

**A Preliminary Investigation into the Coaching Behaviours
of English Independent School Team Sport Coaches**

By

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Abstract

The purpose of this study is to analyse the coaching behaviours of experienced English independent school team sport coaches within the practice environment. The Arizona State University Observation Instrument (ASUOI) was revised using a process similar to that used by Brewer and Jones (2002), which was designed to improve the validity and reliability of the observation instrument utilised. This process resulted in an adapted set of behaviour categories being used in the observation of three independent school coaches. The modified observational instrument is deemed able to record the unique behaviours of three independent school coaches within a specific school environment.

Time sampled event recording was used to collect the data, with each coach being observed eight times during the season (term). Verbal instruction (pre-instruction, learning intention, feedback and feedforward) passed on by coach to athlete accounted for (42.50%) of all the recorded behavioural intervals. Questioning (11.17%), modelling (8.09%) and observation (11.79%) were also used regularly by the coaches. The overall trends and variation in coaching behaviours between the coaches are discussed in relation to existing sports coaching, sociological and educational research.

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Chapter 1: INTRODUCTION

1.1 Introduction to the chapter

The purpose of this chapter is to outline the background information that justifies the need for the present study. It will provide an insight into the coaching environment being researched and discuss briefly the research question that is being asked. It will introduce the methodology being employed and provide an overview of how the thesis is laid out.

1.2 The coaching environment

The research undertaken involved observing the coaching behaviours of three independent preparatory (prep) school first team coaches. The Rydale (Pseudonym) Junior School is a member of the Independent Association of Prep Schools (IAPS). IAPS represents the headteachers of over 600 prep schools, to become a member of the IAPS organisation each school is accredited against strict membership standards. IAPS promotes and defends the prep school sector as well as providing what they describe as a kite mark of excellence in education (IAPS 2010). IAPS state “what we (the member schools) all have in common is a commitment to all round excellence in education. Though each school has its own ethos they are all committed to the pursuit of excellence in education” (IAPS 2010). There is also a clear indication IAPS celebrate the freedom it has from the government as it states in their website “we share a strong conviction that excellence across all these areas depends on the schools being free and unfettered by government” (IAPS 2010). This somewhat one-sided view from IAPS does, however, give some insight into the nature of Rydale school and the coaching environment in which this research was carried out.

The coaching of sport in IAPS schools has evolved over the years. In the early nineteenth century games were arranged by boys in the large rural 'Public Schools' such as Eton or Winchester; games were unruly and the masters had no interest in them outside of the classroom. In the space of 60 years sport had changed into a pursuit that was celebrated by Public School headmasters: by the early twentieth century team games such as rugby, football and cricket were seen as helping produce moral Christian gentlemen who celebrated sportsmanship and integrity. Above all they were believed to prepare the young men for their future careers (Norridge 2009). There was also more involvement by masters as the teachers became more aware of the benefits sport might have on their pupils. The position of 'games sessions' within the school day of independent schools remains largely intact today. Physical education was included in the 1944 Educational Act (Norridge 2009) due to its educational value. P.E. today is a foundation subject within the national curriculum and teaches skills in a variety of activities. It also helps explain the health benefits of taking part in physical activities as well as topics related to anatomy. The coaching of team games such as cricket or netball in the maintained sector tends to take place after school hours with fixtures against local schools (Beashel and Taylor 1997). Within IAPS schools games' sessions are generally provided in addition to weekly P.E. lessons and teams sports are coached separately.

Today in the IAPS school sector the coaching of team games such as rugby, football, netball, hockey and cricket remains a major part of a schools sporting provision. The IAPS sector is an under researched area and the researcher was unable to find reliable statistics or hard evidence which clearly indicated the nature of games provision within the IAPS sector. A study of independent school guides (Independent Schools 2011) and a look at a number of IAPS school websites (e.g. Brighton College 2011; Felsted 2011; Colet Court 2011) does however provide some insight into what is taking place within the schools. The majority of

schools run sports and games competitively, with inter-house competitions and numerous fixtures with other school. There may be pressure to play the team sport of the term – perhaps rugby/netball (autumn), hockey (spring) and cricket/tennis (summer). The independent school guide states “Most schools have a hard core of dedicated sports/games enthusiasts on the staff (some Heads are fanatics) who are qualified to coach, referee and umpire and who are prepared to devote an enormous amount of time and effort to their chosen activity.” (Independent Schools Guide 2011). This understanding of the unique environment found within IAPS schools is important as it provides an awareness of the way games is coached within IAPS schools.

1.3 Introduction to the research question and methodology

The systematic observation of sport coaches has taken place since 1976 when John Wooden, a highly successful, top-level basketball coach was observed in an attempt to understand the coaching behaviours of experts. Since then coaches of different sports, levels and eras have been observed using this method (e.g. Potrac et al. 2007; Bloom et al. 1999; Lacy and Darst 1985). Systematic observation allows the researcher to carefully observe the pedagogical styles utilised by coaching practitioners. Gilbert and Trudel (2004) suggest that there is a need in coaching science for more descriptive research, the accumulation of knowledge and a more basic understanding of sports coaching. They suggest that descriptive research such as systematic observation provides the foundation for higher levels of research.

Despite the continued popularity of IAPS schools, 57% of parents in a Mori Poll in 2008 (The Times 2008) indicated that they would send their children to private school if they could afford it, and the amount of time and money spent on sporting facilities and provision very

little is known about the unique sports coaching environment found within IAPS schools. In the last three Olympic Games 50% of those who won medals for Great Britain were independently educated. It is estimated that a third of all those competing in the 2012 London Olympics will be independently educated (Laing 2010). These are significant figures when you consider that only 7% of children attend independent schools in the UK (Independent Schools 2010). There is also increased media coverage regarding the ‘golden age of learning’ and the benefits of providing excellent coaching for 6- 12 year olds. The IAPS school sector provides coaching to children within the golden age of coaching; can anything be learnt about the coaching of sport from educationalists within the independent school sector?

An increased understanding of the coaching found within IAPS schools may therefore provide opportunity for collaboration with national governing bodies, state school sport and coaching within clubs. The IAPS sector could provide some answers regarding the most effective and efficient way to coach children.

This thesis therefore attempts to provide some baseline information regarding the coaching behaviours of IAPS school coaches as well as providing some cautionary interpretation of the findings. These interpretations take into account the possible effect the school culture had on issues related to power (Potrac et al 2002) and playing a role (Jones 2004). Therefore a systematic observation instrument is developed and utilised to generate quantitative data regarding the coaching behaviours of three coaches within the IAPS school sector. The work of Brewer and Jones (2002) is used to guide a process that formulates a rigorous instrument for systematically observing three coaches within an IAPS school.

1.4 An overview of the thesis

This initial chapter introduces the purpose of the thesis and summarises its focus. Chapter 2 reviews the relevant literature for this subject area and includes references to the key theoretical frameworks that have shaped the direction of this thesis. Chapter 3 provides a rationale for the research methods employed and documents clearly each phase of the research process. Chapter 4 presents the data collected from the systematic observation of three team coaches. Chapter 5 provides discussion of the findings, linking them to recent research and relevant theoretical frameworks. The final chapter draws conclusions on the study, addresses key points of debate, and highlights the future for systematic observations as well as outlining recommendations for future research.

1.5 Chapter conclusion

As justification for the present study, this chapter has outlined the background information pertinent to the field of research. It has provided a brief synopsis of some of the relevant issues in this field and introduced the research questions around which the study is based. It has also introduced the methodology employed and provided an overview of the thesis structure. The next chapter will provide an overview of literature relevant to this study.

Chapter 2: **LITERATURE REVIEW**

2.1 Introduction to literature review

The purpose of the literature review is to provide a comprehensive summary of research related to the methodology (ASUOI systematic observation) and the methodologies' evolution. The author also reviews research related to the relationship of coaching to teaching and the close connection of current educational thinking to modern sports coaching.

2.2 Arizona University Systematic Observation Instrument

Systematic Observation has previously enjoyed popularity in the areas of anthropology and psychology (Darst et al. 1989); increasingly over recent decades this methodology has been used to identify and delineate pedagogical behaviours of a coach or teacher in the practice setting (Crossman 1985). Systematic Observation provides baseline data of actual (demonstrated in the coaching environment) coaching behaviours; it therefore provides a database of existing coaching behaviours.

Initial research (Tharp and Gallimore 1976; Williams 1978) using systematic observation resulted in a period of system design that had the aim of observing coaches in either competitive sports or physical education (Darst et al. 1989). There were two systems used during this time. The Coaching Behaviour Assessment System (CBAS; Smith et al. 1977) was initially used to examine the behaviours of little league baseball coaches during practices and games. The CBAS consists of 12 categories and is split into 2 major classes of coaches' behaviours: reactive and spontaneous. The former included the coaches' immediate

responses to the player or team mistakes, effort or misbehaviours. In the latter, the coaches' spontaneous behaviours were not in response to an observable preceding event; rather they dealt with either relevant or irrelevant behaviours exhibited during the game (Bloom et al. 1999). The consequent use (Smith and Smoll 1990; Smith, et al 1978; Smoll and Smith 1989) focused on the coach-athlete interaction as well as effective leadership.

The second systematic observation instrument devised during this time was the Arizona State University Observation Instrument (ASUOI), which is based on the 10-category system originally developed by Tharp and Gallimore (1976). This study produced numerical data relating to the coaching style of John Wooden, a successful basketball coach of the University of California. This study is commonly regarded as the forerunner to the ASUOI and was born out of the desire to find out about what successful or 'expert' coaches were doing within their applied setting (Gallimore and Tharp 2004). Williams (1978) employed a modified replication of the Tharp and Gallimore instrument. Williams (1978) compared the results of John Wooden with those of a successful high-school coach. Langsdorf (1979) cited in Lacy and Darst (1985; 257) further developed the observation instrument used in Tharp and Gallimore (1976) to observe the coaching behaviour of Frank Kush, who was the head American football coach at Arizona State University. Findings of this research showed the greatest percentage of behaviour for Kush occurred in the instruction category.

Lacy and Darst (1985) used an eleven category observational instrument, which was a modified version of Tharp and Gallimore (1976), to observe the coaching behaviours of 10 winning high-school head American football coaches. Their findings highlighted that praise was used twice as much as scold. The results also indicated that instruction was the dominant

behaviour used by successful coaches. The researchers suggested that the instruction category should be sub divided further into more specific behaviours. It was this debate which culminated in the 14 category system suggested by Lacy and Darst (1984) being used widely and it became known as the ASUOI. The instruction category used in Tharp and Gallimore (1976) and Lacy and Darst (1985) was divided into three; pre-instruction, concurrent instruction and post instruction. The ASUOI developed by Lacy and Darst (1984) has been used in recent research (e.g. Miller 1992, Brewer and Jones 2002, Potrac et al 2007). The 14 categories are listed in Table 1.

Table 1

Arizona State University Observation Instrument:

(Lacy and Darst 1984, 60)

Use of the first name:	Using the first name or nickname when speaking directly to a player: “Nice pass, Steve” or “Jonesy that was a poor tackle.”
Pre-instruction:	Initial information given to player(s) preceding the desired action to be executed. It explains how to execute a skill, play, strategy and so forth associated with the sport.
Concurrent instruction:	Cues or reminders given during the actual

	execution of the skill or play.
Post-instruction:	Correction, re-explanation, or instructional feedback given after the execution of the skill or play.
Questioning:	Any question to player(s) concerning strategies, techniques, assignments, and so forth associated with the sport, for example, “What is your role on defensive corners?” or “What is the correct technique for taking a throw-in?”
Physical assistance:	Physically moving the player’s body to the proper position or through the correct range of a motion of a skill, for example, guiding the player’s foot through the movement of a chipped pass in soccer.
Positive modelling:	A demonstration of the correct performance of a skill or playing technique.
Negative modelling:	A demonstration of the incorrect performance of a skill or playing technique.
Hustle:	Verbal statements intended to intensify the efforts of the player(s), for example, “Run it out, run it out” or “Push yourself, push yourself”.
Praise:	Verbal or non-verbal compliments, statements, or signs of acceptance, for

	example, “Great goal” or a thumbs-up sign.
Scold:	Verbal or non-verbal behaviours of displeasure, for example, “That was a terrible effort” or scowling.
Management:	Verbal or non-verbal behaviours related to the organisational details of practice sessions not referring to strategies or fundamentals of the sport, for example, setting out cones or “Get into teams of five”.
Silence:	Periods of time when the subject is not talking, for example, when listening to a player, or monitoring activities.
Other:	Any behaviour that cannot be seen or heard, or does not fit into the above categories, for example, checking injuries, joking with players, being absent from the practice setting, or talking with bystanders.

