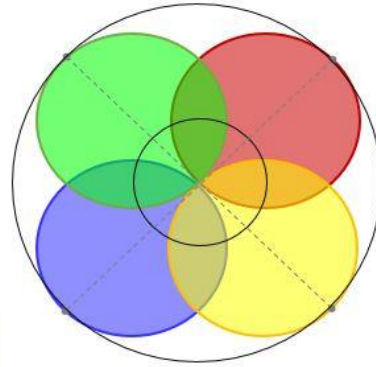


# Blended Intelligence

Unleash the brilliance of the team



Physical Prep

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Sports Science

## Coach's Expertise

### Conceptualise the performance coach's expertise

When thinking about an expert we think of someone displaying high mastery of a skill, effortlessly displaying craft and having a large amount of wisdom and tacit knowledge about their subject. What is clear from the literature is that a rounded definition of 'expertise' is still to be found (Cote and Gilbert 2009). In the context of sports coaching, which is described largely as a problem based, cognitive (Lyle 2002), decision-making process (Abraham, Collins and Martindale 2006), expertise is ill-defined resulting in less effective coach development and education programmes (Cushion, Armour and Jones, 2003; Trudel, Gilbert and Werthner 2010).

Coaching is a messy, unpredictable business (Lyle 1999) described by Mallet (2010) as uncontrollable, incomprehensible and imbued in contradictory values (in Lyle and Cushion, p121). Set against a backdrop where coaching is viewed as 'muddy' and 'turbulent' whilst also being described as systematic, planned, organised and sequential (Lyle 2002), the difficulties defining expertise in sports coaching become clear. In the following essay, by drawing on the literature, we will conceptualise the strength and conditioning (S&C) coach's expertise. We will discuss how this is developed and suggest implications for coach education in what is an emerging profession, to better prepare coaches for the complex coaching environment.

*"Expertise is defined as the on-going process of the acquisition and consolidation of a set of skills needed for a high level of mastery in one or more domains of life performance."*

**(Sternberg 1999, p359)**

Is expertise a term gifted to those who devote hours of practise to developing the skills and knowledge associated with a particular task? Is this perhaps too simplistic in that it fails to acknowledge the individual, their past experience and what generally makes them tick. Ericsson describes the development of expertise as mastery of superior skills through training and extended deliberate practice (2005, p233). Robert Sternberg (1999) suggests that intelligence is the development of expertise and exists in five skills including metacognitive, learning, thinking, knowledge and motivation and then goes onto discuss social and cognitive expertise emerging through the context which is it applied.

*“Three elements consistently emerge as contributing to the expertise of a coach: (a) experience, (b) knowledge, and (c) skills.”*

