CHAPTER NUMBER

**THE RELEVANCE OF SPORTS SCIENCE INFORMATION TO COACHES OF FOOTBALL & RUGBY LEAGUE**

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Introduction

Sport science research into various areas, e.g. strength & conditioning, psychology, motor skill acquisition, has generated vast quantities of information for sport coaches (Bishop, 2008; Reid et al., 2004; Williams et al., 2007a). Sports scientists claim to make a significant contribution to the body of knowledge that influences athletic practice and performance (Bishop, 2008).

Recent studies have shown that coaches tend not to value information that cannot be readily translated into practical activities for use in their coaching (Nash & Sproule, in press; Williams & Kendall, 2007a; Quinlan, 2002). Spinks (1997) drew attention to differences between the focus of sports science research projects and coaches perceptions of the knowledge necessary to enhance their coaching.

Canadian University coaches (CIS) reportedly believe that sport science makes an important contribution to high-performance sport but gaps exist between what coaches are looking for and the research that is being conducted (Reade, Spriggs & Rodgers, 2008). The Australian model favours multidisciplinary support teams, comprising assistant coaches, physiologists, psychologists, performance analysts and physiotherapists, managed by the coach (Reid, Stewart & Thorne, 2004). Much of the sport science research carried out in Australia is quantitative in nature, and tends to focus on the sports of cycling, rowing, athletics and swimming (Williams & Kendall, 2007b).

The aim of this study was to determine how helpful sport coaches within football and rugby league found sports science support within their specific sports and coaching environments within a UK context. Given that research highlights coaches feel there is a lack of practical application and direct relevance to their needs, a qualitative methodology, focus groups, was considered to be most suitable.

Methods

Six groups of coaches were interviewed in focus groups, three from both football and rugby league. Each group consisted of 5-7 coaches, at novice, developmental or elite level in their respective sport. The semi-structured interviews lasted between 60 and 80 minutes, were digitally recorded and transcribed verbatim. The data was inductively analyzed to interpret the meaning of the phrases used by coaches in response to questions as well as the discussion arising from the group interviews (Côté et al., 1995).

Findings & Discussion

The analysis revealed 206 raw data themes that were developed into 3 distinct themes:

* language
* practical application
* ease of access.

There were key differences between both sport and level of coaching. These findings are discussed using the coaches own words to highlight the depth and richness of their responses.

Language

There was much discussion of the language that sports science research for academic publication was written in. A National Coach from the Football Association (FA) said:

‘I’m a big believer that there shouldn’t be a barrier to information and if the language used is of an academic nature, then that’s a barrier too and it’s not decrying grass roots culture, because sometimes it’s a barrier to me. If that’s a barrier, then it needs to be removed.’

This view was backed by an elite rugby league coach, who thought:

‘Rugby league coaches have rugby league jargon and researchers have researcher jargon’

However this was followed by his own personal reflection that:

‘I believe we have a duty to educate coaches coming through as much as we can. Some of the jargon, if you like, has still got to stay there.’

The language being used appeared to these coaches to be unnecessarily difficult to understand in the minds of these coaches, which has been found in similar studies (Nash & Sproule, in press: Williams & Kendall, 2007a & 2007b). A developmental rugby league coach felt that he would not attempt to read them as: ‘You get pages of tables of statistics and you look at N equals de de de de’ although a football development coach offered the following suggestion, thinking:

‘I’m not saying get people to read it for you but if someone has read it and there’s a clear message coming from a journal, can it be summarised and put on one page, these are the 8 points that come out of this journal, fact, you know, they’ve done the research, it’s backed by X, Y and Z as well in whatever it is, there you go. So you get the messages. That sounds a bit lazy but....’

However, a developmental rugby league coach felt very strongly that it would only be useful: ‘If it’s summarised in English.’ Although another rugby league coach thought:

‘I think sport science is a particularly difficult area because the research by its definition is technical but I mean, you almost need 2 versions of it You need the research and then you need a popularised version if you like specific to your sport because there isn’t a huge amount of sport research specific to rugby league, although it’s getting better.’

A national football coach also stated: The idea of sitting down with a 30 page journal, you know, with a cuppa tea does not turn me on at all.’ Some coaches have identified a need for more dissemination of research findings via coaching clinics and sports-specific magazines, and the use of more appropriate "lay" language in information dissemination (Bishop, 2007).

Practical Application

The elite rugby league coaches and developmental football coaches agreed emphatically that unless sports scientists could demonstrate how research findings could be applied to benefit players and coaches there was little point to their studies. An elite rugby league coach stated:

‘I’ve come across a lot of theoretically very sound sport scientists who perhaps haven’t been practical and that’s really what you need from sport science is not only the knowledge but the ability to practically apply it.’

And another backed this up saying: ‘you don’t improve players, you don’t win trophies through theory. You do it practically.’ A football development coach reflected:

‘I think coaches, in a general terms, they like to see things applied. So for me I’d like to see that research applied to what I’m doing and even maybe be involved in the research itself, so that I can see how it’s all gone about and what the outcome was at the end of it. So if there’s a follow up to a piece of research going on and I can be involved in it, it’ll be fantastic because then I would be more inclined to use it.’