Since 1984 the ASUOI has been used to observe coaches in a variety of sports such as football (Lacy 1989; Vangucci et al. 1998, Potrac et al 2002, Potrac et al 2007), American football (Lacy and Darst 1985; Claxton and Lacy 1986) and tennis (Claxton 1985, 1988). The discussions generated by these quantitative results have been based around the extensive use of instruction by coaches as well as praise/scold ratios. Surprisingly, there is little mention of modelling and Claxton (1988) mentions the need to focus more analyse on the use of questioning within coaching. Recently, Brewer and Jones (2002) have criticised the

generic nature of systematic observation, they indicate that the systematic observation instruments have not traditionally been developed with specific sporting environments in mind. It seems that researchers using the ASUOI have not been keen to revise or adapt the observation instrument. This is perhaps surprising considering Lacy and Darst's (1984) assertion that the method was created with flexibility in mind and they invited researchers to "continue to modify and refine the instrument to answer new questions about the teaching/learning process" (Lacy and Darst 1984, 65). No mention was made by any of these researchers about the need for more sport or environment-specific systematic observation instrumentation. It was Brewer and Jones (2002) who were the first to call for significant alterations to the behaviour categories of the ASUOI. Brewer and Jones (2002) argue that historically the validity of the behaviour categories (content validity) is assumed by researchers (e.g. Claxton 1985; Lacy 1989; Lacy and Goldston 1990). Brewer and Jones (2002) proposed a system for the observation of elite rugby union coaches, which can be used to improve the validity and reliability of the behaviour categories used within the ASUOI.

More recently researchers (e.g. Potrac 2002; Potrac et al. 2007) have explained in detail the reason they did not change the behaviour categories listed in Lacy and Darst (1984). Potrac et al. (2007) used the recommendations of Brewer and Jones (2002) and invited five top-level football coaches to provide written feedback about the behaviour categories of the ASUOI. In Potrac et al. (2007) all five coaches deemed the original categories to be adequately comprehensive and reflective of coaching behaviours in top-level football.

Van der Mars (1989) highlighted that to generate a deeper understanding of coaches the quantitative data obtained from systematic observation instrumentation should be analysed

“in light of the situations in which they were observed” (Van der Mars 1989, 9). This desire to uncover more about why coaches coach in a specific way, or how they adapt to the coaching environment they are faced with is discussed by Gallimore and Tharp (2004). Their reanalysis of the systematic observation of John Wooden is supportive of using qualitative research in addition to quantitative research such as systematic observation. Gallimore and Tharp (2004) propose that if it had used qualitative data then the quantitative data would have been better understood and analysed. Potrac et al. (2002) are also adamant that the use of interview when scrutinising a coach’s behaviour is vital to the understanding of why coaches behave in a particular way. Potrac et al. (2002) utilised interpretive interviews to uncover the attitudes, beliefs and values of a professional football coach’s instructional behaviour within the practice environment. The interviews they used were semi-structured in nature, thus allowing for the full and systematic collection of data, yet providing enough freedom for the coach to explore other areas. A mixed method approach to sports’ coaching research is seemingly gaining credence and this approach may well be how the ASUOI is used in the future in an attempt to gain a more thorough understanding of coaching behaviour.

The shortcomings of systematic observation in a coaching environment are addressed above. The descriptive nature of the methodology means that questions regarding why a coach delivers in a certain way are not answered in any thorough or reliable way. The mixed method approach by Potrac (2002) is to be applauded as a way of gaining a better understanding of sports coach behaviour within the applied setting. However when researching an area which has had little attention then the use of systematic observation can be justified as providing a base on which more detailed qualitative research can be added. It is arguably vitally important, when researching a unique coaching environment which has seemingly had no systematic observational research before, to create behaviour categories

which are representative of the sector you are observing. If this takes place then the use of systematic observation within the IAPS sector is justified and data in other sectors such as state schools, youth club sport and adult professional sport can be compared.

2.3 Coaching as teaching

2.3.1 The traditional divide

Despite common ancestry, in terms of improving the performance of learners, coaching and teaching have traditionally been seen as separate entities (Jones 2006). This could be because there is a higher regard placed on sport than education in our society (Bergmann-Drewe 2000). Jones (2006) suggests that there has been a tendency to view coaching as a totally separate discipline to teaching. He suggests that coaching has become associated with training, due to the vast amount of discourse and research related to the disciplines of biomechanics, psychology and physiology. Gilbert and Trudel (2004) suggest other plausible reasons such as the absence of a definitive consensus of what the job ought to entail as well as the limited interpretation within coaching literature of the term ‘teaching’. Prain and Hickey (1995, 79) state that coaching is a discourse that “privileges factual knowledge over interpretation”. Lyle (2002) argues that the only genuine teaching found in coaching is confined to participation and recreation coaches. He suggests that teaching is largely absent from performance or higher level competitive sport. Lyle is doubtful whether there is enough in common between coaches of participation or recreation levels and coaches of performance or elite coaches to warrant one form of professional body. This distinction between the varying levels may have the consequence of providing limited appreciation of pedagogy or education as the essence of sports coaching (Jones 2006). The desire by some to distinguish

coaching from teaching could be perceived as having a negative effect on coaching. This maybe because educators have shied away from coaching as they have not seen it as their territory whereas as coaches have not looked to educational theory to inform their practice (Jones 2006).

2.3.2 The reconceptualisation of sports coaching

In recent years the view that coaching is autonomous to teaching has been criticised (e.g. Jones 2006; Penney 2006; Roberts 2009) coaching and teaching could be viewed as more similar than different and, furthermore, in need of closer connection. Jones (2006) suggests that historically teaching in coaching has been related to direct instruction and maybe didactic in nature. Penney (2006) expresses the view that a coach should be increasingly interested in learning and the various tools available that facilitate and improve learning for the athlete. Sharing the responsibility of learning and devolving power to the learner, and of making the learner more self-aware, thus allowing them to make informed decisions and focus on their individual growth, is discussed. The position and responsibility of a coach is compared to that of a teacher. Penney's (2006) desire to compare coaching to teaching goes as far as to suggest that coaches, like many teachers, should be involved in continual professional development. She suggests that many coaches are already involved in ongoing learning, evaluation and reflection. Coaches, she adds, could also be centrally involved in the professional development of others, especially teachers who require the support to coach children within a school setting.

2.3.3 Coach education

Undoubtedly, coach education syllabi have changed significantly over recent years. There has been an emphasis on the ‘how’ to coach as well as the ‘what’ to coach. It could be argued that this change is the practical result of recent research that aligns coaching with education. Thirty-one sports are now endorsed by Sports Coach UK using the UK Coaching Certificate Qualification Endorsement Criteria (Sports Coach UK 2009). The endorsement criteria outlines the minimum requirements that national governing body awards need to include in their various coaching awards. The awards must include in their syllabi a focus on coaching delivery. The ability to deliver a varied session that places the learner at the centre is central to the endorsement criteria. It is therefore perhaps justified to assume that coaches in a number of sports are now focusing more on the learner during their coaching session and are aiming to provide a varied and learning-rich coaching environment.

The focus on a more athlete centred less didactic style of coaching is at the heart of the teaching games for understanding instructional model (TGFU). TGFU was first introduced by Bunker and Thorpe (1982) as a means to conceptualise games teaching and learning. The central strategy for teaching/coaching using the TGFU approach is the use of questioning to stimulate thinking about the game instead of using more direct teaching/coaching approaches. Games are stopped at regular intervals and participants challenged to reflect on their participation in order to mature the play. This was a departure from the traditional approach to the teaching of games which was more focused on a direct style of coaching where the correct way to do a skill was taught before it was put into a game situation. . The skill was taught in isolation to the game (Australian Sports Commission 2011) and there was not a problem solving or guided discovery element in this style of teaching. The TGFU

instructional model has been used to guide NGB coaching awards as they move towards more athlete centred approach in sports such as cricket (Roberts) and rugby union (Reid 2003). This general move by governing bodies and coaching towards a TGFU model will perhaps have an impact on the coaching behaviours been observed. This new approach to coaching focuses more on questioning and selective feedback rather than a coach's instruction or use of demonstration. Naturally coaches will continue to deliver sessions which are suited to them, in fact in Cassidy et al (2009) it is suggested that in some ways this is desirable. They suggest that choosing which coaching method to use is not like selecting a recipe. Rather it maybe more beneficial for a coach to chose a method which is suited to them, one that they belief in. Cassidy et al (2009) indicate the importance of understanding the effect of a coaching method or style upon the pupil or athlete. Later in their conclusion they also summarise the difficulties of trying to change culture and perhaps trying to alter traditional methods too quickly.

Despite these changes to coach education and the adoption of TGFU principles Potrac and Cassidy (2006) suggest that coach education has a long way to go in this regard. They argue the major weaknesses of existing coach education provision in the UK are the failure to provide coaches with the opportunity to explore how their instruction looks to athletes, how athletes perceive what they are learning and how athletes learn content that is in some way foreign to them. They state that "the educational function and role of the coach has been largely ignored" (Potrac and Cassidy 2006, 40). Roberts (2009) takes the debate a step further and argues that it is now time for the coach education programmes to be jointly coordinated by experienced teachers or colleagues in higher education institutions. He states that if the coach education courses continue with inclusion of education concepts then it

would seem obvious to foster greater collaboration between higher educational institutes' teachers, teachers and national governing bodies. Higher educational institutions have been consulted at United Kingdom Coaching Certificate (UKCC) levels 4 and 5, where individual national governing bodies perceive their coach education teams have insufficient knowledge in specific areas. Roberts (2009) suggest that this could be extended to UKCC levels 2 and 3.

If coaching is changing and governing bodies are advocating a more athlete centred approach where teaching principles are seen as being important at all levels, then does this not further emphasise that there is a need to gain an understanding of how teachers are coaching within educational sectors such as IAPS schools. It is also paramount one feels that researchers gain a true and valid representation of what actually is happening on the ground in an applied setting.

2.4 Understanding sports coaching

2.4.1 Role theory and Power

Bandurra (1977) suggest that humans would rather copy an old role rather than risk creating a new one. This theory may help our understanding of why coaches coach in the way they do. Certainly role models seem to be a major influence on the coaching behaviours of coaches of all levels. As Kekale (1998) suggests they provide early guidance regarding coaches' professional practice. The experiences of the past may affect the behaviour of the coaches but it is also suggested that the perception of the students/athletes may also have the effect of influencing the behaviour of a teacher/coach (Shaw 1981; Lombardo 1987). Athletes/students, can have an expectation that a coach will be didactic and instructional in style; and that other pedagogy such as critical questioning or self-discovery can be perceived as weak or even incompetent (Jones 2004). In their observations of four professional football

coaches, Potrac et al. (2007) suggest that the large amount of instruction used by the coaches could reflect their beliefs regarding effective coaching behaviour, which is directly influenced by their playing experiences, role models, and other socialising factors.

The position of power that a coach possesses is discussed in detail by Potrac (2004). He explores the differing forms of coaches' power from the basis of the refined and extended version (Raven 1965, 1992) of French and Raven's (1959) typology of social power in human relations. The six bases of social power are: legitimate, expert, informational, referent, reward and coercive power. In summary these bases of power can be defined as follows: legitimate power is based on the perception that someone has the right to prescribe behaviour due to election or appointment to a position of responsibility. Coercive power is the perceived ability to punish those who do not conform to your ideas or demands. Reward power is based on the ability to give positive consequences and remove negative ones. Referent power is the desire of others to please the person who possesses power. Expert power is based on having distinctive knowledge, expertness, ability or skills, and informational power is based on controlling the information needed by others in order to reach an important goal (Value Based Management 2010).

Potrac (2004) attempts to relate the six bases of power to sports coaching, Bell (1989, 177) cited in Potrac et al (2004; 154) states that "the greater your perceived knowledge and competence, the greater your power". Certainly, the top-level football coach in Potrac et al. (2002) was keen to maintain respect through his use of demonstration. Potrac (2004) adds to this discussion by indicating that it is not enough, if power is to be maintained, for a coach to simply possess a detailed knowledge, but he or she must convey knowledge in a manner that the athletes deem appropriate. Informational power is also related to the field of coaching; it

is suggested that this power is maintained and increased by the strength of argument that is presented by the coach. In other words the athlete trusts that the coach will be able to assist him or her to get better. They provide an environment that promotes purposeful practice. Therefore there is an understanding of not only what, but why the athletes are being coached in a particular skill or tactic (Potrac 2004).

