevant learning experiences.

- ..a way to evaluate where a student is at (r k)*

Conclusion

Student teachers who participate in context based learning environments including lab school experiences in physical education improve their personal confidence and competence in teaching and begin to demonstrate capabilities of critically reflective educators (Garrett & Piltz, 2000). This study has highlighted the value and significance of two working models as learning tools used within an experiential based learning course for student teachers in Physical Education. These models assist individuals to make sense of the complex and chaotic teaching environment in Physical Education and provide a safe framework for challenging dominant discourses and personal beliefs. In so doing this presents teacher and coach educators with an opportunity to influence traditional perspectives and lead to sustained change in the quality of professional practice in physical education and sport education.

Novice educators who are developing their craft knowledge would benefit from applying the P's of pedagogy as a working model for instruction within a context based learning environment. Student teachers and coaches can use these models to better appreciate learner capabilities, to plan purposefully, to focus games based learning and to provide feedback. Importantly these models provide novice sport and physical educators with a lens to guide reflection, direct meaningful evaluation of professional practice and encourage ownership of personal development. By clarifying terms and defining concepts of effective sport performance the model of skilful play enables educators to gain a clearer appreciation of the complexity of games and sports and influence the quality of professional practice in games and sport education.

Further research of a longitudinal nature is recommended in order to track the progress of these student teachers as they progress into the profession as beginning teachers. This would provide additional information about the longer term impact and sustainability of working models and experiential based learning in teacher education as a method of sustaining quality professional practice.

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Game Learning Experiences in Physical Education with a TGfU Application

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Introduction

Sport is a socially constructed experience. Within the Teaching Games for Understanding (TGfU) research, two studies in particular have built upon the original Bunker and Thorpe (1982) model to give emphasis to the importance and impact of the social context within which games are played.

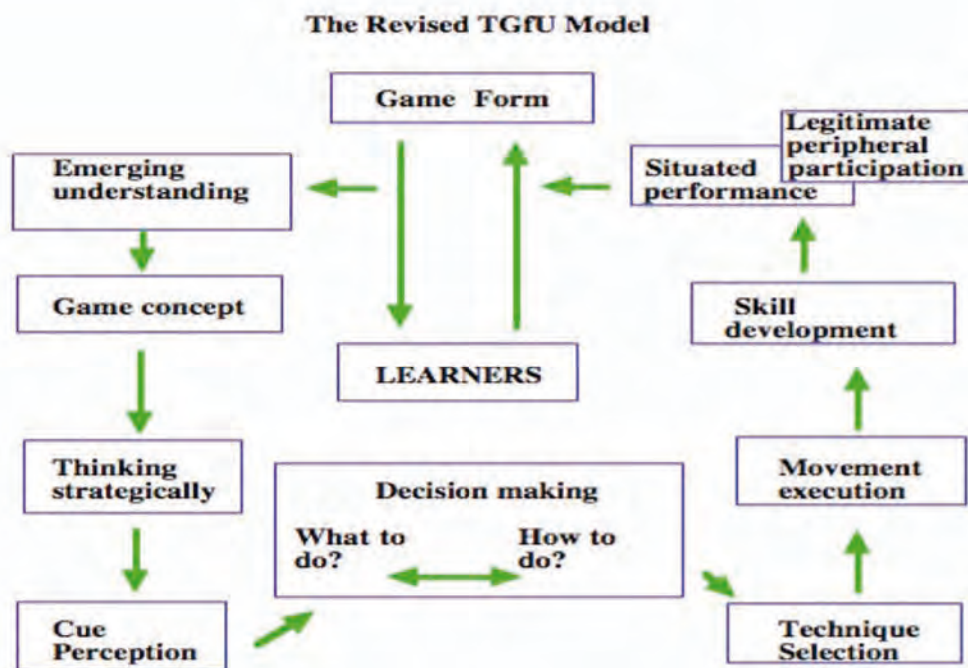
Kirk and MacPhail's (2002) paper provided a rationale for the inclusion of the notion of situated learning and legitimate student peripheral and prior experience within their expanded TGfU model. On the other hand, Holt, Streat and Bengoechea (2002) argued that the social context of sport also had the potential to impact on a player's affective domain. Hence they suggest that the effect on the learner of the context of where games are learnt must be a major focus of TGfU based instruction.