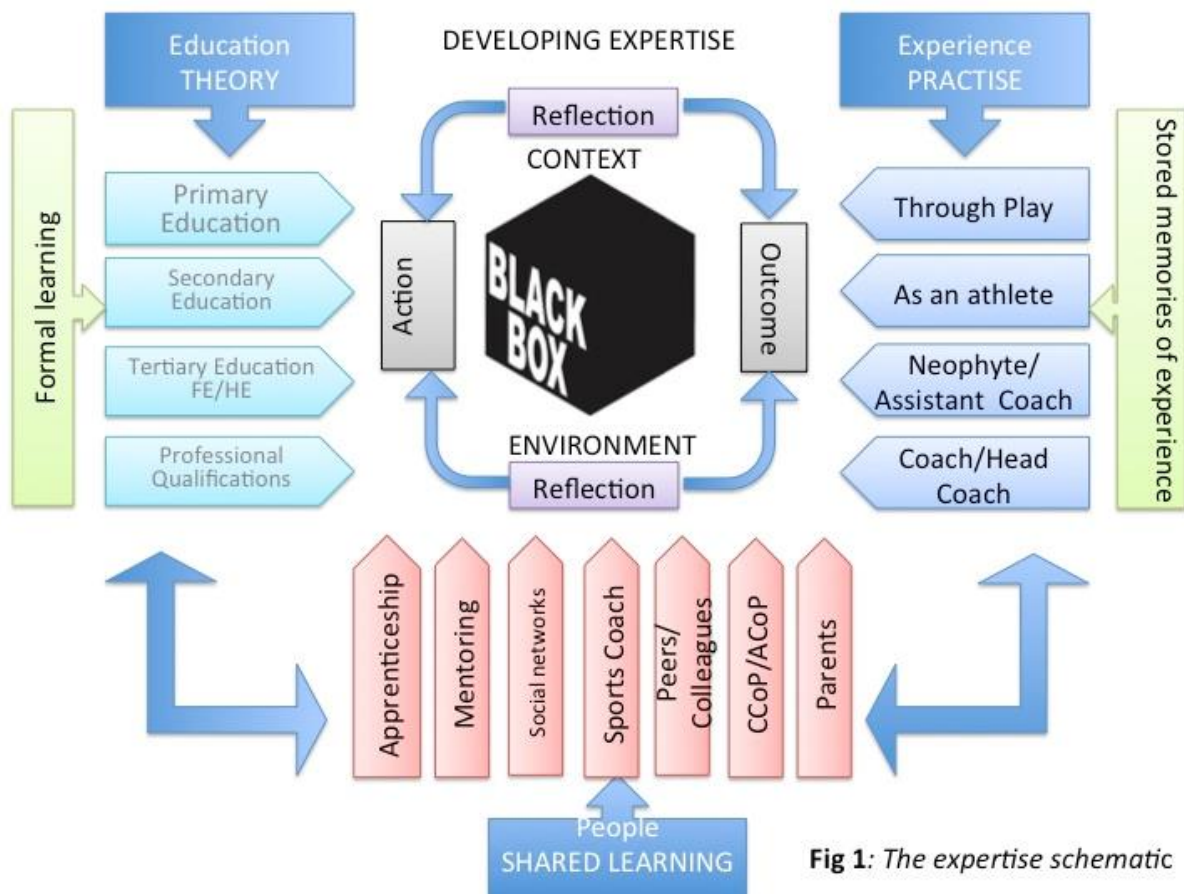
**(Schempp and McCullick in Lyle and Cushion, 2010, p221)**

The S&C coach requires theoretical (sports science), practical (weightlifting techniques and models) and social (inter-personal) knowledge. They must possess the ability to learn as they might be assigned to a sport (or number of sports), which they have limited knowledge and/or exposure to. They will be expected to infiltrate the environment, understand the culture and have impact in what could possibly be a sport that has limited or conversely a high experience of service support.

The coaching expertise schematic in figure 1 demonstrates a number of the elements and factors suggested in the literature as contributing towards expertise in sports coaching. In essence coaching is about sharing declarative, procedural and conditional knowledge (Abraham et al 2006; Cassidy, Jones and Potrac 2004) in different situations, contexts and

environments. This knowledge is also described as tacit and explicit (Cote and Gilbert 2009) and is gained through various pathways.

**Figure 1:** The coaching expertise schematic



**Fig 1:** The expertise schematic

The schematic shows three pathways where coaches gain knowledge and experience. In education (development of theory) through formal learning (Mallet 2010), through experience developed in practise (Cassidy and Rossi 2006) and finally through people, in shared and informal learning environments (Culver and Trudel 2008; Galipeau and Trudel 2006; Lyle 2002; Mallet 2010;). All of this experience and knowledge is placed in 'the black box', which is a metaphor for coaching expertise. The coach can add to the black box at any time through each or any of the identified pathways to be called upon and utilised in their

coaching practise. Depending on the environment and context (Lyle 2002) of the intervention, the action and outcome is assessed, reflected upon (Cushion et al 2003; Gilbert and Trudel 2006) and then stored in memory, adding to the black box of knowledge.

### Education (Theory)

Education will form the basis for developing expert knowledge (Trudel et al 2010; Mallet 2010). Intelligence is measured through exams and tests and in developing this cognitive expertise (Sternberg 1999) do we develop the practical, social and interpersonal skills that are required in the coaching environment? Many expert coaches placed a high value on their tertiary education and were in fact statistically more likely to become high performance coaches having had some form of higher or post graduate qualification (Mallet 2010; Trudel et al 2010).