The personal form of reward power is discussed in relation to sports coaching: the theory is that personal approval from someone we like is a powerful form of reward power. Praise is provided but only if it is genuinely earned (Potrac 2004). Coercive power is generally seen as negative and something that can alienate, and the suggestion from the top-level coaches interviewed by Potrac (2004) was that if problems were sorted out in a supportive framework then the athletes would be more likely to respect the coach. In a school or youth coaching environment this may be slightly different, as McCuskey and Richmond (1988) suggest that the success of coercive power is based on a student's perception of how likely it is that a punishment will be exacted. However, if strong peer-group pressure against a teacher exists then the coercive power of a teacher/coach can be eroded. McCuskey and Richmond (1988) also describe referent power in relation to education. Referent power is based on the less powerful person's (student/athlete) desire to please the more powerful person (teacher/coach). The stronger the student's/athlete's attraction to the teacher/coach, the stronger the teacher's/coach's referent power. It is suggested by Potrac (2004) that this referent power can be developed through creating an impression of genuine caring about the well-being of each individual. However, referent power is also described as charisma and something that only a lucky few are born with (Potrac 2004).

There has been research regarding the effect of power and role on professional or elite coaches (Potrac et al 2002; Potrac et al 2007) but there is a perhaps a need to understand the effect of power on coaching delivery in schools where teachers also coach games on a regular basis. How does reward power or expert power impact on delivery? There seemingly is a need to provide more research on the effect of power and role in different situations as well as discussing when and why certain styles of coaching such as TGFU or guided discovery techniques are appropriate in different learning environments. The impact of role and power also brings into focus the impact every differing coaching environment has on a coach and his/her delivery (Potrac et al 2002).

2.5 Techniques used in teaching and coaching

2.5.1 Introduction to Assessment for Learning

The similarities between coaching and teaching have already been discussed. In the next section a summary of up to date teaching strategies are provided and suggestions to how these are related to the field of sports coaching. Paul Black and Dylan Wiliam likened the classroom to a ‘black box’ (Black and Wiliam 1998a). Government initiatives focused on the box’s input and output, but not what went on inside it. Since then teaching strategies linked to the premise of assessment for learning as opposed to assessment of learning have been discussed and practice within the field of education. The assessment reform group defines assessment for learning as follows: “Assessment for Learning is a natural, integral and essential part of effective learning and teaching and is a key element of personalised learning. Teachers and children continually reflect on how learning is progressing, see where improvements can be made and identify the next steps to take.” (DCSF 2009).

2.5.2 Learning intentions/success criteria/ modelling

Sadler (1989) puts success criteria into an educational perspective when he states that for learning to be meaningful, learners should come to understand the small steps (criteria for success) and the expected outcome (learning intentions) that the teacher already has in mind. This could refer to the success criteria and learning intentions for one lesson and to the curriculum aims and goals over a period of time. The clear use of learning objectives and success criteria by teachers are also the tools that enable pupils to exercise power over their own learning (Clarke 2008). These goals are the rationale for the learner so that they can develop independent means to attain a learning objective and through the success criteria have a sense of whether they are going well or not. The generation and use of these goals is far from common sense. Shrouding a shared piece of knowledge between a pupil and a teacher in curriculum-based vocabulary does not enable the pupil to access the information clearly. It is important that the pupils have a say in the language and, indeed, in the success criteria themselves (Hattie 2009). One way to share learning intentions with pupils is to use model examples, giving concrete examples that pupils can use before, during and after their own work. A single model may not be enough it may be suitable to provide a number to provide comparisons and enable the learners to view the differences between an excellent, competent and poor example (Williams, 2009).

In coaching there is conflicting evidence regarding who is the best person to do a demonstration (illustrate the success criteria through modelling). In other words, who is the most effective person to demonstrate in relation to the efficiency of skill acquisition? Should this be a peer, a male, a female, a novice or an expert? Social status, it has been suggested, can have an effect on the desire of a participant to want to imitate or involve oneself in

practice of the demonstrated skill. McCullagh (1986) found that participants performed significantly better on the Bachman Ladder test in response to a high compared with a low-status model. Gender, it is argued, can have an effect on a person's desire to view a demonstration. The research on this area is surprisingly limited; however, there are results that suggest that boys learn more about ball-snatch tasks when viewing a same-sex rather than an opposite-sex model (Felt and Landers 1977; Gould 1978). There is some recent evidence to suggest that peer-group models are an effective way of demonstrating, especially when the person modelling is more skilled than the rest of a group. D'Arripe-Loungueville et al. (2002) found that in a swimming task for children, peer models who were more skilled elicited more effective learning. It is suggested that this is due to the pupils' desire to emulate the models' skill in practice. The theory that a skilled model is the best form of demonstration was tested by Landers and Landers (1973). The Bachmann Ladder test was used with fifth and sixth grade students. Participants who observed the skilled teacher climbed the most rungs on the ladder. McMorris (2004, 173) states, "If we want people to learn by observation, the demonstration needs to be correct." McMorris (2004) suggests that where possible a perfect model should be used to enhance learning. His seemingly common-sense approach is based on the premise that if there is a skilled model available then a coach should use it. Not all research agrees with McMorris; there is some evidence (e.g. McCullah and Caird 1990) which suggests that participants who view a learning model eventually perform better than a matched group who observe the correct model. This was especially true when they were able to hear prescriptive feedback from the coach. The theory is that when watching a novice or a learners' model the pupil is more actively involved in the problem-solving process because they are aware of what does not work and relate their own performance to what they have seen (McCullah and Caird 1990). Williams and Hodges (2004) add to this debate by suggesting that it may be helpful to allow a learner to view a

variety of demonstrations from a variety of people. Thus learners are able to appreciate the subtle differences of technique and the effect this has on outcome. For example, golfers viewing several peer demonstrations of a shot with a 7-iron could begin to make correlations between a particular swing type and the shape of the ball flight.

The timing of when the success criteria or a model is exposed to a learner is worthy of discussion. An important element of Assessment for Learning (AfL), as outlined by Williams (2006), is the teacher and learner knowing where they are in terms of knowledge and understanding and then having the wherewithal to relate this to a specific learning objective. When coaching, it could be sensible to provide the learner with the opportunity to practise the skill before observing a demonstration (Weeks and Anderson 2000). It may be useful for swimming coaches, for example, to ask swimmers to attempt the tumble turn before showing them a skilled model. Demonstration can then be introduced as and when required in an attempt to guide the learning process. This process of holding back the criteria for success or model (demonstration) has the effect of making the learner more aware of what it is they need to learn to get better.

There is a view that the incorrect and/or overuse of demonstration can be damaging. Williams and Hodges (2004) state that there is the danger that this misuse creates a 'cloning' approach to skill acquisition. If the outcome of a skill is not directly related to a specific technique then a verbal instruction may well be more effective than a visual one. The argument outlined by Williams and Hodges (2004) is that a demonstration in this situation may well be overly constraining and may prevent the participant from adopting a movement pattern that suits them yet achieves the desired outcome. Hodges and Franks (2004) argue that guided

discovery methods may be the most beneficial approach for coaches. The example of a golfer is used. They suggest that learning to swing the club in golf without any instruction (verbal or visual) concerning stance and grip would undoubtedly be frustrating and demotivating. The job of the coach is perhaps not to prevent the problem-solving process, but rather ensure that the tutee does not have to find everything out for themselves. Hodges and Franks (2004) also argue that “accessibility of knowledge” (Hodges and Franks 2004, 162) is also important. They suggest that individuals do not gain any learning benefit from demonstrations until they have developed an understanding through task experience. Their point is that viewing a scissor kick or a cover drive is not worthwhile if the person watching does not have some experience of the task.

Linked to the theories of guided discovery and learning through problem-solving is the idea of focusing on a movement’s end point (Wulf et al. 2002; Hodges et al. 2004). Hodges et al. (2004) showed that presenting a video of a model’s toe was just as effective as being able to view the entire body when imitating the chip pass in football. Similarly Wulf et al. (2002) found that feedback about the ball was more effective than concentrating on limbs when teaching the volleyball serve. Hodges et al. (2004b) indicated that participants who watched the expected ball trajectory from a football chip produced a better performance in a retention test than those who viewed the whole movement pattern. In a comparable study Todorov et al. (1997) found that those who viewed only an expert’s table tennis’ paddle and ball outperformed a control group who received verbal instruction and demonstration from a coach. Interestingly, Mataric and Pomplun (1998) reported that when observers saw a grasp motion involving the whole arm their attention was directed to the movement’s end point (hand and fingers). These research papers’ conclusions are interesting however they are

simplistic and only focus on specific tasks within a particular sport(s). It would be wrong to assume that they provide concrete evidence on the correct way to coach.

The importance of the movement speed of demonstration has had limited focus by researchers. Wishart et al. (2001) found that elderly people were only able to learn novel movements when speed was slowed. The argument suggested by Hodges and Franks (2004) is that by decreasing speed, attention is freed to aid the discovery of new movements. It could be suggested that a slow demonstration helps learners and ‘walking through’ techniques such as the ruck in rugby or the follow through in cricket bowling is beneficial.

2.5.3 Observation

The ASUOI behaviour category ‘observation’ was a new criterion used for the first time in Brewer and Jones (2002). In previous ASUOI research ‘observation’ is not listed and the category ‘silence’ is used as an umbrella term to describe the period of time in which a coach is doing nothing or is inactive (Potrac 2007; Miller 1992; Claxton 1988; Lacy and Darst 1984). Claxton (1988, 308) stated that silence was “not usually a productive teaching strategy”. Increasingly this view has been questioned and explanations have been sought as to why some coaches spend significant amounts of their coaching sessions in silence. Miller (1992) proposed the view that it was important for the children being coached not to feel tension, an anxiety that could be increased by the constant input of a coach. Lingen (1998) felt that careful observation that brought about insightful analysis was a vital component of effective football coaching. Whereas Cushion and Jones (2001) provided a slightly different view by suggesting that the coaches in their research were involved in periods of silence so

that the impact of their intervention was not diluted. More recently Potrac et al. (2007) suggested that the smaller amount of silence used by top-level professional football coaches in England compared to that found in a study of top-level Norwegian football coaches could be explained by the fact that the Norwegian coaches had also undertaken teaching training courses in Physical Education. It is argued by the researchers that a major focus in teaching training is the observation and analysis of a pupil's performance. Potrac et al. (2007) discuss the fact that three out of the four football coaches in their study did not receive teaching training and that this may be proposed as the reason why they did not spend a large amount of time in silence. Thus implying that those who are well versed in educational theory understand more fully the need to observe and analyse an athletes' performance.

Certainly, in education – both in physical education and the classroom – the virtues of observation and the correct assessment of a pupil's performance are widely advocated. Since Black and Williams (1998a) there has been intense focus on the process of teaching and learning and this has led researchers and authors to write about this area (e.g. Askew and Lodge 2000, Hattie and Timperley 2007; Hattie 2009). There has been a lot of attention on the verbal information provided by a teacher to a learner. Hattie and Timperley (2007) suggest that effective teaching should follow a three-point process and that they provide information to a learner regarding where they are going, where they are now and how they are going to get to the next stage. Hattie (2009) suggests that interventions into this process need to be planned by the teacher and thought about carefully.

Formative assessment provides information to a pupil about how they can improve and achieve the learning goals provided (Black and Williams 1998a). Thus the feedback given by the teacher, peer or parent is used to guide them towards their learning intention. The use of this AfL principal is similar to instruction provided by a coach: they observe the athlete and

make judgements about their performance and react accordingly. The quality of the feedback is directly affected by the quality of the observation. A coach providing information on how a hockey player can improve his defending will make this judgement from observing the players' performance within the coaching session. This is very similar to a history teacher formatively assessing a pupil's essay and providing verbal or written guidance on how he/she would improve his/her paragraphing.

Tharp and Gallimore (2004) explain that John Wooden studied what each individual did very carefully in order to anticipate what his students would or would not do, and he was ready therefore to instantly respond with information and instruction. In other words this successful coach was almost ready to make the observation and respond accordingly. It could therefore be proposed that good observation or a readiness to observe does not necessarily mean observation for a long time. A similar point is found within McCullick et al. (2006), who researched the working memory of 43 'expert' sports' instructors. The expert coaches in the study watched five-second clips of coaching sessions and then the screen went blank. They were asked to recall the information they had seen. The results supported Berliners' (1986) contention that experts have excellent memories, arrange their knowledge in a hierarchical manner and are able to discern the important from the unimportant. This may suggest that experienced and qualified coaches are able to observe and quickly analyse the situation before them. This would concur with the research done by Bian (2003) and who found on a slide recall task that expert teachers were better able to interpret and make sense of what they were viewing than teachers who were less expert.