The purpose of this paper is to discuss and present results from a project that taught novices field hockey¹ using a TGfU instructional method based on the Kirk and MacPhail (2002) reformulated model of TGfU. The investigation explored three questions. First, does the TGfU model of game instruction produce positive declarative knowledge outcomes related to game concept, tactics and strategies? Secondly, and in response to the direction suggested by Holt et al (2002), can a TGfU approach impact on learner's affective domain in terms of their perspectives on enjoyment and the ability to make a positive contribution to a team? Finally, and closely related to the second question, does a TGfU approach to game instruction have the potential to impact positively in terms of gender bias in the physical education context?

¹ Within this article field hockey will be referred to as hockey.

The paper has four sections. The first discusses the reformulated Kirk and MacPhail (2002) TGfU model, highlighting aspects of the model applied within the project. The second section outlines the methodology of the project, including relating the use of the TGfU hockey programme *Stick2Hockey* (Slade, 2003) to the Kirk and MacPhail model. The third section of the paper presents and discusses the results of the project in relation to both the Kirk and MacPhail and Holt et al, models. Finally, some conclusions and observations based on the study are presented.

The Kirk and MacPhail TGfU Model, 2002.



Kirk, D., & MacPhail, A. (2002). Teaching games for understanding and situated learning: rethinking the Bunker – Thorpe model. *Journal of Teaching in Physical Education*, 21, 2 177 – 192.

Fig. 1

The Kirk and MacPhail reformulated TGfU Model (2002).

Fundamental to the Kirk and MacPhail (2002) model are two steps, 'Game Concept and Situated Performance' (See Fig. 1). In explaining the Game concept step in the model, Kirk and MacPhail emphasised that developing an understanding of a game was more than merely memorising the rules, positions and other aspects of a game's declarative knowledge. They suggested that the initial modified learning experience had to take place within a context of learning that, to a greater extent, replicated the authentic game concept and structure. They emphasised that part of the emerging understanding leading to an appreciation of the game concept obviously required learners to learn rules and positions. They argued that if players could grasp those concepts then they were more likely to understand the game's tactics and strategies. Crucially, they contended, that such learning should be acquired through playing the game. They suggested that game declarative knowledge taught this way would result in strategic thinking players.

The second step that is fundamental to the model is the notion of situated learning. Situated learning is defined by Kirk and MacPhail (2002) as "an active process of engagement with socially organised forms of subject matter" (p184). They suggested that the social organization of the subject matter derives from various communities such as school settings, media representations of sport and cultural perspectives. They conclude that students are legitimate peripheral participants in these communities of practices and that they require learning contexts and experiences that they perceive as authentic. In this project the key to providing an authentic situated learning context was to discover what the students' expectations were of the game; what they thought hockey would feel like to play. Within the Kirk and MacPhail model this related to their concepts of a situated learning and legitimate peripheral participation.

Discovering those expectations was also considered crucial in meeting some of the research directions suggested by Holt et al, 2002. It was important to discover prior to the instructional programme who the learners were in respect of their previous experience of hockey. This not only included playing experience but their understanding of what hockey might feel like to play. Reproducing that expectation of

what hockey might feel like to play was considered to be an important factor in providing students with an enjoyable learning experience. Thorpe (1992, cited in Holt et al, 2002) suggested that a TGfU approach to game instruction had the potential to “capitalise on affiliation, i.e., social interaction, social reassurance and making friends” (p167). This study sought to discover, before and after the instructional period, information on aspects of team affiliation related to games instruction such as whether the students thought they could contribute to the performance of their team. These questions were addressed in Stage 1 of the investigation.

Situated Learning: Learner centred

While hockey does not get extensive media coverage in New Zealand, internationals between New Zealand and visiting teams and National League finals are frequently televised on ‘free to air’ national network television channels. Hence there was an expectation that the students in the programme might have seen some elite level hockey. Those that had witnessed the game would therefore bring to the programme of instruction; expectations of what Kirk and MacPhail (2002) refer to as, 'legitimate peripheral participation' and 'situated performance.' In this study it was discovered that 60% of the students had seen hockey played either on television or in live formal match conditions. Trying to then ensure that novices experienced authentic learning experiences as they related to the feel of hockey was achieved through the use of the TGfU introductory hockey programme *Stick2Hockey* (Slade, 2003).² Within the context of teaching in this project it was anticipated that the structure of the *Stick2hockey* programme would provide a physical playing sensation that matched the learners situated learning and other peripherally experienced declarative knowledge of the game.