Coaches are described as knowledge sponges seeking out opportunities to learn (Schempp, McCullick and Mason 2006). It is interesting to note that conferences, seminars, workshops and professional qualifications feature less highly as a requirement of the expert coach (Cote 2006), often preferring to share problems with colleagues and peers and seek out knowledge for themselves by exploring alternative environments and different sources for information (Schempp and McCullick 2010). Novice coaches tend to value professional qualifications in the early stages of their career believing that they give them credibility in the sporting environment. Coach education is highly criticised in its current modular, theoretical, classroom, assessment and silo-based format (Cote 2006) for being ineffective in developing the integrated, problem driven knowledge that coaches need to be effective (Cassidy and Rossi 2006).

Strength and Conditioning is still a relatively young profession and the skill set of the S&C coach has to be multifaceted. Most employers expect applicants to be UKSCA accredited and possess some form of sports related degree. The preferred education pathway is through sports science, there are now a large number of undergraduate and higher degrees taught in this and S&C but these courses have produced a number of academic 'theorists' who have excellent scientific knowledge but who significantly lack practical skills and abilities, struggle to integrate specialist knowledge with other service areas (bio-mechanics, nutrition, physiotherapy) and find it hard to relate and convey information in a relevant way to athletes and sports coaches.

The UKSCA's training programme is limited, delivering stand-alone 'modular' workshops targeting individuals with no or little S&C background. The accreditation process attempts to assess the candidate's competency through their practical lifting, coaching ability and underpinning theoretical knowledge through an exam and applied case study. There is currently no form of advanced support available for S&C practitioners. No attention or thought has been given to the coaching skills, soft-skills, integrated and inter-disciplinary team working or the environment which S&C coaches will likely work. An attempt has been made by UK sports in partnership with the English Institute of Sport to deliver a fast track practitioners course within the home institutes. To develop the practitioner's soft skills and reflective abilities they are assigned a mentor (from within the practitioners organisation) and learning occurs through coached support framework.

### Experience (Practise)

10000 hours or 10 years of experience are largely used to qualify a coach as an expert (Ericsson 2005; Lyle 2002; Schempp and McCullick 2010). When we consider all the experience that the individual develops through play, as an athlete, and through coaching we can see a depth of knowledge gained through a variety of people (teachers, coaches and mentors) and situations (training, playing and coaching). Interestingly, some expert coaches did not play their sport at the highest level leaving because of injury, an apparent lack of ability or a lack of desire. It has also been stated that expert coaches often have a broad based athletic career competing in a number of sports as opposed to specialising (Trudel 2006; Jimenez, Lorenzo and Ibanez 2009). When we consider Sternberg's (1999) argument that mastery comes through early specialisation we can see that this perhaps does not fit in a sporting context. This is perhaps because of the multi-faceted, integrated and inter-personal nature of sport where tactical and technical knowledge is only a small area of the coach's total expertise.

The experiences from the coach's early playing and coaching career form the basis of expert knowledge (Jimenez et al 2009). When coming across coaching problems, the neophyte coach will often try to fix them or make coaching decisions on a trial and error or random bases. They do not know how to make long lasting changes to a performance and will often guess. There is nothing wrong with this approach; trial and error provides the developing coach with a range of experiences to store in the black box to be called on at a later time when an appropriate situation requires it. Arguments for situating learning through internships and apprenticeships to enhance coach education and develop better coaches add weight to this argument (Cassidy and Rossi 2006).

This again brings into sharp focus one of the issues with the S&C coach training market. In acknowledging that expert coaches have many years of experience as an athlete and coach we can see that our coach education programmes fall well short of what is required. Training providers assume that by showing someone how to lift weights and describing the relevant technical coaching points that this adequately prepares them to pass an assessment or get a job. Some that attend these workshops have never been in a gym, never lifted and never played sport. The depth of understanding is lacking and these courses should be seen as introductory in its simplest sense. Work placements, reflective log books, evidence of previous lifting experience, coaching or taking part in S&C as an athlete, could all be pre-requisites for attendance at weightlifting workshops and assessments to get a better quality of coach.