2.5.4 Questioning

In education generating good classroom discussions often starts with strong questions. Questioning could be the first move made by any educator to set up an interactive classroom. Questions are important for formative assessment as learners realise what they know and more importantly what they partly know. They guide learners to further develop their understanding. Classroom dialogues initiated by questions are an essential component of AfL, with the teacher making informed decisions about pupils' learning and adjustments to their teaching. Pupils develop their own learning as they become more aware of their learning needs and pathways to improvement. They can become self-aware and independent learners (Hattie 2009).

Children's own thinking and learning can be improved significantly if they have the opportunity to respond to teachers' questions (Wragg and Brown 2001). It could be added that the opportunity should be created to respond to other students, questions also. It is simplistic to say that we ask questions to ascertain where a pupil's knowledge is at any given point in time – though this certainly has been the traditional form of question in a classroom: 'What is the date of the battle?' 'What is three-quarters as a decimal?' In AfL questions do serve a diagnostic purpose, but they also serve the important aim of developing the understanding of the pupils by engaging them in an open debate about the subject at hand. Questions seek to develop an active approach to learning and foster interest and curiosity by challenging the pupils' knowledge and understanding and this is then developed into new areas through dialogue with peers and the teacher (Samson et al. 1987).

Questioning, therefore, is one of the most effective strategies for creating learning, rather than simply being a test of learning (Harris 2007). Asking open questions that may have more than one response or that create new areas for discussion enhances pupil thinking and deepens understanding. Questioning is the gateway to creating new knowledge and understanding. Discussion can help bridge the gap between actual and expected attainment. Pupils who might avoid risk when faced with a challenging task (Blumenfeld 1992) can, through discussion in a supportive environment, become risk-takers as they gain confidence in their own thoughts (Kulik et al. 1990). Self-assessment is promoted as they view their own ability in relation to others. Pupils are able to show higher-order thinking skills as they challenge each other's thinking in a constructive way. In Maths, pupils who gave help to others in group discussion accrued more from the exercise than the others in the group (Black and Wiliam 1998b). This will be no great surprise to teachers, who often find that they understand a subject best when they have to teach it.

In coaching research, Cassidy et al. (2009) provide an overview of Mosston's (1966) teaching methods/styles. These teaching styles are listed as (i) Direct Method (ii) Task Method (iii) Reciprocal Method (iv) Guided Discovery Method and (v) Problem-Solving Method. The last two have good questioning at the centre of their approach to coaching. Butler (1997) compared the questions asked when adopting guided-discovery type methods with those adopting a direct method. She found that those who used guided-discovery methods used more and a wider range of questions. These include open analytical questions such as, 'Do you increase your chance of scoring from a penalty corner?' The theory, as already mentioned, is that the athlete is more involved in the process and thus is learning in a more efficient way. Cassidy et al. (2009) add more to this debate by suggesting that it may be useful, when asking questions, to cue words that direct the learner to use their preferred

learning style. For example, a coach, when asking a question to a visual learner, says: ‘Watch the demonstration and then tell me what are the three phases of the kick?’ Questioning is also fundamental to the success of the problem-solving method. A problem that is directly related to the learning objective is given to an individual or a team. An example could be that the attacking team in netball have the centre pass-off and are told that the score is tied with 15 seconds left on the clock until the final whistle. The problem is to devise 3 ways to score a goal within 15 seconds. The coach tells them they have 10 minutes to come up with the answer. A debrief is called at the end to decide upon which option to use in the next match (Cassidy et al. 2009).

2.5.5 Feedback/self and peer assessment

Feedback is the bridge between learning and teaching. It has been perceived as common sense, but it is a great deal more complicated. A comment that is made or a question that is asked does not end the process but rather begins a discourse. Such a discourse is only useful and reliable if the original feedback is of a high quality and aids the learner. Such a view of learning has a great deal in common with the principles of AfL. Feedback should therefore encourage athletes’ participation in activities of construction and give advice for athletes to reflect and act upon to further their own learning – which in turn could lead to further discourse in the future. This is what Askew and Lodge (2000) call feedback “ping-pong”. Ramprasad (1983) suggests the assessor (teacher, coach, pupil or athlete) needs to have information about the current state, information about the goal state, a way to determine whether there is a “gap” between these two and a mechanism whereby the feedback can be used to “close the gap” between the current state and the goal state. This use of feedback and process of learning is described slightly differently by Hattie and Timperley (2007) who

suggest that there are three forms of feedback: Feed Up (Where am I going?), Feed Back (How am I going?) and Feed Forward (Where to next?). Hattie (2009) indicates that interventions into the learning process by teachers must be planned to ensure that there is a cognitive change in the student, which seems to mirror the views of most writers on this subject. His book synthesises 800 meta-analyses related to achievement. The overriding conclusion to the synthesis is that visible teaching and learning are crucial. Hattie (2009, 37) explains this:

Visible teaching and learning occur when learning is the explicit goal, when it is appropriately challenging, when the teacher/coach and learner both (in their various ways) seek to ascertain whether and to what degree the challenging goal is attained, when there is deliberate practice aimed at attaining the mastery of the goal, when there is feedback given and sought, and when they are active and passionate, and engaging people (teacher coach, learner, peers and so on) participating in the act of learning.

Hattie (2009) also points out that feedback is one of the most significant and powerful influences on achievement. Importantly feedback is not only from teacher to student but also vice versa. It is, according to Hattie (2009) the synchronisation of pupil/teacher learning through feedback that makes it so powerful.

The original research done by Vygotsky on the theory of a more capable other and the zone of proximal development (ZPD) focused on the cognitive development and learning of children (Moll 1990; Wink and Putney 2002). Recently Potrac and Cassidy (2006) have related Vygotsky's theories to sports coaching. Wink and Putney (2002) suggest that Vygotsky's experience as a teacher and researcher led him to recognise that children were able to solve problems beyond their development if they were provided with guidance from a more knowledgeable (or capable) other. This person could be a peer, teacher, parent or team member. The ZPD has three interrelated phases. These are (i) assistance by others (ii)

transition from other assistance to self-assistance and (iii) assistance by the self. The theory suggests that learners have to pass through each stage before they can achieve true learning.

This is described by Cassidy et al. (2009) as a staircase, with each stair representing a stage.

Vygotsky himself described ZPD as:

The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (others) (Vygotsky 1978, 86).

In simple terms the ZPD exists between what can be achieved by the learner alone and what can be achieved with assistance (coach). Vygotsky advocated using instructional strategies such as demonstration, asking leading and open-ended questions and introducing the solution to the initial elements of a task (Dunphy and Dunphy 2003). He was also very critical of the use of the already mentioned 'direct instruction' and suggests that this style of teaching results in little more than recitation from the learner as opposed to any genuine development (Vygotsky 1987). Siraj-Blatchford (1999) adds to this debate by suggesting that any activities and advice that are already part of the athlete's capability are wasted and may simply have the negative effect of reducing a pupil's confidence. An athlete's learning style may also be something a 'more capable other' should focus on. Murrell and Claxton (1987) outline that learning styles are unique to an individual and change depending on the context. Potrac and Cassidy (2006) suggest that a coach's environment could be altered to accommodate learning styles; they also argue that a coach could alter the nature of his/her feedback to fit the learning style of a pupil.

The similarities between coaching and teaching are highlighted by reviewing the classroom principles of assessment for learning. The educational benefits of assessment for learning have been well researched and continue to provide a framework for teaching in the UK. Interestingly the classroom activities such as using questioning, providing a criteria for success or the use of observation are increasingly been advocated by instructional models such as TGFU (Bunker and Thorpe 1982) and are evident within national governing body coach education awards (Sports Coach UK 2009). There may now be an opportunity to research in more detail the impact of using the most up to date principles from the classroom in the coaching arena. This could include looking specifically at how feedback is used by coaches at different levels, the correct use of peer and self assessment or the amount or type of demonstration used within a coaching session. This echoes the thoughts of Roberts (2009) who suggests that it is perhaps time to involve higher education institutes when making decisions on the content of coach education at all levels. Additionally, bearing in mind the seeming acceptance of viewing coaching as an educational activity, more research could be done on how teachers, whether classroom or PE teachers, coach team games such as cricket or football. This could provide some interesting information regarding the use of educational activities found within the assessment for learning framework. This research would be particularly appropriate within the independent school sector as teachers regularly flit between classroom and games field.

2.6 Conclusion

The chapter began by discussing systematic observation and specifically the ASUOI. The review then focused on the similarities and differences between teaching and coaching before discussing some of the theories that help us understand sport coaching more fully. The literature review ends by discussing current teaching strategies linked to AfL and relates

these to research from the field of sports coaching. This overview of relevant research provides a background against which the findings of the current study can be discussed.

Chapter 3: METHODOLOGY

3.1 Introduction to the chapter

The purpose of this chapter is to outline and reflect on the methodological process. Initially the chapter will explain how the process evolved, the use of the pilot study, and the changes to the ASUOI and discuss in detail the processes used to help create a valid and reliable observational instrument. In the latter part of the chapter there is a focus on the gathering, analysis and interpretation of the data collected by the newly revised observation instrument.

3.2 Summary of the process

The first stage of the process involved using the pilot study to help create a systematic observation instrument that produces valid and reliable data regarding the coaching behaviours of 3 IAPS school team sport coaches. The pilot study gave the researcher the time and access to observations which enabled the researcher to devise a revised ASUOI. This revised model was then used, during the main study, to produce data regarding the coaching behaviours of 3 IAPS school team sport coaches. This data was then analysed and interpreted by the researcher.

3.3 Rationale for the Research Method

The process described in this thesis belongs to the positivist ideal (Gratton and Jones 2010) of finding out ‘what’ is taking place within a specific coaching environment. A quantitative deductive (Gratton and Jones 2010) approach is used to find out the coaching behaviours of a

sample of independent school sports coaches. The IAPS sports coaching sector and more generally the independent school sector is an under researched area. There is seemingly no systematic observation data from the UK independent coaching sector. The researcher is aware of the limitations of the methodology as it provides data only, however this is a starting point for further, more qualitative research to be done in the future (Gilbert and Trudel 2004). The researcher agreed with Brewer and Jones (2002) and questioned the validity of a generic systematic observation instrument (Lacy and Darst 1984) and therefore was adamant that the pilot study would be used to produce a valid instrument which enabled the researcher to record the coaching behaviours which were actually taking place. If coaching is changing quickly or every coaching environment is different then we have to adapt the research model accordingly. The revised ASUOI model is explained in full below however what the methodology does do is compare the data formulated across sectors. The ASUOI model has been used over 3 decades to observe coaches in a number team sports settings. Therefore the data formulated when observing IAPS coaches can be compared directly to other coaches in different sectors.

3.4 ASUOI: an adapted model

An instrument that is designed to record coaching behaviours can be seen to have content validity if it completely records or adequately samples the principle range of behaviours that are demonstrated by coaches within the specific coaching arena. If this is followed rigorously then a system may be deemed to have content validity and therefore records accurately the behaviours that are demonstrated by coaches within the specified environment. As previously mentioned the ASUOI model was created in the hope that it would develop and evolve (Lacy and Darst 1984). It has been assumed by most researchers in the past (e.g.

Claxton 1988; Miller 1992) that the behaviour categories listed in the ASUOI are valid. Until the pioneering work of Brewer and Jones (2002) there was no formal validation procedure of the instrument; it was assumed that the categories listed in 1984 would be correct for all sports and all coaching environments. Therefore, it is important that a model that is going to be used in coaching situations to measure a coach's behaviour, in this case within the IAPS school sector, is scrutinised and the appropriateness of the instrument examined. This was done through observing a sample of coaches from within an independent school to ascertain if the instrument adequately reflected the working behaviours being examined.

The use of quantitative systematic observation as a way of researching coaching behaviours has been criticised recently (e.g. Potrac et al. 2003 and Gallimore and Tharp 2004) due to its inability to allow coaches the chance to explain why they coach in the way they do. This study embraces the ideal that systematic observation remains a very effective way of researching coaching behaviour within the applied setting (e.g. Potrac et al. 2007). The crux of the matter is whether the observation instrument used is reliable and valid and whether the observational tool is recording what the coaches are doing.

3.5 Location of the observations

Rydale College is an independent, co-educational, day and boarding school for children aged 4 to 18. The college is split into 3 separate schools: pre-prep (4-6 years' old); junior school (6-13 years' old); and the senior school (13-18 years' old). The vast majority of junior school pupils transfer to the senior school. In the junior and senior section there are two fixture afternoons when games are played against other schools in the area. There are also two

coaching sessions provided on separate days to all the boys and girls. There are three main sports for the boys and these sports are coached within their games' sessions. From September to December the boys play rugby and the girls play hockey. During the Easter term boys play hockey and the girls play netball. In the summer the sports are cricket and rounders. The observations in this study were of coaches who worked primarily in the junior school.