Stick2Hockey and the Kirk and MacPhail (2002) TGfU model.

The *Stick2hockey* (Slade, 2003) programme provides a structure for hockey instruction that balances the need to provide an authentic socially constructed learning

² The author has previously argued, Second International TGfU conference, (Slade, 2003, Melbourne, published proceedings) that this programme, *Stick2hockey* (Slade, 2003) does conform to the Kirk and MacPhail (2002) rethought model of TGfU.

experience in hockey while recognising individual learning needs. For example, the very first instruction in the *Stick2hockey* programme takes place within a team environment where qualities of teamwork and cooperation are emphasised. However, technique development also takes place at an individual level. This is achieved through the specific drills and game experiences built into the *Stick2hockey* programme. For example, the structure of the final game in *Stick2Hockey* allows for individuals to play the game either incorporating specific hockey skills or maintaining the generic fundamental movement skills employed in the opening games. This enables the learners to dictate their own pace in the application of techniques. This structure allows for the sometimes-huge discrepancy of ability that one finds in the school physical education class environment. The structure allows the expert and the novice to play a game where domain specific procedural knowledge does not have to discriminate between their ability to play, have fun and apply tactics and strategies within the game.

In developing the game concept of the Kirk and MacPhail model of TGfU, the modified introductory *Stick2hockey* games, *Roll-a-ball* and *Stick2it* provided a context that conveyed to the learners the concept, form, structure and related tactics and strategies of hockey. Kirk and MacPhail note that helping the learner make such connections is one of the key outcomes for teachers and coaches hoping to provide authentic game learning experiences. In addition to making those connections, the players received cues (see Fig 1) from the instructors on other components of declarative hockey knowledge associated with the rules of restarts, penalties and safety. A shared understanding of the rules of a game is fundamental to having players play a game against an opponent.

Affective domain and novices self-esteem.

Instruction of games and affected outcomes in physical education contexts has not always been viewed positively. Indeed Light (2003) and Light and Georgakis (2005) document interviews from teacher trainees reflecting on their school physical education experiences in a negative light. Similarly Williams, (1992, 1994 and 1996) in oft-quoted articles on affective outcomes in physical education, thought aspects of game instruction in physical education so poor that he referred to them as the physical

educators 'hall of shame.' Consequently, within this study, it was thought that a measure of the success of the introduction to the game of hockey in terms of affective outcomes might be observed within the players socially constructed perceptions of whether or not they thought they would enjoy playing the game. It was also hypothesised that such measures of enjoyment post the instruction might indicate whether they thought the game felt as they anticipated it would. Another measure of enjoyment would be in relation to whether or not they thought they would be able to contribute to the performance of their team in either their understanding of the rules and tactics of the game or through their actual playing ability. These questions all related to Thorpe's (1992) and Holt et al's (2002) perception of the need to place the learner at the centre of research in TGfU and to discover whether a TGfU approach to game instruction promoted such affective domain outcomes.

Methodology:

The three-stage project

The project grew out of a teaching practice requirement for second year secondary school physical education teacher trainees at Massey University New Zealand, to be familiar with the theory and practice of the TGfU methodology. The author, who lectured the class, instructed the students in the TGfU methodology and supervised the micro teaching experience. The twenty-eight teacher trainees had access to one local Intermediate³ school that provided two intact homogenous classes to receive instruction in the introductory TGfU hockey programme.

The project was conducted in three stages. Stage 1 required students from the two composite years 7 & 8 classes (ages 11 - 13, N = 58) to complete a survey. The survey established their previous hockey playing experience, knowledge of rules (four questions), tactics (seven questions) and perceptions of their likely enjoyment (self-esteem related) of playing hockey (four questions). The 60% of students who had either played or seen hockey played were also asked to say what they thought hockey should 'feel' like to play. This last task was achieved through students selecting from

³ New Zealand Intermediate schools are the equivalent of a senior primary / junior secondary school. They are coeducational and cover two years of schooling, Years 7 and 8 – ages 11 – 13 years. Students go to secondary school after Intermediate school.

alternative groups of adjectives words that might describe their perceptions of what hockey might feel like to play.