### People (Shared Learning)

Parents, teachers, coaches, mentors and senior's influence and shape emerging coaching behaviour as the individual progresses through their formative years, education and sporting career (Cushion 2006). These experiences are pivotal to the development of the coach's views, thoughts and behaviours and raise interesting questions of how we learn from others. The formation of early knowledge that the coach will use much later in their coaching career cannot be deliberately taught however, coach education has a role to play in raising the coach's awareness of knowledge that was 'imparted' by others and challenging its effectiveness (Cushion 2006). The 'education' and 'experience' pathways are directly linked to the 'people' pathway because of the inter-personal nature of sport and sports coaching (Lyle 2002). Some of the environments and ways in which these interactions occur are worth note.



In developing expertise coaches place a large value on workplace, non-formal, informal and incidental learning (Culver and Trudel 2006). Communities of practise are defined as groups of people who work together to solve common problems and are characterised as having mutual engagement, joint enterprise and shared repertoire (Culver and Trudel 2008).

*“A group of people who share a common concern, set of problems, or a passion about a topic, and who develop their knowledge and expertise in this area by interacting in an on-going basis.”*

**(Culver and Trudel, 2006 in Lyle and Cushion 2010, p129)**

Communities of practise (CoP) should not be confused with other social networks that have a place in informal learning. Informal knowledge networks (IKN) and networks of practise (NoP) also provide the coach with opportunities to share knowledge and develop understanding of complex issues (Cassidy et al 2004; Mallet 2010). Interestingly, authors have recognised institutes of sport as sites for learning with a number of coaches and expert practitioners interacting formally and informally in a professional manner around common problems (Rynne, Mallett and Tinning 2006). A range of social and professional networks exists in this environment and there is no doubt that expertise can be developed to place in the black box here. Is there an opportunity within coach education to harness this style of learning through ‘cloud’ formats or within the high performance environment through cleverly conceived or orchestrated problems for coaches and practitioners to solve?

To provide support to S&C coaches who have their basic qualifications and accreditations, internships, apprenticeships or mentored learning (Cushion 2006; Jones, Harris and Miles 2009) should be explored as a powerful format for situated learning (Cassidy and Rossi 2006). In the professional club and institute environments it takes time to develop the necessary skills to be effective. Internships and apprenticeships are used in different professional environments (often poorly as cheap or free labour) to give graduates 'on the job' experience. Giving the intern the opportunity to apply their skills practically will allow them to connect the 'silo-based/modular' knowledge they possess together to provide them with real experience. Learning through these formats has to be deliberate and well structured, it is better to allow the intern to drive this and use their mentor as a sounding board to discuss the problems and outcomes that occur. If not, the danger is that the intern does what they are shown to do without displaying any real understanding (Cushion 2006).

We have identified three distinct ways in which we can add to coaching knowledge. If the black box is a metaphor for coaching expertise, let's explore some of the behaviours that make up the expert (Schempp et al 2007; Schempp and McCullick 2010). Figure 2 represents a further development of our black box model and depicts expertise around which, the characteristics of the expert coach can be seen. The black box increases in size as the coach' experience, knowledge and understanding develops in the different contexts and environments that they gain exposure. Depending on the individual coach, when faced with problems, they may opt to stay on safe ground playing with solutions that they know where as others will test their boundaries to learn new skills and strategies. Reflection is a massive part of developing expertise by transferring experience in to knowledge (Gilbert and Trudel 2006), the black box can only increase its capacity if coaches are prepared to try new things,