3.6 Sampling (participants)

The coaches used within the pilot study and main study were different people. In the pilot study the 3 coaches used were second team u13 coaches. The observations in the pilot study were of the coaches undertaking sessions in boys' hockey, rugby and netball. Each coach was a qualified teacher and had obtained coaching awards at level 2 or above in more than 2 sports. They also had eight years or more coaching experience within the UK independent school sector. The 3 coaches used in the main study were given pseudonyms to protect their anonymity; they were called Poppy, Finlay and Harry. Like the coaches used in the pilot study they each had coaching awards at level 2 and above in more than 2 sports as well having eight years or coaching experience in the independent sector. However the coaches in the main study were the coaches of the first teams at u13 level. Poppy was the first team U13 netball coach, Finlay was the first team U13 rugby coach and Harry was the first team U13 boys' hockey coach. The coaches used in the pilot study and main study were convenience samples, in that they were coaches who worked at the same SE England independent school where the researcher was employed as a sports teacher. The basic criteria for research by convenience outlined in Ferber (1977) were followed. And thus the principal researcher

deemed that the samples were relevant, of the correct size to allow for analysis and representative of the population being studied (Ferber 1977).

The sports coaches in the pilot and main studies coached in single sexed groups. It was decided to observe experienced and well-qualified coaches so as to gain an understanding of what established coaches are doing within the UK IAPS school sector. It was felt that experienced and successful coaches were more likely to be involved in activities that would be focused on learning and skill development as opposed to maintaining the order of the pupils or managing a session (Schempp et al. 2007). Kahan (1999) recommended that studies of coaching behaviour that are based on small non-random samples, as is the case here, should provide descriptions of samples so that the reader may judge the applicability of the findings that replicate the study in a different setting. In addition, such biographies can also serve to enhance the reader's ability to contextualise the reported observed behaviours, thus generating greater understandings regarding their use. The biographies were ascertained from the coaches during brief interviews at the beginning of the study. In keeping with the work of Kahan (1999), a 'mini-biography' of each of the participant coaches used in the main study is provided below.

Poppy: Poppy is a swimming and P.E. teacher at Rydale School. She coaches throughout the pre-prep, junior and senior schools. She has over 15 years' teaching experience in state and independent schools. She coaches various age group teams primarily in netball. She possesses coaching awards in netball and swimming. In the past she has been a successful club swimmer.

Finlay: is a form tutor and maths teacher in the junior school at Rydale. He coaches games to junior school boys. He has over 10 years' teaching experience at Rydale. He coaches a variety of age group teams in football, tennis, athletics, rugby and hockey. He has coaching awards in football, rugby and tennis. His favourite sport is football although he achieved the highest standard at tennis (Junior Wimbledon).

Harry: is a form tutor and history teacher in the junior school at Rydale. He coaches games to junior school boys. He has over 10 years' teaching experience at two preparatory schools. He coaches a variety of age group teams in hockey, rugby and cricket. He has coaching awards in rugby and hockey. He enjoys all sports but achieved the highest standard at cricket playing cricket for teams in the Birmingham league. Harry was recently awarded an MA in Education.

3.7 Ethical considerations

The Headmaster of the school gave the researcher permission to observe coaches within the school setting. This person is known as the gatekeeper (Jupp 2006) and his permission was vital as it allowed the researcher access to observations as and when required. The fact that the researcher was a teacher at the school and had been CRB checked was an important reason in maintaining the gatekeeper's permission. Each coach was also approached and asked verbally whether they would be happy to be observed as part of the study. Each coach was asked to fill in an Informed Consent Fact Sheet (see Appendix C), which outlined that research was being undertaken and gave guidance to the exact nature of their involvement (McFee 2006). The form also informed the participants that their anonymity would be respected throughout and that they would have the right to withdraw from the study at any

point (Cohen et al 2000). Before undertaking the research the gatekeeper and coaches were advised that pseudonyms would be used to protect the anonymity of the school, coaches and pupils (Hitchcock and Hughes 1995). It was decided by the researcher that the school would be called Rydale and that the three coaches would be named Poppy, Finlay and Harry.

3.8 Pilot study: A procedure for validating and developing new criteria

The procedure for developing and validating a new systematic observation instrument for use within IAPS schools involved two sequential stages. The first stage involved obtaining ‘content validity’ (Brewer and Jones 2002) and the amendment of the existing observation instrument (ASUOI: Table 1). This process ensured the instrument had categorical items that accurately represented the behaviours of the situation being observed, which, in this case was the observation of IAPS school sports coaches (Brewer and Jones, 2002). The second stage ensured that the tool had logical or ‘face validity’ (Brewer and Jones, 2002), which is “determined by whether, on the face of it, a measure seems to make sense” (Vogt 1999, 107).

3.8.1 Stage 1: content validity

Prior to the main study during 2008 to 2009, 3 coaches were observed “live” by the principal researcher, 4 times for 30 minutes. Time sampled event recording was used to gather data. Every occurrence of the 14 behaviours listed on the ASUOI, as well as any change in behaviour, was recorded (Appendix 1). Any behaviour lasting longer than five seconds was recorded again, but marked with a dash (-) to indicate a continuation of a previous behaviour

rather than a new one (Claxton 1988). No data was collected during warm-ups or any conditioning segments of the sessions and a specific time was given as to when the skill and tactical elements of the session would be taking place. This was because the researcher wanted to see coaching taking place and it was important that the time assigned to observations was used productively.

During the observations of three school coaches, (two hours for each) the author qualitatively described any commonly occurring behaviour of the coaches that was not identifiable as a discreet behaviour by the existing instrument (Brewer and Jones 2002). The 3 coaches used were second team u13 coaches and as mentioned in detail above were qualified and experienced. The observations in the pilot study were of the coaches undertaking sessions in boys' hockey, rugby and netball. Based upon these results, behavioural category definitions were created to describe a number of additional behaviours, not identifiable within the existing ASUOI, hence creating a new refined instrument. The Rugby Union Coaches Observation Instrument (RUCOI) (Brewer and Jones 2002) was used to guide the changes. In addition research from the disciplines of coaching (Jones 2006; Penney 2006; Potrac and Cassidy 2006; Cassidy et al. 2009 and Roberts 2009;) and teaching (William 2006; Harris 2007; Hattie and Timperly 2007 and Hattie 2009) were used to aid the formation of the new categories. The endorsement criteria found within the UKCC Qualification Guide 2004 was also used to help guide the alteration of the ASUOI behaviour criteria.

3.8.2 Categorisation changes and additions

The term ‘learning intention’ (Williams 2006) is added . The clear understanding of a pupil’s learning aim is seen as a vital component of what Hattie (2009) describes as ‘visible learning’. The teacher/coach is able to make learning more accessible by providing a clear explanation of the aim(s) of a lesson. It was therefore deemed necessary to make a distinction between a coach explaining the learning intention of a session as opposed to a coaches explanation of how to complete a task or drill. Therefore 2 terms was used ‘learning intention’ (why we are doing it?) and ‘pre instruction’ (what will be done?).

The work of Hattie and Timperley (2007) is also used to help explain the timing of a coach’s verbal involvement/input. They describe three forms of verbal involvement/input: Feed Up (where am I going?); Feed Back (how am I going?); and Feed Forward (where to next?). The use of terms in the revised ASUOI such as ‘concurrent feedback’, ‘concurrent feedforward’, ‘postfeedback’ and ‘post feedforward’ make it more clear when the coach’s input takes place and what the purpose of that input is. The observations in the pilot study indicated that the general terms of pre, concurrent and post instruction were not sufficient or sensitive enough and that there was a need for more specific categorisation of a coaches verbal input.

Good questioning is deemed as vitally important when learning new skills and information (Wragg and Brown 2001; Williams 2006; Potrac and Cassidy 2006; Wikely and Bullock 2006; Cassidy et al. 2009). Open questions are used if a coach is to adopt a guided discover method or problem-solving method (Butler 1997; Cassidy et al. 2009). It is suggested that questions that require an analytical response from the athlete/learner are more effective for

the learning process (Butler 1997). It was therefore deemed appropriate to make a distinction between a rhetorical or closed question and an open ones so that a clearer picture of what the coach is precisley doing is created.

A demonstration is a coach's opportunity to provide a model to assist in the goal of achieving the learning intention. The use of a learner model is interesting; Williams and Hodges (2004) suggest that it may be helpful to allow a learner to view a variety of demonstrations from his/her peers. The learner is able to see the differences and act upon them (William 2009). It also involves the athlete in their learning and breeds motivation. It was apparent from the pilot observations that peer/learner modelling was used in the coaching session. Therefore, it was deemed necessary to include the category 'learner model'.

The category 'observation' replaces the original category 'silence'. A period of silence when the coach is watching the activities is assumed to be a period of diagnostic observation. A judgement can then be made on what input the coach is going to have. Cushion and Jones (2002) suggest that periods of silence seems to have the effect of making what the coach says or does more effective. Certainly, the coaches involved in the pilot study, albeit some more than others, spent significant amounts of time observing the pupils in silence. Thus, the category 'observation' assumes that a period of assessment about a player(s) is taking place when the coach is watching in silence.

The unusual category 'use of the first name' is deleted due to its lack of relevance. Lacy and Darst (1984) provided no explanation as to why this category is included and there is no

explanation given by subsequent researchers (Claxton 1988; Potrac et al. 2002 and Potrac et al 2007) who have used the Lacy and Darst (1984) ASUOI categorisation. Therefore the researcher, during his pilot observations, saw no reason to use this category when observing IAPS' school coaches.

3.8.3 Stage 2: Face Validity

In accordance with Vogt (1999) it seemed appropriate to seek the advice of experts within the field. It was necessary to confirm that the adapted categories were the ones used by coaches within independent schools and that the categories were adequately described. It was felt that the most appropriate way to determine that the categories were correct was to ask experience coaches within the independent school sector. It was seemed right that the population that was being studied should be involved in the development of the instrument. Consequently a group of experienced coaches within the independent sector were asked to validate the criteria used within the proposed new observational instrument. This was seen as a crucial step in the validation of the instrument as categorising a coach's behaviour can be subjective and open to unacceptable bias (Gilbert et al. 1999).

A panel of 5 experienced coaches (more than 10 years coaching experience within different IAPS schools) were asked to give their opinion on the suggested categorisation. These coaches were all qualified teachers as well as possessing a level 2 or higher coaching awards in 3 or more team sports. The panel members were asked to analyse the developed instrument (description of categories and examples given) from the perspective of their specific expertise (different coaches focused on different sports). Each coach was given a list

of criteria and was asked the following questions: a) Are important elements of a content area omitted from the behaviour categories? b) Are unimportant elements of a content area erroneously included? c) Are all elements of the content reflective of independent school coaches' working behaviours in the practice environment? (Brewer and Jones 2002).

At the time the respective panels met, any questions or issues arising from the respondents' analyses were clarified and discussed with the principal researcher, with the coding instrument being modified as necessary (Gilbert et al. 1999). This allowed emergent issues relating to both the title of the behaviour and the nature of the description of the behaviour classification to be discussed and explored. The appliance of examples to each definition was also discussed at length with the panel at this stage (Brewer and Jones 2002).

3.8.4 Results of the face validity procedure

There was much debate among the 5 panellists about the terminology used by Hattie and Timperley (2007) to explain the flow of information between coach and athlete (feedup, feedback and feedforward). In the end there was unanimous support for these terms and it was agreed that they addressed the type and timing of information provided by coaches during coaching sessions. There was also debate in relation to whether distinction should be made between behaviours in response to individuals and those in response to groups. The panellists were, however, agreed that categorising such a distinction would cause severe logistical difficulties in both the identification and recording of such behaviours; thus it was not included. It was also decided that examples would continue to be provided to aid the understanding of each behaviour category and that the coaching of football would be used

within these examples. A list of the revised behaviour categories and detailed definition examples is presented below in Table 2.

Table 2

Revised behaviour categories (2010)

(Lacy and Darst 1984, 60 adapted and changed)

<p>Pre-instruction:</p>	<p>Directional information given to player(s) preceding the desired action to be undertaken. It explains how to execute the skill, play, game or drill that it precedes: “Attempt 20 shots with your right foot, before doing the same with your left.” “You should attempt to score a goal using your head only, off you go.”</p>
<p>Learning intention:</p>	<p>The coach explains why he/she is doing a particular practice. The learning outcome is explained: “We are aiming to improve your ability to turn away from defenders into space.”</p>
<p>Concurrent instruction:</p>	<p>Cues, reminders or instructions given during the actual performance of a drill, skill or play: “Now run left” as the play develops.</p>
<p>Concurrent feedback:</p>	<p>Positive feedback given to the player(s) during the actual performance of a drill, game or skill: “Keep passing the ball, that is great.” “Great</p>

tracking back, well done.”