Stage 2 consisted of six groups of students receiving instruction over two weeks from the trainee teachers (also in groups) using the *Stick2Hockey* TGfU hockey programme and playing a mini-tournament. To reinforce and develop the players shared understanding of the rules and other components of declarative hockey knowledge, the teachers used breaks in games, e.g., ball out, to question students on rules related to restarts in hockey.

Instruction also utilized two of *Stick2Hockey's* generic tactical games that teach zone-defence and outlet-passing concepts. Teachers observing the correct transfer of such tactics back in the hockey games were required to stop the games and quiz the students as to why they had just used that tactic. This was done to reflect the TGfU constructivist instruction philosophy of ensuring that tactics forced on players through the configuration of the TGfU games were registered at conscious levels and to positively reinforce good-play.

Stage 3, completed after the practical instruction, required the students to again complete the Stage 1 survey questionnaire in order to measure any changes brought about by the instruction given at Stage 2.

Results and discussion

Playing history and declarative knowledge on rules

The Stage 1 pre-programme survey revealed that 80% of the students were novices in hockey. Only 20% of the students described themselves as either having played or were currently playing hockey in club or school teams. Consequently the on average 60% correct response to the rule questions relating to starting and restarts in hockey, for example, the ball has gone out or after a goal has been scored and player positions, was considered to be quite high.

Stage 2 of the investigation had required that this knowledge of hockey be taught to students within the contexts of the games. The teachers were instructed that they

should seize opportunities to teach or reinforce content knowledge about ‘restarts in hockey’ by reminding students, for example, that after a goal has been scored in hockey the restart takes place in the middle of the field at half way. This type of direct instruction following goals and also through asking appropriate questions of students in relation to these rules resulted in an average score across these questions on the same test in the Stage 3 post programme survey, of an 85% correct response.

Declarative tactical and strategic knowledge

Tactical knowledge in team invasion games can be quite generic hence there was an expectation that students might score well on the Stage 1 pre-programme questions. The seven questions covered concepts such as attacking and defensive tactics, when to keep possession, ideas about marking players, how to receive passes and spatial awareness questions. For example two questions asked of the students were:

Q After you pass the ball to a team-mate you should:

- (a) Stand still and watch to see if they receive the ball.
- (b) Call out to them and encourage them to get to your pass.
- (c) Move to a new supporting space on the field in case your teammate wants to pass the ball back to you.

Q When your team has the ball a good tactic is to

- (a) Always go forwards towards the opponent’s goal.
- (b) Try to go forward but sometimes use back or side passes if it is difficult to go forward.
- (c) Always pass the ball forward because one of your players might get the ball and score a goal.

Stage 1 pre programme results on the tactical and strategic questions produced on average, across all tactical questions, a 62% correct response.

The *Stick2hockey* (Slade, 2003) programme also incorporates generic tactical games. Two used in this project taught tactical concepts of zone defence, outlet passing, man-

to-man marking, and dodging into space to receive passes. After teaching the student's these specific games and back in the hockey games the teachers were told to quiz the students on their use of these tactics at what were deemed teaching moments.

The Stage 3 post instruction programme re-test of student declarative tactical knowledge produced an average improvement, across all tactical questions, from 62% to 75%. The results suggest that adopting the Kirk and MacPhail (2002) reformulated model did improve participants' declarative knowledge of hockey rules and tactics.

Affective domain

Games and teams do not of themselves always lead to positive student experiences. For example, if you do not feel you are contributing to the team performance it is hard to feel part of the team. Hence a measure of the effectiveness of the TGfU instruction in this project would be the extent to which instruction promoted qualities of team affiliation and game enjoyment.

The Stage 1 survey questions in the affective domain posed questions such as – 'Do you think you will enjoy playing hockey?' or 'Do you think you will be able to contribute to your teams performance?' On the question of do you think you will enjoy playing hockey 31% of the students were sure that they would **not enjoy** the game; 48% were unsure, while 11% claimed they thought they would enjoy/love playing the games.