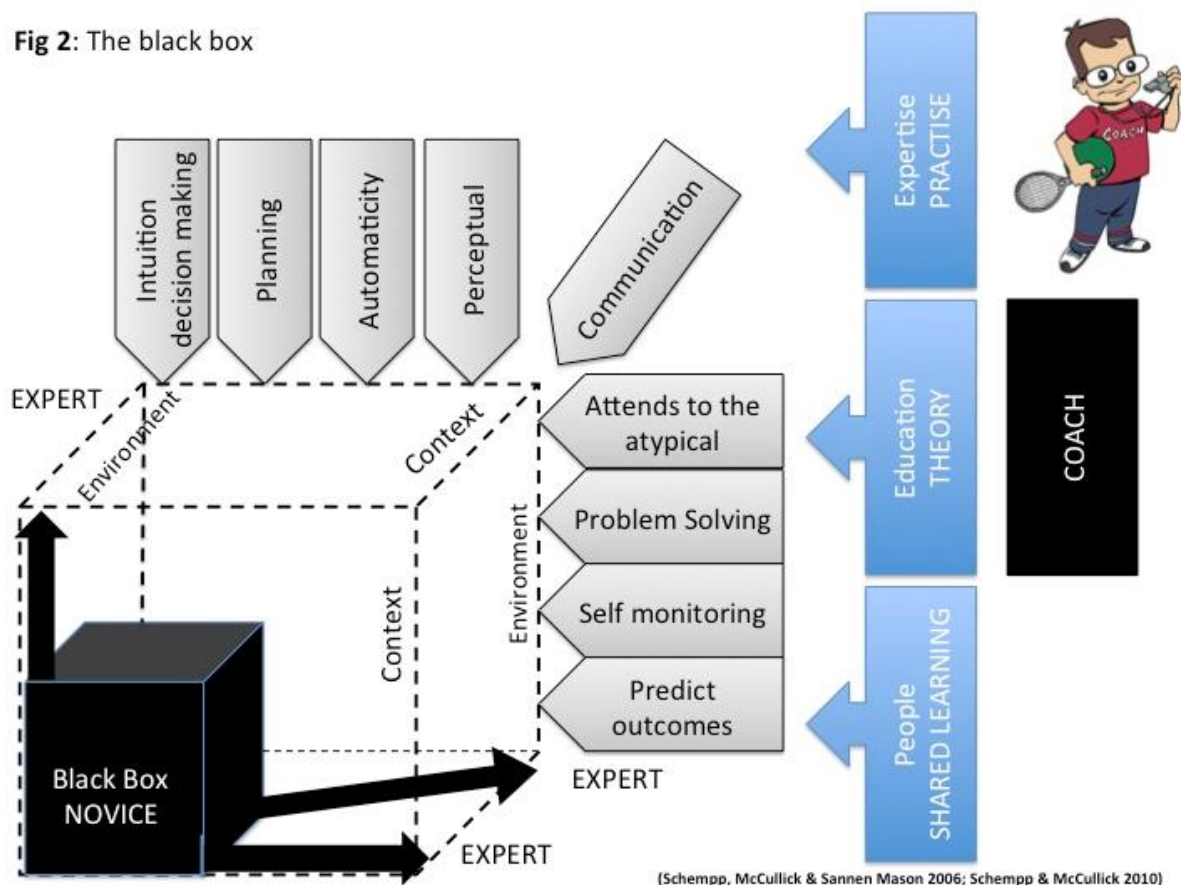
reflect on the outcomes and change their behaviour as a result of this (see figure 1). Trial and error and random practise should be encouraged in the developing coach. Coach education must place an emphasis on reflection so that the coach can understand their actions at a deeper level.

*“To become better skilled at one’s professional practise, a novice teacher or coach needs to do more than simply spend time on the job. It has been repeatedly suggested that the key to experiential learning is reflection.”*

**(Gilbert and Trudel in Jones 2006, p114)**

Figure 2: Content of the black box

**Fig 2:** The black box



Effective reflection is a skill in itself that may need to be taught. There are individuals who will state that they are reflective practitioners and those who will naturally reflect on the outcomes of their actions. Is this reflection effective? For some, reflection must be a more deliberate exercise and may need to be guided by a teacher, more experienced coach or mentor. Donald Schon's (as cited in Jones 2006) reflection in action, reflection on action and reflective conversations are informal ways through which coaches can learn from their actions. Action without reflection will result in a lack of understanding of the outcome and will stunt the growth of expertise.