Concurrent feedforward:

Information or re-explanation that is given during an actual performance of skill, game or drill, which informs the player of how the performance should be altered in order to improve: “Keep the ball in front of you.” “Head up” as play develops.

Post-feedback:

Positive feedback of a specific nature given to the player(s) following the execution of a specific skill or task: “Your shooting was very good; you kept your head down and followed through.” “Your shielding of the ball was top-class.”

Post-feedforward:

Information or re-explanation given after the execution of a skill or play that informs the player of how the performance would need to be altered in order to improve: “Next time you need to get more distance between the ball and the defender when shielding the ball.” “Your turns are ok, but remember you can use the outside of the foot to turn also.”

Praise at skill attempt:

Non-specific positive feedback in the form of demonstrations of satisfaction or pleasure, at skill or practice attempts, given at the conclusion of the skill or exercise. These demonstrations may either be verbal or non-verbal in nature: “That was great play.” “Well done.” A smile, thumbs-

	up sign or pat on the back.
Scold at skill attempt:	Verbal or non-verbal behaviours demonstrating displeasure at the player's skill or practice attempts: "That was awful!" "You went the wrong way. Pay attention and do it again." Shaking of the head, shaking of a clenched fist.
Closed questioning:	Question to player(s) that instigates and yes, no or simple answer: "Did you look up before you crossed the ball?" "How many times did you shoot during that game?"
Open questioning:	Questions that instigate a more detailed and analytical answer: "How could you have been more effective when crossing the ball?" "What are the options when faced with a 2 v 1?"
Coaches' model:	A physical or enacted demonstration by the coach of the correct performance of skill.
Learners' model:	A model, whether correct or not, that is demonstrated by the player(s).
Negative model:	A physical or enacted demonstration by the coach of the incorrect performance or technique.
Hustle:	Verbal or non-verbal actions or statements that are intended to intensify effort: "Pace, pace, pace!" "Come on lads, quick, quick, quick!" Repeated hand-clapping to gee up players.
Praise (general):	The coach demonstrates general satisfaction or pleasure at general practice behaviours through

	<p>verbal or non-verbal compliments, statements, or signs: “Your attitude has been good throughout the session.” “That was your best session to date.” A smile, thumbs-up sign, pat on the back.</p>
Scold (general):	<p>Verbal or non-verbal behaviours demonstrating displeasure at the players’ social behaviours within the training session: “You’re late again.” “I told you not to turn up without the correct top on.” “Will you just shut up for a second?”</p> <p>Shaking of the head, shaking of a clenched fist.</p>
Use of humour:	<p>Verbal remarks and the use of humour.</p>
Management:	<p>Verbal statements or actions related to the organisation of the practice session, which do not relate to the technical details of the practice: “Four groups of five.” “Ok everyone get a drink.” “Stop, everyone in.” Moving equipment, putting out cones.</p>
Observation:	<p>Periods of diagnostic observation when the coach is not talking but observing the players and analysing their execution of the skill or activity or observing the way in which a team is executing strategies in open-play situations.</p>
Conferring with assistants:	<p>Speaking to individuals not directly involved in the practice: “If you take this group I will focus on the forwards over there.”</p>
Uncodable:	<p>Any behaviour that can be seen or heard that does not fit into the above categories.</p>

3.9 Main study: the observations

3.9.1 Instrumentation

The instrument used was the revised ASUOI (Table 2). As already discussed the criteria had been validated using a pilot study and both content and face validity had been achieved. The function of the revised ASUOI was to provide accurate data about what is happening within IAPS schools' team sport coaching sessions. Researchers have become increasingly aware of the need to "use evaluation methods that are sensitive to the participant's context" (Gilbert and Trudel 1999, 236). The instrument therefore attempts to provide an accurate recording of the coaches working within the IAPS school coaching environment.

3.9.2 Data collection

The same data gathering and recording system used in the pilot study was used during the observations of Poppy (girls' netball), Finlay (boys' rugby) and Harry (boys' hockey) in the main study. The three coaches were observed live for 8 times for 30 minutes during the first 2 terms of the academic year 2009/10 (September – April). Each coach was coaching U13 first-team pupils during the timetabled afternoon games sessions. A specific time for the observation was agreed and coaching sessions within the first and last two weeks of term were also avoided to ensure that the session observations involved the coaching of tactics and skills. Practical issues provided difficulties for the observers throughout this process. Wet weather, at times, made the clear recording of the categories on paper difficult. A pencil was used as it was better than pen in wet weather, and a plastic wallet was used over the paper to ensure it remained dry. A stopwatch was used to help guide the observer whilst performing time sampled event recording. It was difficult for the researcher to watch the sessions yet

still focus on the stopwatch. The training process described below helped overcome this issue.

3.9.3 Observer training

The primary researcher and a trainee were involved in training. This involved learning the behavioural classifications of the instrument and practising to successfully code identified behaviours specific to the instrument. This was practiced on randomly selected coaching sessions of coaches within the school who were not involved in the proceeding observations. A period of reflection was undertaken after each set of observations and this process was repeated until both persons felt they had become proficient at the process. Further observations were carried out and the training process was deemed complete when there was a consistent minimum of 85% inter-observer agreement (Siedentop 1976). This is the benchmark of agreement commonly used in observational research. In addition two inter-observer checks were carried out during the actual observations. On each occasion 85% agreement was achieved. A 15 % inaccuracy buffer may seem somewhat large if researchers are going to take a positivist research tradition standpoint and attempt to assume that what the observers were viewing was actually 100% accurate. The intra reliability test (Siedentop 1976) was not used. The intra reliability test, which has been used in previous research (e.g. Brewer and Jones 2002; Potrac et al. 2007; Claxton 1988), uses video to enable the researcher, after a significant time gap to view the same coaching session. The 85% benchmark is used to ascertain whether the researcher is consistent with his/her interpretation of the same coaching session. The previously mentioned reluctance to use a video was the reason for not using an intra reliability test. It is however a shortcoming of the research as it

is a test which adds validity and reliability to the data generated by the systematic instrument used.

3.9.4 Live observation and its effects

Research that is ecologically valid is said to have occurred in situations that resemble ‘real life’ (Stagnor 2004). The researcher was keen to ensure that the observations carried out within this thesis were as ecological valid as they could be and that they captured the behaviour of the pupils and coaches as it would be on a normal school day. The ‘live’ observation of coaches was the preferred method of recording. Live recording did not require the setting-up of equipment or any knowledge of being able to use a video recorder or audio device. It was also decided that the researcher was more mobile and was able to get closer to the action, without being intrusive, to ensure the accurate recording of data. It was felt that the live observations are the least obtrusive and possibly the least likely to cause ‘observational reactivity’ (Crowther and Lancaster 2008) and a change in the behaviour of the children and the coach being observed. It was decided that a camera or audio device would be a more overt style of observation and that both coach and pupils may have ‘played up’ to the technology. The coaches were made aware that I was observing them but the pupils were not. The researcher, however, is aware of the effect any ‘overt’ observer has on a coach and his/her athletes as there is always the chance that the observer’s presence may cause a change in behaviour of those being watched. This can happen in a number of ways; the observer may just be concerned or made nervous by the presence of someone else within their environment. There is also the chance that a particular session is avoided as, for whatever reason, it is not felt to be appropriate. Coaches may want to be seen like others who are also being observed; in a way they may try to conform and change their coaching style

accordingly. There is also the fear that the participants may change their behaviour because there is a ‘stranger’ watching the coaching session (Moyles 2005, Delamont 1992). The trained observers made every effort to be as conspicuous as possible without reducing the accuracy of their findings. Finally, live behaviour recording has shown to be consistent with both audio and videotaped observational data (Siedentop 1991; Potrac et al. 2007) and is also not effected as much as other technological methods of observation by the weather.

3.9.5 Data analysis

The data that had been recorded onto a record sheet (Appendix 2) was transferred onto a Microsoft Excel spreadsheet. Each behaviour was counted and inputted into the Excel spreadsheet. Each figure for a specific behaviour category from each observation was added together to produce a total for each category. These totals for each coach were calculated into percentages and presented as a table similar to that found in Potrac et al (2007).

3.9.6 Observer bias

The research process within this study has at his heart the desire to provide an observational model that is both accurate and valid. It is therefore important that the bias brought by the researcher/observer is acknowledged. The researcher’s background helped create a strong awareness of coaching, and during the pilot observations this knowledge was useful when noting down coaching behaviours that were not being picked up by the criteria listed in the ASUOI. The researcher is however aware of the issues related to observer bias. Issues of “selective attention” (Moyles 2005, 179) may have created bias. This is the tendency for

researchers to select what they ‘want’ to see and then interpret this from their own perceptions and values. The aforementioned training and inter-observer checks are devised to ensure that issues of selective attention are reduced and what is recorded is not biased. Issues related to “selective memory” (Moyles 2005, 179) can also have an impact on bias with relation to observation. It is suggested that when making field notes the researcher should ensure that they are written up as soon as is possible to avoid any bias. With this in mind the principal researcher ensured, during the pilot study, that the coaching behaviours that did not fit into an ASUOI category were noted down as quickly as possible. The principal researcher also made every effort to ensure that he was writing exactly what he saw. The aforementioned ‘face validity’ (Brewer and Jones 2002) process that took place after this did allow for these suggestions to be analysed and discussed in detail by ‘experts’.

3.9.7 Complexity of instrument

The systematic observation instrument created was a complex one. This fact alone does create some issues in relation to the method used in this study. Naturally, multiple categories will bring into question the accuracy of an observational instrument, as complexity could result in human error. The author would accept, as did Brewer and Jones (2002), the need for rigorous training of observers. The difficulty of being precise about the difference between a coach’s feedback, feedforward and instruction is highlighted as an area of complexity by the researcher. There can be a blurring of these categories due to the delivery and specific coaching behaviours of those being observed. Experience and training can ensure that accuracy in this area takes place on a consistent basis.

Although training is required prior to the use of this revised ASUOI there have been not been any established guidelines for the maximum number of behavioural categories. In addition Brewer and Jones 2002 argue that a thorough validation process, similar to that which took place within this research paper, had the result of reducing the negative effects of instrument complexity. Brewer and Jones (2002) refer to the importance of producing a systematic observational instrument that is accurately reflecting the events that occurred. This research project also produced, through a validation process, a revised ASUOI which is a highly sensitive and rigorous set of behavioural categories which are related specifically to the current coaching practice taking place within the UK IAPS school sector. The original ASUOI (Lacy and Darst 1984) however, although easy to use and simplistic, has been highlighted in this study as not having the sensitivity or precision to accurately record current coaching practice within the IAPS school sector.

3.10 Chapter conclusion

Chapter 3 outlined the process undertaken to produce a systematic observation instrument that was both valid and reliable. This involved a detailed and rigorous pilot study that had the aim of providing “content” and “face validity” for the systematic observation instrument eventually used within the main study. This chapter also outlined the importance of effective observer training before data collection in the main study. The overall aim of providing an observation instrument that was accurate and sensitive was discussed as a vital prerequisite to providing data-rich reliable and valid research in the future.

Chapter 4: **RESULTS AND DISCUSSION**

4.1 Introduction to the discussion section

This section displays the data and the findings are related to the coaches' use of instruction, questioning, observation and modelling. Similar to the work done by Potrac et al (2007) this study's aim is to provide unique data in an attempt to widen the debate regarding coaching within a specific and under researched environment. The results are evaluated and analysed in relation to research in the sociological and educational fields and speculation is given as to why the coaches coached in a certain way. It is not the intention of the author in any way to suggest that the points made are concrete reasons why the IAPS school coaches in this study coached in the way they did.

4.2 Explanation of results

The overall percentages of the recorded behaviours are displayed in Table 3. The behaviours related to direct instruction (i.e. pre-instruction, learning intention, concurrent instruction, concurrent feedback, concurrent feedforward, post-feedback and post-feedforward) accounted for just under half of the coded behaviours (41.4%). Three categories accounted for over 10% of the overall categories. These were observation (11.79%), management (10.6%) and open questions (10.37%).

Table 4 provides an individual breakdown of the observed coaching behaviours for each coach who was observed as part of this study. These illustrate a number of similarities and

differences in relation to the recorded coaching behaviours of Poppy, Finlay and Harry. The overall and individual percentages are explored and debated in more detail within the discussion section below.