The Stage 3 post programme survey revealed that only one student claimed not to have enjoyed the games while a combined 98% stated that hockey was either 'okay to play (51%) or that 'they loved it!' (47%).

The question regarding whether students felt they could or did contribute to their team's performance was considered to be very important in terms of their feelings of satisfaction with the programme. The Stage 1 survey revealed that only 12% of students were positive that they would make a positive contribution to their team's performance while 52% were certain that they would not contribute and 36% were unsure.

By Stage 3, post the programme of instruction, only 7% of the students felt they did not make a positive contribution to their team performance while 48% thought they probably did and 43% were sure they contributed positively. Having 93% of all students feeling that they did or probably did contribute positively to their team's performance suggests a high level of student satisfaction with the learning experience.

Providing an authentic initial game experience.

The final question within the survey related to Holt et al's (2002) suggestion that success in retaining student interest in learning a sport or involvement in physical activity could be related to the nature of game instruction a student receives. At Stage 1, students who had seen hockey played were asked what they believed hockey should feel like to play? Choosing from lists of adjectives that might describe the anticipated feel of the game, 100% of students responding to that question said hockey should feel like a fast, passing game that involved running and dodging, keeping possession of the ball and scoring goals. In Stage 3, all students were asked to respond to that question. Encouragingly 100% felt that their experience of hockey through this introduction had involved them in a fast paced passing game, requiring dodging, running and goal scoring. That is, the game felt as they imagined it would feel!

The data suggests that the adoption of the TGfU methodology of hockey instruction resulted in a positive situated learning experience with students stating that the game felt as they anticipated it would feel. Even for those in the study for whom hockey was a new sport their experience of it reflected the components of speed, running and passing that elite level hockey players experience. The study also showing that in general the players felt their self esteem relative to beliefs of enjoyment, playing ability and the ability to make a positive contribution to their team's performance had improved.

Summary of survey results: Stages 1 and 3

Category	Stage 1: Pre TGfU instruction survey	Stage 3: Survey post TGfU <i>Stick2Hockey</i> instruction programme
Playing status	80% novice	
Knowledge of basic restart rules of field hockey.	60% correct response.	85% correct response.
Tactical and strategic questions.	62% correct response.	75% correct response.
Self-esteem questions		
Do you think you will enjoy playing hockey?	21% think they will.	98% stated they did.
Do you think you will make a positive contribution to your team's performance?	12% think they will.	91% thought they did.
What should hockey feel like to play?	Of the 60% of students who had seen hockey played, all anticipated that hockey would be a fast, running, dodging, passing and goal scoring game.	
What did hockey feel like to play?		100% of students identified that hockey had felt like a fast, running, dodging, passing and goal scoring game.

Table 1

Gender bias:

Research by Chepyator-Thomson and Ennis (1997) and Siedentop and Tannehill, (2000) suggests gender bias is nearly always present in physical education classes. In such classes it is claimed that girls frequently undervalue their contribution and suffer from stereotypical expectations of their likely performance. Typically this manifests itself in girls not overly exerting themselves or being overtly vigorous. Anecdotally, teachers of physical education can frequently be heard to comment that girls do not always participate as fully as boys. In light of such research and anecdotal observations an analysis of the survey data in relation to the affective domain questions was undertaken that focused on female responses.

Female responses to affective domain questions

There were 28 girls across the two classes. Their responses to perceptions of knowledge of rules and tactics at Stage 1 of the investigation indicated that approximately 21% and 14% respectively thought they knew some or most of the rules and tactics of hockey. Stage 3, post the programme of instruction, their respective perceptions were that 93% and 90% thought they knew some or most of the rules and tactics of hockey. This post instruction programme positive self-image relative to these aspects of declarative knowledge was considered a very positive response given the actual objective results on these questions (See Table 1). Given these results it could be argued that these female students might approach further hockey games with a degree of confidence; a confidence that might manifest itself in assertive participation in game situations, for example, calling for a pass or in their reactions to rule infringements.