Another football development coach took the aspect of practical application of sports science one step further

‘So if it’s the science, it’s not just the how you do it, it’s what you’re actually doing it for – the why. But why are we actually doing that and what are we improving in the kids? Is it not just their physical literacy or is it the whole rounded person?

The influence of sports science on physical literacy was debunked by another football coach who was of the opinion that:

‘It’s the most natural thing in the world. There’s nothing scientific about me growing up being able to run and jump and play, it’s just nature.’

The aspect of practical application led to a heated discussion amongst these coaches about the strong influence that they perceived sport science and sports scientists to have within their sports. An elite rugby league coach thought:

‘I think that in sport in general, sports science is leading too many sports rather than the sports leading the sport science.’

A football national coach was of a similar opinion, saying:

‘I think we’re the sport definitely in danger of letting the sport science go off in this direction and drag the game with it when actually the game’s the game, sport science should enhance the game. The pendulum’s gone too far in the other direction in my opinion and it needs to come back a little bit’

The protectiveness of these coaches was apparent when discussing their perceptions of both the control given to sports scientists rather than the coaches as well as the difficulties associated with applications to coaching practice. The multidisciplinary research mentioned earlier found that most conflict between coaches and support teams arose when athlete issues were involved (Reid, Stewart & Thorne, 2004). It also suggested that clear delineation of roles be established initially to allow harmonious development of a coaching programme, a concept the coaches in this study have not accepted.

Ease of Access

Many coaches admitted that they did not work with sport scientists, or indeed any support, on a regular basis. The elite coaches, from both rugby league and football, had different experiences, with the football coaches utilising them extensively within the competitive environment but also thought:

‘I think too often certainly in the club environment from my experience where they’re left in isolation and I think that’s what the negative is they’re just seen as someone who warms the players up.’

A professional rugby league coach was of the opinion:

‘as a sport, we’re one of the leading lights in terms of embracing sport science, aren’t we? In terms of new ideas and thoughts and things and we’re forever looking for those extra edges. But when you get to my level, you’re a jack of all trades really, so as you coach, you tend to use a bit of everything.’

He continued on to say:

‘It’s the relationship between coaches and sport scientists that’s the interesting bit, isn’t it? How much is the coach also sport scientist? You need to be able to ask the right questions, don’t you? ‘

This relationship he referred to takes time to develop and can only be reached when coaches and sports scientists interact on a regular basis, building a good working relationship. This was explained by a coach of a top English football team, stating that sports scientists needed to:

‘Be a part of the team, not apart from the team. So I’ve had experiences where there’s been some terrific sport science working within the structure of the club guided and managed by the head coach or whoever, particularly for pre-season and rehab. I think that’s a vital commodity.’

However another elite level football coach was of the opinion that:

‘You don’t need it that often. It’s like one of those ones where you get a first aid certificate, you pray you never have to use it. So I mean, you don’t lose it but, you know, if you’re asked, you know, a test on the spot, so it’s been refreshed I would suggest once a year on various CPD things first aid, for injury, training and stuff like that.’

If this was the case there would be little occasions for coaches and sports scientists to work closely, to bridge the gap, as suggested by Goldsmith (2000). Another elite football coach did not have the opportunity to interact with sports scientists, but felt it was not necessary in the coaching environment that he was currently operating within, saying:

‘That’s why I wouldn’t do any sport science stuff, I’d put on some appropriate age related activities so that the coaches could see the benefits of them and they’d be football based and if they move on from there to centre of excellence academies, they’ll get introduced to that (*sports science)*. It’s like bringing in sex education for under 4s, isn’t it, but they don’t really need that yet, they need to be kids.’

So far, there has been little evidence to suggest that coaches rely on sport scientists for their information, which would indicate minimal interaction between sport scientists and coaches (Reade, Spriggs & Rodgers, 2008). Over the years, sport science has mainly been viewed by coaches as inaccessible, too technical, or in many cases, non-applicable to the actual sport setting. There is a widening gap between scientific knowledge and practice and that, in general, the utilisation of research in practice is poor (Bishop, 2008).

There was also considerable debate within all of the groups as to what sports science actually was, some individuals favouring inclusive definitions whereas others stuck to very rigid criteria, for example, one football coach seemed to consider sports science as physiology, saying: **‘**most academies will have dedicated sport science but very few have dedicated psychologists.’ The British Association of Sport & Exercise Science (BASES) encourages accreditation in the disciplines of physiology, psychology and biomechanics as well as in interdisciplinary focus. Other coaches seemed to favour a more holistic definition thinking that:

‘the way you structure practices and also consider the needs of the players – the age and the stage of their development and whether they are enjoying the sport – is all sports science to me.’

Perhaps the national governing bodies of sport, in this case rugby league and football, need to introduce sports science and perhaps more importantly, sports scientists to coaches earlier in their development. This may allow a meaningful relationship to develop, enabling coaches and sports scientists to develop their own communication methods and meaningful applications to not just the sport but the players and the coaches. At present the situation was summed up by one football coach, who said:

‘I mean, there were two great quotes on it. One was Winston Churchhill said, scientists should be on tap, not on top. And Gerard Houllier said, football is too important to leave in the hands of sport scientists.’

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