4.3 Numerical results

Table 3

Combined summary of all observed behaviours as recorded by revised

ASUOI

Behaviour	Total behaviours	% of coded percentages
Pre-instruction	327	5.48
Learning intention	178	2.98
Concurrent instruction	868	14.53
Concurrent feedback	335	5.61
Concurrent feedforward	394	6.6
Post-feedback	66	1.11
Post-Feedforward	370	6.2
Praise at skill attempt	187	3.13
Scold at skill attempt	37	0.62
Closed question	48	0.8
Open question	619	10.37
Coaches' model	158	2.65
Learners' model	386	6.46
Negative model	38	0.63
Hustle	164	2.75
Praise general	68	1.14
Scold general	12	0.2
Use of humour	100	1.68
Management	633	10.6
Observation	704	11.79
Conferring	64	1.07
Uncodable	216	3.62

Table 4

The behaviours utilised by coaches Poppy, Finlay and Harry as recorded by the revised ASUOI (Total behaviours and % of behaviours in parentheses).

Behaviour	Poppy	Finlay	Harry
Pre-instruction	235(10.57)	50(2.29)	42(2.19)
Learning intention	0(0)	74(4.03)	104(5.44)
Concurrent instruction	756(33.99)	86(4.68)	26(1.36)
Concurrent feedback	216(9.71)	93(5.06)	26(1.36)
Concurrent feedforward	43(1.93)	74(4.03)	277(14.50)
Post-feedback	10(0.45)	21(1.14)	35(1.83)
Post-feedforward	12(5.40)	107(5.82)	251(13.13)
Praise at skill attempt	101(4.54)	51(2.77)	35(1.83)
Scold at skill attempt	29(1.30)	2(0.11)	6(0.31)
Closed question	22(0.99)	18(0.98)	8(0.42)
Open question	13(0.58)	386(21.01)	220(11.51)
Coaches' model	27(11.21)	70(3.81)	61(3.19)
Learners model	191(8.59)	57(3.10)	138(7.22)
Negative model	0(0)	9(0.49)	29(1.52)
Hustle	35(1.57)	75(4.08)	54(2.83)
Praise general	22(0.99)	30(1.63)	16(0.84)
Scold general	7(0.31)	4(0.22)	1(0.05)
Use of humour	17(0.76)	52(2.83)	31(1.62)
Management	219(9.85)	265(14.43)	149(7.80)
Observation	128(5.76)	215(11.70)	361(18.90)
Conferring	35(1.57)	20(1.09)	9(0.47)
Uncodable	106(4.78)	78(4.25)	32(1.67)

4.4 Instruction

The revised instrument used in this study attempts to be more precise about the exact nature of the instruction used by the coach. It is therefore possible to discuss the nature of the 'instruction' used by the coaches as well as the amount or percentage of 'instruction' displayed by the coaches compared to other behaviour categories.

The percentage of time spent by the three coaches involving combined instructional behaviours was higher than any other category. The combined instructional behaviours of pre-instruction, learning intention, concurrent instruction, concurrent feedback, concurrent feedforward, post feedback and post feedforward totalled (42.51%) of the all the recorded behaviours. This figure is similar to other data formulated during the systematic observations of sports' coaches working with a variety of sports in a range of sectors and environments (e.g. Lacy and Darst 1985; Claxton 1988; Miller 1992; Bloom et al. 1999; Potrac et al. 2002; and Potrac et al. 2007). This consistency of data has led researchers to assume that high levels of instruction are a vital ingredient for effective coaching (Lacy and Darst 1985).

The reason for a high level of instructional behaviour displayed by coaches has been discussed in relation to French and Ravens typology of power (Potrac et al. 2002, Potrac et al. 2007; Cassidy et al. 2009). According to Potrac et al (2002), the power of a coach is directly related to the expertise demonstrated by him/her on the training ground. They suggest that the demonstration and acquisition of 'informational power' was essential to the coach in his/her study in gaining the respect of the players. It is discussed in Potrac et al. (2002) that the high percentage of instruction used by the coach could have been an effort to prove to the professional footballers, his knowledge and expertise. The typology of power is related to the classroom by McCroskey and Richmond (1984), who propose that as a teacher most

information is presented from a base of expert power. In essence, ideas are presented with the expectation that they will be accepted by the learner. It therefore could be assumed that the three coaches, who were also teachers, were working within an independent school environment in this study, may have displayed a large amount of 'instruction' whilst coaching because they possessed a desire to maintain the positions of power that they felt were important to a successful coach/learner or pupil relationship.

The large amount of instruction used by the three coaches in this study could also be partly explained by role theory (Potrac 2004; Potrac et al. 2007). In short, the coaches conduct themselves in a manner they believe to be appropriate to their position and role. This view is explored by Bandurra's (1977) social learning theory, which suggests that humans are more likely to copy an old role model than risk creating a new set of behaviours (Potrac 2004). Role models provide "an initial road map into an uncertain future" (Kekale 1998, p. 240). It is not only the experience of past role models or the opinion of a coach that may be important in this regard; the expectation of the pupils may also have been a reason for the coaches' extensive use of instruction. The research by Shaw (1981) of pupils in education indicates that pupils define a teacher's role in a limited way and focus mainly on the instructional and formal nature of the profession. Some of the coaches studied in Potrac (2004) indicate that they were under some pressure to fulfil a highly directive role expected from the athletes. Thus the behaviour of the coaches in this study may be influenced by the environment in which they coach and the combined teaching and coaching position they hold within a traditional IAPS school. They could be responding to what is expected and thus the high level of instruction is delivered accordingly. As Potrac et al. (2007, 40) states: "These are powerful shaping forces that are hard to change".

The absence of research on questioning in the field of sports coaching was mentioned by Claxton (1988, 308): “Questioning has been discussed as a valid teaching strategy in many texts, but its value in coaching may have not yet been realised. More study needs to be made of questioning as a valuable coaching strategy”. There has been little written about the use of questioning in coaching and certainly previous systematic observation research papers have not focused on questioning. Although there was no distinction made between open and closed questioning in previous ASUOI research; preceding systematic observations (e.g. Miller 1992; Potrac et al. 2002; Potrac 2007) indicate that questioning was used sparingly by the observed coaches and accounted for less than 5% of the total coaching behaviours. In this study the figures were somewhat different. Overall, in the present study, questioning accounted for (11.17%) of the total recorded coaching behaviours. Open questioning accounted for (10.37%) of all the behaviours’ categories. Finlay (21.1%) and Harry (11.51%) used open questions regularly during their observed coaching sessions. This substantial use of questioning may be explained by the coaches’ teaching background or by the coach education they had received.

Research on questioning continues to be a focus of attention within educational research and has been promoted as a vital tool in the delivery of AfL (Black and Wiliam 1998) and as a technique that promotes learning (Hattie 2009). Research into questioning suggests that open questioning i.e. learning through discussion and problem-solving, is more effective than closed questions that initiate a factual or limited response (Hattie 2009). The benefits of good questioning for sports coaches are recognised as important at a national level. The United Kingdom Coaching Certificate endorsement criteria for levels 1, 2 and 3 list questioning as an important coaching technique that should be advocated and included in national governing body syllabi (Sports Coach UK 2009). In 2010 rugby union, hockey and netball are officially

endorsed by the UKCC at levels 1-3. It could be suggested that the coaches in this study, particularly Finlay and Harry, have understood the benefits of questioning due to the recent training they have received in both teaching and coaching.

The six-part typology of power has already been discussed in relation to instruction (Raven 1993). Previous research implies that guided discovery methods such as questioning are seldom used as it is feared by coaches that these approaches will be regarded by the athletes and others as indecisive and lacking in knowledge (Coakley 1994; Leukkonen et al 1996 and Potrac 2002). Why then did the coaches in this study use questioning as often as they did? The answer to this may be due to the coaching environment and position the coaches held within the independent school. The complex nature of coaching and the differing coaching behaviours found in different coaching environments is discussed by some writers (e.g. Brewer and Jones 2002; Lyle 2002). It does seem that coaches react differently in different situations. The unique independent school environment is different from the youth professional sector, the adult professional sector, the voluntary youth or the maintained school sector. Each coaching environment is unique and provides differing power relationships.

Could it be that because the coaches in this study were also teachers meant that they possessed 'coercive power' and 'reward power' (Raven 1993) – that is they were able to use the school punishment and reward system to aid their behaviour management? Was their 'legitimacy power' or 'expert power' affected by the fact that they were also teachers? Was their 'informational power' increased due to the fact that they were also educators who had received teaching training and coach education? Is 'referent power' or charisma, as it is commonly described, easier to achieve if you are also a teacher and possibly form tutor of the

pupil you coach? The position the coaches possessed within the unique IAPS coaching environment may have had an impact on the behaviours of the coaches being observed, which resulted in them using guided discovery techniques such as asking open questions.

The revised behaviour categories within this study enabled more detailed and specific information to be produced regarding the instruction used by the coaches observed in this study. It was therefore possible to create a clearer profile of the coaches' style and philosophy. A discussion of these is important as it identifies and makes clear the possible use of this revised instrument in the future and makes clearer the discussion surrounding the use of this type of instrument in the future. Pippa's delivery was primarily task focused. 'concurrent instruction' accounted for (33.9%) of the total recorded behaviours and 'pre-instruction' accounted for (9.71%) of the total behaviours. In summary the coach is direct in her method (Cassidy et al. 2009) and is focused on ensuring that the pupils are aware of the task they are doing. A small amount of time was spent on explaining what they were doing or how they could do it better. No time was spent explaining the learning intention of the session.

Finlay was different: he focused on questioning the pupils using open questions possibly involving the group in a 'guided discovery' (Cassidy et al. 2009) type session where the coach asks a series of open questions, which initiates an analytical response. He also uses a variety of instruction with a definite focus on the communication of the learning intention (4.03%) as well as the improvement of the pupils' learning. Over (15%) of all his recorded behaviours was information passed onto the pupils regarding their performance of a skill or technique. Harry's main emphasis seems to have been providing information to the pupils regarding how they could improve. He provided information on how to improve either

during the task, 'concurrent feedforward', (14.50%) or after a task, 'post-feedforward' (13.13%).

4.5 Observation

In this thesis 'observation' accounted for (11.79%) of all the recorded behaviours. Harry in particular was involved in a large amount of 'observation' (18.90%). These are sizeable percentages and this is an area that is worthy of discussion regarding the possible reasons that observation is used so widely by the observed coaches. It is possible that the observations used by the coaches in this study were undertaken as a way of making judgements on a pupil's performance and thus moving the learning of the pupil(s) forward. Certainly Harry (18.90%) was keen to spend large amounts of time observing and then followed this period of observation with concurrent feedforward and post-feedforward. There was clearly an attempt to observe and use this period as a means of analysing a pupil's performance and thus provide information about how they could improve. It could be that the coaches (Finlay and Harry) had embraced the similarities between teaching and coaching and were focussed on improving the skills and techniques of the learners within the coaching sessions. Spending a lot of time observing does not necessarily indicate that the coach is analysing efficiently or in fact more often. A quantitative study of the type used within this thesis does not provide an understanding of what a coach is observing or in fact how a coach observes. There is evidence which indicates that expert coaches spend a small amount of time observing, but importantly this time is used efficiently and usefully (e.g. Berliner 1986, Bian 2003, Tharp and Gallimore 2004, McCullick et al 2006). This study does indicate that Harry and Finlay spent a large amount of time observing, but how efficient these observations are cannot be highlighted. It is perhaps also wrong to assume that although Poppy (5.76%) spends less

time observing that she is not actively involved in analysis and thoughts of learner improvement.

4.6 Modelling

A new behaviour category, 'learner model', was included in the revised systematic observation instrument used in the present study. This addition enabled the results to give a clearer, more specific picture of the observational learning taking place within the coaching sessions. In this study the coaches did use modelling relatively regularly, with the 'learner model' being used more often than a 'coaches' model' or 'negative model'. Overall modelling accounted for (8.9%) of the total recorded coaching behaviours.

There is conflicting research regarding the correct use of demonstration or modelling. McMorris (2004) suggested that, where possible, a perfect model should be used. There is, however, some evidence which suggests that using a learners' model may also be effective. The research of D'Arrippe-Loungueville et al. (2002) states that a learners' model is effective, if provided by a more skilled peer. Whereas William and Hodges (2004) outline that a number of demonstrations performed by a variety of people are an effective way of aiding learning.