In terms of making a positive contribution to their team, before the Stage 2 programme of instruction, 39% of the girls were certain that they **would not** make a positive contribution to their team performance. Stage 3 responses indicate that only 2 female students (7%) felt they were certain that they **had not** made a positive contribution to their team's performance. For the teacher of physical education one of the most commonly heard comments from students not wanting to participate in an activity is they cannot do it or they cannot play the game. Physical education teachers might recognise the following comment though noting it as one not only confined to female students: "I'm useless - no-one wants me on their team!" Consequently,

having 93% of the female students positively affirm that they did contribute to their team performance is an extremely positive outcome for the project.

The final question sought female responses to whether they thought they would (Stage 1) or did (Stage 3) enjoy the hockey programme. Their responses were considered to be an important motivational indicator for likely perseverance in specifically continuing with hockey or generally finding enjoyment from vigorous physical activity. In Stage 1, 86% of the female students were either equivocal or sure that they would **not** enjoy playing hockey. In Stage 3, post the instruction, 100% stated they either probably or definitely **did** enjoy playing hockey.

Summary of female student responses to pre and post instruction survey questions

	Stage 1				Stage 3		
Survey question category	No -little	Some	Most		No-little	Some	Most
Knowledge of rules	68%	11%	21%		7%	54%	39%
Knowledge of tactics	58%	28%	14%		3%	54%	36%
	No way	Not sure	Yes		No way	Probably	Yes
Make a positive contribution to your team performance	39%	32%	29%		7%	50%	43%
Do you think you will? - Did you? - enjoy the hockey programme	36%	50%	14%		0%	50%	50%

Table 2

Gender aspects of the TGfU approach

In seeking to explain these positive outcomes for the female students the author argues that the TGfU methodology is an important variable. Research by Light (2003) and Light and Georgakis (2005) that taught undergraduate primary school teachers games through a TGfU and Games Sense approach, provides valuable insights into female perspectives on traditional game teaching strategies verses the TGfU approach. Female respondents interviewed for those papers stated that they enjoyed

the affiliation aspects of the game approach. They thought the modified game structure of the TGfU approach meant that any lack of technical ability was not exposed and they liked the inclusive nature of the games that involved everyone and not just the elite (Light and Georgakis, 2005, p72).

One student noted that learning games incorporating a tactical approach meant that although she was still not especially “great at throwing or catching..she could still contribute..strategically in defence or in attack.” The student continues, “ learning basketball this way gave me a feeling of achievement and satisfaction that I have never experienced in sports” (Light, 2003, p 98).

Another student from Light’s (2003) study notes that in relation to learning games at school:

“I never knew what was going on or what I was supposed to do. I had no idea but here with the games we did I actually understood what was going on and felt like I actually contributed to the team, and that was enjoyable for a change.” (Light, 2003, p 99)

The Stage 1 data from this project also clearly indicates that the majority of female students thought that they had very little knowledge of the rules or tactics (what goes on) of hockey, and they did not anticipate enjoying the lessons. By Stage 3 of the project, the majority indicated that they knew the rules and tactics (what goes on) of hockey and they were able to make a positive contribution to their team. In summary therefore, they appeared to have enjoyed the activity for the same reasons noted in Light’s (2003) and Light and Georgakis’s (2005) studies.

Gender bias

The author does not contend that this was a major investigation into gender bias in physical education classes. Nor should it be suggested that TGfU is a ‘silver-bullet’ in the face of perceived gender bias in game instruction in physical education classes. The programme was relatively short. It had excitement value in that it was novel and having teacher trainees instruct the teams was not the usual scenario of one teacher to a class of 25-30 students. Indeed, many of the other factors associated with gender bias and lesson delivery, for example, language, were not addressed. However, the

Stage 3 post instruction survey in this project revealed extremely positive results in terms of improved female students measures of self-esteem relative to the game instruction. The results indicated that the vast majority of girls felt confident in their understanding of basic rules and tactics. Importantly they felt they experienced a game in the manner that they anticipated it would feel; they enjoyed the experience and stated (93%) that they probably or did make a positive contribution to their team.

Conclusion

This study suggests that TGfU is effective in developing students' declarative knowledge of hockey. The exploratory nature of the project highlights the need for further work on the broader dimensions of game instruction that flow from the recognition that sport is a socially constructed experience. In this context, the results reinforce the importance of Holt et al's (2002) challenge that researchers "move beyond the technical/tactical impasse, and in particular consider the motivational and affective implications arising from the way in which teachers deliver games in physical education" (p174).

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