### Coaching skills

Intuitive decision-making, automaticity and the ability to predict outcomes are characteristics associated with the expert coach. The coach has been in a number of situations and environments where they have seen similar patterns and problems before and have tried a number of different solutions to the issues they encounter. It is this wealth of saved knowledge that is drawn upon that allows the coach to look at a situation, identify and recognise the issue through a range of cues and plan a number of potential fixes to the problem. The expert coach can call upon this stored information rapidly and will often be looking for much deeper feedback than the novice. Attending to the atypical is another trait of the expert. Instead of trying to fix an issue through trial and error or guess work as the novice might, the expert will look for the actual cause of the problem so that once it is solved, it remains fixed (Schempp and McCullick 2010).

A good example of where tacit in-depth knowledge can be demonstrated by the expert S&C coach is when looking at an athlete's squat. They may pay particular attention to a poor

back or pelvis position in the skill (and suggest corrective exercises) where as the novice might focus on the basic pattern of the squat not observing the deeper issues at all. When we explore the expert's knowledge we find out that they have spent significant time with physiotherapists carrying out profiles, correcting musco-skeletal issues and reducing underlying injury risk that a novice with basic knowledge simply could not. The expert carries a much deeper knowledge and sees much more than the novice counterpart

The expert coach will be able to predict outcomes based on rapid pattern recognition and have been described as having heightened perceptual abilities (Schempp et al 2006). The novice may not understand the outcome related to a certain intervention or action they have carried out. Expert coaches have the ability to calculate a number of potential outcomes to their intervention and often have planned a series of moves or instructions ahead. Again, this ability is related to the coach's experience and knowledge. This can be seen when expert S&C coaches describe how they know just by the sound of the bar in an Olympic clean or by observing the bar path through the first pull exactly what the outcome of the lift will be. This knowledge's inception lies in the hours of practising and observing these skills and sharing ideas with other expert coaches.

Finally, the communication skills of an expert coach are much better developed than that of the novice. The expert will tune into their athlete, acknowledging learning style, individual characteristics and motivations and then convey information in a number of ways (visual, verbal, kinaesthetic) to provide a rich information sharing experience. The expert has considered how they will communicate to be effective where as the novice will give basic instruction often not considering how this is received (Schempp and McCullick 2010)

### Context and environment

In-situ models of the coaching process have provided new insight into coaching behaviours (Cushion, Armour and Jones 2006). Previous work exploring models of coaching were criticised for not acknowledging the environment and context in which the coaching behaviour was observed. Analysing coaching when the environment, culture and context are acknowledged provides a better, deeper understanding of coaching expertise (Lyle 2002). As the coach moves through their career they will be exposed to coaching in different contexts and environment and this will present a number of new challenges through which, experiences will be captured. These varied opportunities develop expertise and increase the size of the coach's black box.

In conclusion then, the coaching schematic in figure 1 represents the development of expertise through acquired knowledge in the form of education, practise and shared through systems and people. Expertise is context and environment specific and mastery of certain skills happens over time (figure 2). Coach education in its current form fails to acknowledge the complex nature of sports coaching and its integrated multi and inter-disciplinary nature. Internships and apprenticeships should form the foundation of situated learning allowing novice coaches to develop beyond their academic training towards a practical 'on the job' skill set. Mentors play a pivotal role in directing these experiences; education and support should be given to them to facilitate learning without dictating it and in giving feedback so that they don't give answers and solutions without explanation. Reflection should be introduced to the learner and structures put in place to develop

reflective practise. This will allow for deeper, richer learning experiences where action and outcomes are better understood and a broader understanding developed.

A final thought should be given to coach education, which must move beyond a vehicle for income generation at the grass roots level. Providing a 'bums on seats' format to coach education fails to acknowledge the individual's abilities and strengths, the environment that they will operate and the integrated skills that they require to become an expert. Re-aligning coach education courses to a format similar to that of the UK fast-track practitioners course with the education provider working in partnership with sports, institutes or NGB's to provide a learning platform within the workplace environment will ensure learning takes place in a relevant and applied way, and in a guided manner. This will accelerate learning potential significantly and develop the coach's applied expertise. The notion of well-run apprenticeships and internships provide an exciting opportunity for coach development but may not be practical for high volumes of people. In this instance, perhaps facilitated 'cloud' learning or coach education courses around 'real coaching problems' will better prepare individuals to exist in the multi-disciplinary context.

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