The desire to aid skill acquisition is not the only reason why modelling is used. Demonstration or modelling was performed by a professional football coach (Potrac et al. 2002) as a way of gaining respect. The coach was interviewed and stated, "The ability to demonstrate in front of professional footballers I think brings you a few 'brownie points'. And I think that you need all the help you get" (Potrac et al. 2002, 193). The reason he suggested is perhaps best explained by the aforementioned Raven's typology of power

(Raven 1993). The coach in the study by Potrac et al. (2002) may have used his demonstration as means of maintaining 'expert power' over his players. It could be that the desires of a coach within an independent school to undertake a coaches' model is due, in part, to a desire to maintain power over his/her pupils.

It is interesting that the learners' model accounted for such a large percentage of the recorded behaviours. The coaches differed in the amount of time they allowed the learners to demonstrate a skill or technique: Poppy (8.59%), Finlay (3.10%) and Harry (7.22%). All three coaches clearly made a conscious effort to include the learners' model and not entirely rely on their own demonstration. The use of a "learners' model" is not directly mentioned in the 2004 endorsement criteria (Sports Coach UK 2009); problem-solving and the use of athlete-centred techniques are mentioned as a prerequisite for coaching awards.

There is conflicting research regarding the best use of demonstration or modelling. McMorris (2004) suggested that, where possible, a perfect model should be used. There is, however, some evidence which suggests that using a learners' model may also be effective. The research of D'Arrippe-Loungueville et al. (2002) states that a learners' model is effective, if provided by a more skilled peer. Whereas William and Hodges (2004) state that a number of demonstrations performed by a variety of people are an effective way of aiding learning.

It may have been that their teaching backgrounds and experience ensured that they had received guidance or training on the benefits of success criteria and modelling in education. The use of success criteria i.e. the knowledge of how to achieve the learning objective and the use of models or answer examples, is an important aspect of AfL (Black and Williams

1998a). The use of modelling in the classroom has been discussed recently by Williams (2009), who suggests that showing a number of differing standards of written response to a task helps the pupils see the varying answers and they are able use this information to guide their own learning. Thus the use of a learners' model may be an attempt by the coaches in this study to use the demonstration in a more creative way and relate it directly to the learning taking place in the session.

4.7 Chapter Conclusion

The results of the systematic observations were discussed and some theories as to why the coaches coached in a particular way are given. This is meant as a preliminary investigation into a unique coaching sector and it is hoped that it will generate debate and research regarding the IAPS coaching environment in the future. The next chapter will discuss in more detail implications for future practice and suggestions for future research.

Chapter 5: CONCLUSION

5.1 Introduction to the chapter

The final chapter will summarise the findings of this study, it will readdress the thesis' aims and limitations as well as outlining the impact of the research and the possible avenues for future research.

5.2 Aim of the study

The aim of the study was to observe the coaching behaviours of three IAPS team sports' coaches. The Arizona State University Observation Instrument (ASUOI) was revised and made valid for the observation of three coaches within a specific school environment. The quantitative data produced was analysed and debated and suggestions to why the three coaches coached the way they did was provided.

5.3 Summary of the findings

The data produced by the systematic observation of independent school team sport coaches enables the reader to understand the type of coaching that took place within one IAPS school during 2009/10. It gives an insight to the coaching of 3 groups of U13 children within the IAPS school sector.

This thesis provides an opportunity to compare the data with coaches from other sectors, such as adult professional sport, youth club coaching and schools. Suggestions regarding why there is a greater use of questioning by the coaches in this thesis compared to professional football or high school coaches are discussed. The use of observation as a coaching behaviour is debated. The limited amount of research and data available regarding the use of observation makes comparisons with other sports or sectors difficult. However the correct and efficient use of observation by expert teachers and coaches is related to the significant use of observation used by the IAPS team sport coaches viewed as part of this thesis. The use of a modelling by the coaches observed in this thesis is compared to the desire of professional coaches to maintain a position of authority; however the coaches observed in this thesis also invite the pupils to perform the demonstration, a major difference to that found within the professional game. The educational benefits of modelling are also discussed.

Instruction was the coaching behaviour seen most often and suggestions about why this maybe the case are given. The pursuit and maintenance of power and the desire to act out a role are mentioned as possible reasons for high levels of instruction. The revised instrument did allow for more detailed data when considering the 'instruction' used by the coaches. The type of instruction used by the three coaches did differ in type and amount and in many ways the increased sensitivity of the revised instrument enabled the researcher to discuss the coaches' instructional delivery in more detail. It allowed for a detailed profile of what each coach was doing during the coaching sessions. Evidence was collated that informed the researcher about the timing and nature of the instruction used by the coaches.

5.4 Implications of the study

This study aimed to investigate the coaching behaviour of team sport coaches within an IAPS school. There is no suggestion that this study is in anyway a representation of what takes place within all IAPS schools. It is a preliminary investigation that provides an opportunity to debate issues regarding why these independent school coaches coached in the way they did as well as producing interesting comparisons with coaches from other sectors and coaching environments.

Systematic observation has been criticised in recent years (e.g. d'Arrippe-Longueville et al. 1998) by suggesting that more qualitative approaches to understanding coaching practice are better and more informed. Certainly, a 'mixed-method' approach of quantitative and qualitative research has been advocated as an excellent way of understanding the reasons why coaches coach in a certain way (Potrac et al. 2002; Tharp and Gallimore 2004). What systematic observation can do, however, is add to existing databases, thus providing real evidence regarding a sector or an individual's coaching behaviour. Systematic observation, similar to that used within this thesis may also be used to provide information about a team of coaches and may aid a director of sport or head coach in understanding the coaching styles and expertise of a team of coaches. This information could then be used to aid the improvement of individuals (Lacy and Darst 1985; Brewer and Jones 2002). The analysis of valid and reliable systematic observation data also provides an opportunity for a coach to self-reflect and self-evaluate their own coaching, as the systematic observation instrument is effective in highlighting areas of a coach's behaviour that require development (Lacy and Darst 1985). Perhaps the modification and adaptation of the ASUOI can be used to focus on one aspect of a coach's professional performance. If, for example, a coach wants to improve their use of instruction then a systematic observation over a period which just focuses on the

use of instruction may aid an individuals' desire to develop. A more creative approach to using the ASUOI may be beneficial to coaches in the future.

The study also adds to the debate that is discussed by Brewer and Jones (2002) regarding the importance of increased validity and reliability of the instrument used for systematic observation. Each environment is unique and the systematic instrument used needs to be sensitive enough so that the data created is deemed correct and a true representation of what the coaches(es) are actually doing. The complexity of the instrument is an issue and Brewer and Jones (2002) do highlight the need for rigorous training regarding the familiarity of the behaviour definitions and the use of the instrument; but rigorous training and intra or inter observation tests, as seen in this study, may well be worth it if the researcher, head coach or coach is keen to have information about a coach's performance that is both valid and reliable.

The coaches observed in the current study were also teachers and used methods akin to those seen in education. The use of open questions, learner models and observation have been increasingly used within education in response to the government's embracing of AfL and Black and Williams' (1998) study into teaching and learning. Recently authors and researchers have been keen to indicate the similarities between teaching and coaching (e.g. Jones 2007; Wikely and Bullock 2007; Penney 2007; Potrac and Cassidy 2007). Certainly the endorsement criteria for the UKCC in 2004 advocates the use of teaching methods such as questioning and modelling. The endorsement criteria for the UKCC is currently being reviewed and one can assume that teaching and learning will continue to form part of national governing bodies coaching awards syllabi.

Roberts (2009) suggests that due to the increase of educational methods being included within the national governing bodies awards; perhaps it is time that higher education institutes are consulted regarding the content of levels 2 and 3 in addition to the consultation that currently takes place regarding levels 4 and 5. He also argues that there are now huge similarities between the undergraduate courses of sports coaching and P.E. and suggests that more collaboration and sharing of ideas by these courses is now justified and important. Certainly, some of the coaches within this study seemed to use teaching techniques during their coaching sessions and more so than the professional sports' coaches (Cushion and Jones 2001; Potrac et al. 2002; Potrac et al. 2007) or those within youth and school environments (Claxton 1988; Miller 1992). The unique environment found within IAPS schools where academic or P.E. teachers are also coaches of a sports' team for numerous hours over several weeks may be useful in analysing and understanding more fully the benefits of using teaching methods within a coaching environment.

5.5 Future research

The purpose of this research was to make the first steps into the systematic observation of independent school coaches. The preliminary investigation thus provides the basis to which further study can be added. It is hoped that the debate generated by the results in this study will provide inspiration and ideas for future research and discussion. The thesis outlines below some of the possible avenues of research that are related to the findings within this study.

More research is required regarding the coaching behaviours of coaches within independent schools. An increased database of the sector's coaching behaviours will help understand its unique coaching environment more fully. It would also be interesting to find out more about

the coaching of teachers. More insight into the style and effectiveness of coaches who are also teachers will perhaps help understand coaching as a profession inextricably linked to teaching and education. Sir Clive Woodward, the victorious coach of England 2003 World Cup winning rugby union team suggested that the best coaches are good teachers (Cain 2004). Why he believes this is not really clear and we may never really find out; it may be that teachers are able to use a variety of communication techniques or that teachers are naturally good at reflecting or that good coaches, like good teachers, care about the learners in their charge. Further research into coaches who are or have been successful teachers may help us find out more about the theory that good coaches are good teachers or equally that good teachers make good coaches.

“‘Listen, watch and learn’ are frequent words of wisdom from parents, teachers and coaches. The questioning learner might ask, ‘What should we listen to, what should we watch?’ and the questioning teacher (coach) must equally decide ‘what to tell and what to show?’ ” (Hodges and Franks, 2004: 145). This study has used a revised systematic observation instrument, which focused in more detail on the precise nature of a coach’s instruction and modelling. More research is required into the precise nature of instruction and modelling used by coaches of different expertise, levels, sports or genders. This could be done quantitatively with the use of a less complex instrument that focuses solely on instruction or qualitatively with the focus on understanding why coaches instruct in a certain way. Future studies could now focus on the type of instruction provided and the quality of learning this instigates within a coaching environment.

Further research into observation is required to help us understand how and why coaches use observation. Qualitative or a mixed-method approach could be used for example to find out

about the observational techniques used by expert coaches. Seemingly, the process of ascertaining what it is an athlete or learner is actually doing has had little focus from researchers or authors. Perhaps it is time to understand this process more fully and that this vital aspect of coaching is more thoroughly investigated.

5.6 Chapter conclusion

The aim of the study is re-introduced and the findings of the research are summarised. The implications this study may have on the future use of systematic observation in sports' coaching and specifically the independent school sector are noted and discussed. The chapter ends by suggesting possible future avenues of research.

This preliminary investigation has shed some light on a sector that has received seemingly little research or focus from authors of sports' coaching literature. The IAPS sector, it has been argued, is a unique coaching environment. An understanding of the coaching behaviours within these schools may aid those who wish to understand more about a complex profession. This study may be of particular interest to those who view coaching as teaching and want to research the benefits of teaching methods within the coaching arena. This study may have paved the way for others to investigate more intensely the coaching behaviours found within independent schools whether IAPS schools or otherwise.

Chapter 7: APPENDICES

6.1 Appendix A Arizona State Observation Instrument: record sheet

Coach _____ Date _____ Observer _____

School _____

A Pre-instruction	H Hustle
B Concurrent instruction	I Praise
C Post-instruction	J Scold
D Questioning	K Management
E Manual manipulation	I Silence
F Positive modelling	M Other
G Negative modelling	N Use of First Name

6.2 Appendix A New criteria record sheet

Coach _____ Date _____ Observer _____

School _____

A Pre-instruction	L. Coaches' model
B Learning intention	M. Learners' model
C Concurrent instruction	N. Negative model
D. Concurrent feedback	O. Hustle
E. Concurrent feedforward	P. Praise general
F. Post-feedback	Q. Scold general
G. Post-feedforward	R. Use of humour
H. Praise at skill attempt	S. Management
I. Scold at skill attempt	T. Observation
J. Closed question	U. Conferring with assistant
K. Open question	V. Uncodable

6.3 Appendix 3 Consent form for participants involved in research

:

I _____ (please print name) certify that I am voluntarily giving my consent to participate in the sports' coaching study being conducted by Gideon Sutcliffe from the University of Birmingham.

I am fully aware of the following points and procedures

- I will be asked questions related to my personal coaching and career.
- My coaching sessions will be observed by Gideon Sutcliffe and data related to these will be recorded.
- My consent is completely voluntary and I may withdraw my participation in this study at any time.
- All information/data provided will be made anonymous and will not be released to anyone not involved in the data collection and analysis.

Signature of the participant: _____ Date: _____

Name: _____

Witness (other than researcher): _____ Date: _____

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